

**RGV Solar, LLC - Magic Valley Electric Cooperative - Brownsville, Donna,
Raymondville, Harlingen Environmental Assessment**

**4337 North Goolie Road, Donna; 23625 Hand Road, Harlingen; Valdez Road,
Raymondville; and JCS Industrial Drive, Brownsville Project Sites, Cameron,
Hidalgo, and Willacy Counties, Texas**



**4337 North
Goolie Road**



**23625 Hand
Road**



Valdez Road



**JCS Industrial
Drive**



Prepared for:

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ACRONYMS AND ABBREVIATIONS

ACS	American Community Survey
amsl	above mean sea level
APE	area of potential effects
BMP	Best Management Practices
CR	County Road
CWA	Clean Water Act
ER	Environmental Report
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FM	Farm-to-Market Road
ft	feet/foot
GCWA	Golden-cheeked Warbler
IES	Integrated Environmental Solutions, LLC
mi	mile
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
PALM	Potential Archeological Liability Map
RD	Rural Development
ROW	Right-of-Way
TASA	Texas Archeological Site Atlas
THC	Texas Historical Commission
THSA	Texas Historic Site Atlas
TPWD	Texas Parks and Wildlife Department
TxDOT	Texas Department of Transportation
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WSC	Water Supply Corporation
WL	Waterline

1 PURPOSE AND NEED

1.1 PROJECT DESCRIPTION

RGV Solar is proposing RGV Solar, LLC - Magic Valley Electric Cooperative - Brownsville, Donna, Raymondville, Harlingen, a solar arrays project located in the Magic Valley Service Area. The proposed project is seeking funding from the RUS rural electric program that would support the construction of four new solar farm locations located in Cameron, Hidalgo, and Willacy Counties. Sites would be constructed on existing plots of agricultural land at 4337 North Goolie Road in Donna, 23625 Hand Road in Harlingen, Valdez Road in Raymondville, and JCS Industrial Drive in Brownsville, Texas.

Integrated Environmental Solutions, LLC. (IES) performed a site survey to identify the existing environmental and cultural resources within the four sites in Cameron, Hidalgo, and Willacy Counties (**Attachment A, Figures 1A, 1B, 1C, and 1D**).

This Environmental Assessment is in support of a U.S. Department of Agriculture (USDA) Rural Development (RD) loan guarantee for the proposed improvements following RD Instruction 1970-C, *NEPA Environmental Assessments*. This Environmental Assessment (EA) will provide the USDA RD the necessary information to make a determination of environmental clearance necessary for the proposed project based on (1) the size of the proposed project, (2) whether the proposed project is part of an existing system, (3) the environmental characteristics associated with the project sites, (4) the level of public concern with the project, and (5) the level of potential environmental effects associated with the construction and long-term operation and maintenance activities associated with the proposed project.

1.2 PURPOSE AND NEED

USDA, Rural Development is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service, and Rural Utilities Service. The agencies have in excess of 50 programs that provide financial assistance and a variety of technical and educational assistance to eligible rural and tribal populations, eligible communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants in order to accomplish program objectives.

RGV Solar will be seeking financial assistance under the RUS funding agency. The purpose of the project is to provide renewable solar energy to the existing electrical grid, as well as provide potential for the study of agrivoltaics. An additional source of renewable energy within communities in the Rio Grande Valley would be beneficial towards residents as communal energy may cut down electricity utility costs. Solar farms also provide local energy with no carbon emissions. The relationship between solar energy farms and agriculture is within the early stages of exploration and the proposed project would aim to demonstrate the potential for solar farms to double land output of electricity and farmland. The co-location of solar arrays and agriculture within the same site location would provide valuable insight towards funding similar programs in the future that aim to support dual-use production of energy and agriculture.

2 ALTERNATIVES EVALUATED INCLUDING THE PROPOSED ACTION

2.1 PROPOSED ACTION

Under the proposed action alternative, RGV Solar would construct and operate four separate utility scale solar power-generating facilities on private land at 4337 North Goolie Road, Donna; 23625 Hand Road, Harlingen; Valdez Road, Raymondville; and JCS Industrial Drive, Brownsville (**Figures 1A, 1B, 1C, and 1D**). The agricultural lands of rural cities in the Rio Grande Valley area provide an optimal and economical location solar facilities due to the large expanses of flat ground devoid of trees. None of the sites associated with this project contain waterways, which makes project activities less likely to impact local watersheds.

2.2 OTHER ALTERNATIVES EVALUATED

Other alternatives to the project included the attempted leasing and/or purchase of land parcels closer to the substations for which each solar site would be providing power. A lot in Raymondville had closer proximity to the local substation and was a more suitable option for development, however the landowner was not interested in leasing or selling. Another lot adjacent to the Donna site was considered due to its proximity to the local substation but had already been bought for the purpose of constructing a housing development.

2.3 NO ACTION

Under the No Action Alternative, RGV Solar would not construct the facilities on the four sites and no additional power would be provided to the transmission areas. This alternative would not meet the purpose and need that was previously identified. It is being carried forward in this EA to provide a baseline comparison for the effects of the Proposed Action on the natural and man-made resources within the project areas.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 LAND USE

3.1.1 General Land Use

There are four properties associated with this project: Donna, Harlingen, Raymondville, and Brownsville. RGV Solar LLC currently owns the property at 23625 Hand Road in Harlingen and would acquire the property at JCS Industrial Drive in Brownsville upon closing a deal under contract. Other properties at 4337 North Goolie Road in Donna and Valdez Road in Raymondville are being leased from private landowners.

3.1.1.1 Affected Environment

Donna Site

This site is 34 acres (ac) located southwest off Goolie Road in Donna, Texas. Aerial photography dating back to 1939 indicates the site has historically occupied agricultural land use, including tree farming prior to 1950. Currently, the site is agriculturally inactive; an in-person site evaluation revealed overgrown, unplowed fields present throughout. Surrounding land consists of agricultural and residential land uses.

Harlingen Site

This site is 22 ac located southeast of the intersection of Hand Road and Roosevelt Road in Harlingen, TX. Aerial photography dating back to 1950 demonstrate the site exhibited row-crop agriculture until about 1977, when the land appeared to be fallow agricultural land, aside from a small zone in the southwestern corner which underwent tree farming between 1995 to 2010. Currently, the site remains fallow agricultural land throughout. A Union Pacific Railroad is just outside of the southern boundary. Surrounding land consists of commercial, residential, agricultural land uses, or vacant.

Raymondville Site

This site is 20 ac located east of Valdez Road in Raymondville, TX. Aerial photography dating back to 1953 reveals the site has historically held an agricultural land use. Currently, the site remains of an agricultural land use comprised of row-crop agriculture. The surrounding land is largely dominated by agricultural land, oil and gas pads, and vacant land. The site is distinctly remote, situated about 2.8 linear miles (mi) from the outer extent of the city's dense residential zone.

Brownsville Site

This site is 34 ac located 0.35 mi southeast of the Morrison Road and Robindale Road intersection. Aerial photography dating back to 1950 indicates row-crop agricultural land use until around 2012, when the land transitions into fallow agricultural land. Currently, the site remains fallow agricultural land. The site is immediately bordered by ditches outside of the northern, eastern, and western boundaries, and a short distance from the south. Resaca Del Rancho Viejo is located 0.78 mi northeast of the project site. The site is contextualized within a variety of land uses. Notably, a learning academy is located to the north and a park and wastewater treatment facility to the west, in addition to a mix of residential, commercial, agricultural, and vacant land.

3.1.1.2 Environmental Consequences

Project sites Brownsville, Harlingen, and Donna are currently unmaintained, fallow agricultural properties. The Raymond site is currently an active agricultural property with row-crop vegetation. Upon construction, there would be land use changes for all four properties. with a plan to implement grazing sheep on the Raymondville site.

3.1.1.3 Mitigation

A proposed plan involving the use of a Department of Energy (DOE) grant would incorporate the use of undeveloped land on site to grow shaded plants under the solar arrays. Land use would transition to agrivoltaics, a process that doubles land output of electricity and farmland. The application for a DOE grant would be tentative and likely put in motion after the construction and successful operation of each solar arrays site.

3.1.2 Important Farmland

As depicted by the USDA Natural Resources Conservation Service (NRCS) Digital Soils Database and the *Soil Survey of Willacy County*, there were two soil maps units within the Raymondville survey area that occur in Willacy County (**Attachment A, Figure 3D**). In the *Soil Survey of Cameron County*, there were three soil map units identified between two survey areas in Brownsville and Harlingen that occur in Cameron County (**Attachment A, Figures 3A and 3B**). In the *Soil Survey of Hidalgo County, Texas* there were two soil maps units within the Donna survey area that occur in Hidalgo County (**Attachment A, Figure 3C**).

3.1.2.1 Affected Environment

Donna Site

This site contains Hidalgo sandy clay loam, 0 to 1 percent slopes, which was listed as “all areas are prime farmland.” Raymondville clay loam, 0 to 1 percent slopes, was listed as “prime farmland if irrigated” (**Attachment E**).

Harlingen Site

This site contains Raymondville clay loam, 0 to 1 percent slopes, which was listed as “prime farmland if irrigated”.

Raymondville Site

This site contains, Hidalgo sandy clay loam, 0 to 1 percent slopes which was listed as “prime farmland if irrigated” on the USDA Web Soil Survey. Rio sandy clay loam, 0 to 1 percent slopes, ponded was listed as “prime farmland if drained”.

Brownsville Site

This site contains, Benito clay, 0 to 1 percent slopes, ponded and Chargo silty clay, 0 to 1 percent slopes, which were listed as “not prime farmland.”

3.1.2.2 Environmental Consequences

Based on a review of the county soil surveys, there are some soils that would be considered prime farmland soils under certain conditions within the project sites. Currently, Brownsville, Harlingen, and Donna are fallow agricultural properties. While agricultural activities are still present within the Raymondville site, proposed benefits of the solar farm construction would include land use for the purpose of agrivoltaics, a beneficial process that doubles land output of electricity and farmland. As such, the effects to farmland would likely be positively affected.

3.1.2.3 Mitigation

Additional coordination with the NRCS branch of the UDSA has revealed that the project is exempt from important farmland protection, therefore no mitigation measures are needed.

3.1.3 Formally Classified Lands

There are no formally classified lands on or adjacent to the project sites. Adjacent property ownership is primarily private. As such, this resource area is dismissed for further review.

3.2 FLOODPLAINS

3.2.1 Affected Environment

Donna Site

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Hidalgo County; Map Panel 4803340425C; effective 16 November 1991) illustrated the entire site to be within Zone X (Areas determined to be outside the 0.2 percent annual chance floodplain) (**Attachment A, Figure 4B**).

Harlingen Site

The FEMA FIRM (Cameron County; Map Panel 48061C0255F; effective 16 February 2018) illustrated most of the site to be within shaded Zone X (Areas of 0.2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mi; and areas protected by levees from 1 percent annual chance flood). The southern portion was illustrated to be to be within Zone X

(Attachment A, Figure 4C). Shaded Zone X incorporates areas between the limits of the 100-year and 500-year floods and is considered to be a moderate to low-risk area.

Raymondville Site

The FEMA FIRM (Willacy County; Map Panel 48489C0205E; effective 05 April 2017) illustrated the survey area to be within Zone X (**Attachment A, Figure 4D**).

Brownsville Site

The FEMA FIRM (Cameron County; Map Panel 48061C0590F; effective 16 February 2018) illustrated the entire site to be within Zone AH (Areas with a 1 percent annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet). (**Attachment A, Figure 4A**). Zone AH is categorized as a Special Flood Hazard Area (SFHA). These are areas that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. Areas to the north of the site are illustrated to be within shaded Zone X and Zone X, areas not categorized as SFHAs.

3.2.2 Environmental Consequences

The Donna, Harlingen, and Raymondville project sites are not within Zone A (Special Flood Hazard Areas subject to inundation by the 1 percent annual chance flood; No base flood elevations determined) or Zone AE (Special Flood Hazard Areas subject to inundation by the 1 percent annual chance flood; Base flood elevations determined). The Brownsville site is within Zone AH, a SFHA. After evaluation, the project activities are largely surface level and would not affect floodplains or downstream flood zones.

3.2.3 Mitigation

Per City of Brownsville Flood Damage and Prevention Standards, Chapter 308 Section 145 – Standards for areas of shallow flooding (AO/AH Zones), a registered professional engineer or architect will provide the necessary certification to the City showing that the standards of this section have been met. These measures would include (1) having all attendant utilities designed so that below the base specified flood depth in an AO Zone, or below the base flood elevation in an AH Zone, level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy and (2) require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures. Other sites not under the SFHA definition are considered to be reasonably safe from flooding, but caution should be observed.

3.3 WETLANDS

Mr. Rafael Gomez of IES conducted the delineation in the field in accordance with the U.S. Army Corps of Engineers (USACE) procedures on 24 March 2023. This survey was designed to ultimately assess and delineate potentially jurisdictional aquatic resources to ensure compliance with Sections 401 and 404 of the Clean Water Act. No aquatic features, including wetlands, were identified during the field investigation. Routine wetland determination data forms performed during the delineation are provided in **Attachment E**. Information collected on these forms included plant species lists, soils, and general remarks about the site. Upon completion of the field investigation, these forms were evaluated to determine if any hydric soils or hydrophytic vegetation was present on site. The NRCS (National Resources Conservation Service) hydric soils list verified that no hydric soils were identified on any of the sites. Hydrophytic vegetation was not present, with no evidence of wetland hydrology on any of the sites. An in-house review of aerial photography illustrated no inundated or saturated areas.

Under the **2023 U.S. Supreme Court (SCOTUS) decision definitions**, no aquatic features were identified during the delineation.

3.4 WATER RESOURCES

The Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), passed in 1972 and last amended in 2002 was enacted to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA established a federal permitting system to regulate discharges into waters of the United States (WOUS), certify the protection of water quality, implement and enforce the National Pollutant Discharge Elimination System (NPDES) program, and identify and characterize impaired water bodies that do not meet, or are not expected to meet, water quality standards. The TCEQ's 2020 Integrated Report for CWA Sections 303(d) and 305(b) characterizes the quality of Texas surface waters and identifies those waters that do not meet water quality standards on the Section 303(d) list, an inventory of impaired waters.

The EPA defines a sole source aquifer as an *aquifer that provides at least 50 percent of the drinking water to its service area and there are no reasonable alternative drinking water sources should the aquifer become contaminated*. The EPA maps two sole source aquifers within Texas, the Edwards Aquifer and the Chicot Aquifer. According to the EPA, neither Cameron, Hidalgo, nor Willacy County overlie a sole source aquifer. The closest sole source aquifer would be the Edwards Aquifer, which is the drinking water source for the City of San Antonio and other closely located communities (**Attachment A, Figure 8**).

The Donna and Raymondville project sites are underlain by the Gulf Coast Aquifer, one of the major aquifer systems in Texas comprised of several smaller aquifers such as the Jasper, Evangeline, and Chicot aquifers. The Harlingen and Brownsville project sites are not underlain by a major aquifer (**Attachment A, Figures 7A, 7B, 7C, and 7D**).

3.4.1 Water Quantity

3.4.1.1 Affected Environment

There are four properties associated with this project: Donna, Harlingen, Raymondville, and Brownsville. RGV Solar LLC currently owns the property at 23625 Hand Road in Harlingen and would acquire the property at JCS Industrial Drive in Brownsville upon closing a deal under contract. Other properties at 4337 North Goolie Road in Donna and Valdez Road in Raymondville are being leased from private landowners.

3.4.1.2 Environmental Consequences

As previously mentioned, the Donna and Raymondville project sites are underlain by the Gulf Coast Aquifer, and the remaining two project sites are not underlain by a major aquifer. Solar farm construction activities would cause minimal impacts to depth of soil and are not anticipated to affect underlying aquifers. Thus, no indirect nor direct impacts to water resources are expected.

3.4.1.3 Mitigation

Impact from project activities would be minimal and no indirect nor direct impacts to water resources would be expected. Any construction activity hazardous materials must be contained and properly disposed of to avoid spills or inadvertent contamination. Additional mitigation measures are not necessary given the low amount of disturbance and depth of impacts.

3.5 COASTAL RESOURCES

3.5.1 Coastal Zone Management Act

3.5.1.1 Affected Environment

The Brownsville Site is 18.71 mi from the nearest coastline (**Attachment A, Figure 7A**), as such the site is within a coastal zone. The Donna site is 54.83 mi from the nearest coastline, not within the coastal zone (**Attachment A, Figure 7B**). The Harlingen site is 34.28 mi from the nearest coastline, not within the coastal zone (**Attachment A, Figure 7C**). The Raymondville site is 36.93 mi from the nearest coastline, not within the coastal zone (**Attachment A, Figure 7D**). Additionally, all project sites are not located within or near coral reef ecosystems.

3.5.1.2 Environmental Consequences

The Brownsville site is located within a coastal zone, while the Donna, Harlingen, and Raymondville sites are not. After review, project activities would be confined to the plots of land and are unlikely to affect any coastal zone resources. Coordination with Texas GLO revealed the project is exempt from coastal zone management.

3.5.1.3 Mitigation

Additional coordination with the Texas General Land Office (GLO) has revealed that the project is exempt from coastal zone management protection, therefore no mitigation measures are needed.

3.5.2 Coastal Barrier Resources Act

Coastal barriers are inherently storm-prone and dynamic systems located at the interface of land and sea. Undeveloped coastal barriers and their associated aquatic habitat (including wetlands, marshes, estuaries, inlets, and nearshore waters) provide numerous benefits to the economy and society. However, development of these areas puts people in harm's way and disrupts the natural movement and functions of the barriers, degrading fish and wildlife habitat and increasing shoreline erosion. With the passage of the Coastal Barrier Resources Act (CBRA) in 1982, Congress recognized that certain actions and programs of the Federal

Government have historically subsidized and encouraged development on coastal barriers, and the result has been the loss of natural resources; threats to human life, health, and property; and the expenditure of millions of tax dollars each year.

3.5.2.1 Affected Environment

The Brownsville Site is 18.71 mi from the nearest coastline. The Donna site is 54.83 mi from the nearest coastline. The Harlingen site is 34.28 mi from the nearest coastline. The Raymondville site is 36.93 mi from the nearest coastline. As such, none of the sites associated with this project would have an effect on coastal barrier resources.

3.5.2.2 Environmental Consequences

No environmental consequences are anticipated for this resource area.

3.5.2.3 Mitigation

No mitigation is needed for this resource area.

3.6 BIOLOGICAL RESOURCES

IES Biologist, Mr. Rafael Gomez, evaluated the project sites on 24 March 2023. This survey was designed to provide a habitat evaluation of the overall project areas with the primary focus on the plant community, but with a description of individual habitat characteristics within each plant community. Photographs taken at each site during the field evaluation are presented in **Attachment B**.

3.6.1 General Fish, Wildlife and Vegetation

3.6.1.1 Affected Environment

Donna Site

This site was characterized as an agriculturally inactive property dominated by overgrown row crop pasture with small, scattered trees (**Attachment A, Figure 5B**). An **upland grassland** vegetation community was identified within the site and included common sunflower (*Helianthus annuus*), giant reed (*Arundo donax*), sugarberry (*Celtis laevigata*), King Ranch bluestem (*Bothriochloa ischaemum*), and silverleaf nightshade (*Solanum elaeagnifolium*).

Harlingen Site

This site was characterized as an agriculturally inactive property with a mix of overgrown and maintained pastureland (**Attachment A, Figure 5C**). The **upland grassland** vegetation community identified within the site included scattered trees, grasses, and various forbs such as, silverleaf nightshade, Chinese tallow (*Triadica sebifera*), sorrelvine (*Cissus trifoliata*), honey mesquite (*Prosopis glandulosa*), velvet ash (*Fraxinus velutina*), King Ranch bluestem, Indian valley false mallow (*Malvastrum americanum*), spiny hackberry (*Celtis ehrenbergiana*), anacua (*Ehretia anacua*), retama (*Parkinsonia aculeata*), chinaberry (*Melia azedarach*), cowpen daisy (*Verbesina encelioides*), common sunflower, and sugarberry.

Raymondville Site

This site was characterized as an active agricultural property with **row crop** vegetation consisting of planted corn (*Zea mays*) (**Attachment A, Figure 5D**).

Brownsville Site

This site was characterized as an agriculturally inactive plot of land, overgrown with various trees, grasses, and forbs (**Attachment A, Figure 5A**). The **upland grassland** vegetation community identified within the site included sorrelvine, silver bluestem (*Bothriochloa laguroides*), King Ranch bluestem, broad-winged thistle (*Carduus acanthoides*), summer cypress (*Bassia scoparia*), Texas prickly pear (*Opuntia engelmannii*), sweet Indian mallow (*Abutilon fruticosum*), Indian valley false mallow, guajillo tree (*Senegalia berlandieri*), and retama.

3.6.1.2 Environmental Consequences

Proposed construction activities would result in the disturbance of existing vegetation communities. Some of the communities may provide habitat to native species inhabiting the areas within the sites. In addition to terrestrial vegetation, a minimal number of sapling trees may be removed from the properties that may provide long-term habitat to terrestrial mammals or stopover habitat for avian species.

3.6.1.3 Mitigation

Proposed project activities may not result in the complete removal of vegetation communities. RGV Solar intends to replant vegetation around the solar array panels after the completion of construction phases. New vegetation communities will be implemented to replace previous ones impacted by construction activities. These new communities would potentially provide new habitat to native species.

3.6.2 Listed Threatened and Endangered Species

Table 1 provides a summary of the federally and state-listed species that could potentially occur within Cameron, Hidalgo, and Willacy Counties, as well as a brief description of their habitat, whether this habitat is present within the survey corridors, and whether the proposed project would potentially affect the listed species. **Attachment D** contains the protected species lists from the Texas Parks and Wildlife Department (TPWD) and the U.S. Fish and Wildlife Service (USFWS).

Table 1. Federally- and State- listed Threatened and Endangered Species, and Candidate Species Occurring or Potentially Occurring in Cameron, Hidalgo, and Willacy Counties, Texas

Species	State Status	Federal Status	Description of Suitable Habitat	Habitat Present in project site or sites ¹	Species Effect ²
Black spotted newt (<i>Notophthalmus meridionalis</i>)	T	---	Poorly drained clay soils that allow for the formation of ephemeral wetlands. A wide variety of vegetation associations are known to be used, such as thorn scrub and pasture. Aquatic habitats used for reproduction are a variety of ephemeral and permanent water bodies.	No	No
Mexican tree frog (<i>Smilisca baudinii</i>)	T	---	Forested and brush around water bodies. Aquatic habitat used can any body of water but preferred breeding sites are small, ephemeral wetlands.	No	No
Sheep frog (<i>Hypopachus variolosus</i>)	T	---	Predominantly grassland and savanna; largely fossorial in areas with moist microclimates.	No	No
South Texas siren (<i>Siren lacertina</i>)	T	---	Mainly found in bodies of quiet water, permanent or temporary, with or without submergent vegetation. Wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain.	No	No
White lipped frog (<i>Leptodactylus fragilis</i>)	T	---	Lowlands, grasslands, cultivated fields, roadside ditches, and a wide variety of other habitats; often hides under rocks or in burrows under clumps of grass.	No	No
Mexican burrowing toad (<i>Rhinophrynus dorsalis</i>)	T	---	Low, rolling hills of sand, gravel or thin soil drained by ravines and gullies. Prefers moderate to dense vegetation cover of cactus and thornscrub. Roadside ditches, temporary ponds, arroyos, or wherever loose friable soils are present in which to burrow.	No	No
Black rail (<i>Laterallus jamaicensis</i>)	T	LT	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of <i>Salicornia</i> .	No	No
Botteri's sparrow (<i>Peucaea botteri</i>)	T	---	Sacahuista habitat (or cordgrass flats) in counties that along the lower coastline like Kenedy, Willacy, and Cameron counties, but also rarely in Kleberg and Brooks counties. This migratory species does not overwinter in Texas. Breeding birds return in spring and sit fairly visibly on (low) commanding perches like fence posts or mesquite limbs where males sing vigorously throughout summer.	No	No
Common black hawk (<i>Buteo galvus anthracinus</i>)	T	---	Cottonwood-lined rivers and streams; willow tree groves on the lower Rio Grande floodplain.	No	No
Gray hawk (<i>Buteo platypterus</i>)	T	---	Mature riparian woodlands and nearby semiarid mesquite and scrub grasslands; breeding range formerly extended north to southernmost Rio Grande floodplain of Texas.	No	No
Northern aplomado falcon (<i>Falco femoralis septentrionalis</i>)	E	LE	Open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species	No	No
Northern beardless-tyrannulet (<i>Camptostoma imberbe</i>)	T	---	Mesquite woodlands; also cottonwood, willow, elm, and tepeguaje near the Rio Grande.	No	No
Piping plover (<i>Charadrius melodus</i>)	T	LT	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway	No	No
Red-crowned parrot (<i>Amazona viridigenalis</i>)	T	---	Dead palm trees, including non-native Washingtonian palms, with abandoned cavities excavated by Golden-fronted Woodpeckers.	No	No
Reddish egret (<i>Egretta rufescens</i>)	T	---	Brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear	No	No
Rose-throated becard (<i>Pachyrhamphus aqilaiae</i>)	T	---	Riparian corridors; trees, woodlands, open forest, scrub, and mangroves.	No	No
Rufa red knot (<i>Calidris canutus rufa</i>)	T	LT	Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes.	No	No
Sooty tern (<i>Onychoprion fuscatus</i>)	T	---	Primarily an offshore bird; does nest on sandy beaches and islands	No	No
Swallow-tailed kite (<i>Elanoides forficatus</i>)	T	---	Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees.	No	No
Texas Botteri's sparrow (<i>Peucaea botteri texana</i>)	T	---	Grassland and short-grass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground of low clump of grasses	No	No
Tropical parula (<i>Setophaga pitiayumi</i>)	T	---	Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas.	No	No
White-faced ibis (<i>Plegadis chihi</i>)	T	---	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	No	No

Species	State Status	Federal Status	Description of Suitable Habitat	Habitat Present in project site or sites ¹	Species Effect ²
White-tailed hawk (<i>Buteo albicaudatus</i>)	T	---	Near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral.	No	No
Wood stork (<i>Mycteria americana</i>)	T	---	Prefers to nest in large tracts of bald cypress (<i>Taxodium distichum</i>) or red mangrove (<i>Rhizophora mangle</i>); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.	No	No
Zone-tailed hawk (<i>Buteo albonotatus</i>)	T	---	Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions	No	No
Cactus ferruginous pygmy-owl (<i>Glaucidium brasilianum cactorum</i>)	T	---	Riparian trees, brush, palm, and mesquite thickets; during day also roosts in small caves and recesses on slopes of low hills	No	No
Monarch butterfly (<i>Danaus plexippus</i>)	---	C	Native prairies, pastures, open woodlands and savannas, desert scrub, roadsides and other habitats where vegetation is present.	Yes. Sites Donna, Harlingen, and Brownsville.	No
Coues' rice rat (<i>Oryzomys couesi aquaticus</i>)	T	---	Cattail-bulrush marsh with shallower zone of aquatic grasses near the shoreline; shade trees around the shoreline are important features; prefers salt and freshwater, as well as grassy areas near water.	No	No
Ocelot (<i>Leopardus pardalis</i>)	E	LE	Restricted to mesquite-thorn scrub and live-oak mottes; avoids open areas. Dense mixed brush below four feet; thorny shrublands; dense chaparral thickets.	No	No
Gulf Coast Jaguarundi (<i>Puma yagouaroundi cacomilti</i>)	E	LE	Dense and mixed thornshrub species, as well as interspersed trees and riparian habitats.	No	No
White-nosed coati (<i>Nasua narica</i>)	T	---	Woodlands, riparian corridors and canyons.	No	No
Black-striped snake (<i>Coniophanes imperialis</i>)	T	---	Occurs in native thorn scrub and woodlands as well as modified urban areas. Prefers warm, moist microhabitats, and sandy soils.	No	No
Northern cat-eyed snake (<i>Leptodeira septentrionalis septentrionalis</i>)	T	---	Thorn scrub and deciduous woodland; dense thickets bordering ponds and streams.	No	No
Speckled racer (<i>Dryobius marqurittiferus</i>)	T	---	Dense thickets near water, palm groves, riparian woodlands; often in areas with much vegetation litter on ground.	No	No
Texas horned lizard (<i>Phrynosoma cornutum</i>)	T	---	Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.	No	No
Texas tortoise (<i>Gopherus berlandieri</i>)	T	---	Open scrub woods, arid brush, lomas, grass-cactus association; often in areas with sandy well-drained soils. When inactive occupies shallow depressions dug at base of bush or cactus; sometimes in underground burrow or under object. Eggs are laid in nests dug in soil near or under bushes.	No	No
South Texas Ambrosia (<i>Ambrosia cheiranthifolia</i>)	E	LE	Grasslands and mesquite shrublands of the Texas Coastal Plain.	Yes. Sites Donna, Harlingen, and Brownsville.	No
Texas Azenia (<i>Ayenia limitaris</i>)	E	LE	Well-drained soils in subtropical thorny woodlands and tall shrublands of the Rio Grande delta.	No	No
Star cactus (<i>Astrophytum asterias</i>)	E	LE	Gravelly, somewhat salty, clay or loam soils in areas of sparse vegetation in grassy thornscrub.	No	No
Walker's Manioc (<i>Manihot walkerae</i>)	E	LE	Thorn shrublands on shallow, sandy soils often over hardened caliche.	No	No
Green Sea Turtle (<i>Chelonia Mydas</i>)	T	LT	Tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico. Adults and juveniles occupy inshore and nearshore areas, including bays and lagoons with reefs and seagrass.	No	No
Hawksbill Sea Turtle (<i>Eretmochelys imbricata</i>)	E	LE	Tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico	No	No
Kemp's Ridley Sea Turtle (<i>Lepidochelys kempi</i>)	E	LE	Tropical, subtropical, and temperate waters of the northwestern Atlantic Ocean and Gulf of Mexico. Adults are found in coastal waters with muddy or sandy bottoms.	No	No
Leatherback Sea Turtle (<i>Dermodochelys coriacea</i>)	E	LE	Tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico.	No	No
Loggerhead Sea Turtle (<i>Caretta caretta</i>)	T	LT	Tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico.	No	No
Mexican Fawnfoot (<i>Truncilla cognata</i>)	T	---	Occurs in large rivers but may also be found in medium-sized streams. Is commonly found in habitats with some flowing water, often in protected near shore areas such as banks and backwaters but also at the head of riffles. Occurs in substrates of mixed sand and gravel as well as soft unconsolidated sediments. Considered intolerant of reservoirs.	No	No
Salina Mucket (<i>Potamilus metnecktay</i>)	T	---	Occurs in medium to large rivers, where it may be found in substrates composed of various combinations of mud, sand, gravel, and cobble, as well as under rocks. It occurs in areas with slow to moderate current, most often in stable littoral habitats dominated by boulder or bedrock habitat; not known from reservoirs.	No	No

LE – Federally Listed Endangered, LT – Federally Listed Threatened, E – State Listed Endangered, T - State Listed Threatened, C – Candidate

Species	State Status	Federal Status	Description of Suitable Habitat	Habitat Present in project site or sites ¹	Species Effect ²
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¹Habitat Present? – Does the habitat located within the survey corridors match the habitat requirements for that particular protected species?

²Species Effect? – Would the proposed project potentially affect a protected species?

Data Sources: USFWS IPaC (published and accessed 08 March 2023), TPWD (published 08 March 2023, accessed 08 March 2023), and survey of survey corridors

3.6.2.1 Affected Environment

There were 10 federally listed threatened or endangered species listed for Cameron, Hidalgo, and Willacy Counties, Black Rail (*Laterallus jamaicensis*), Northern Aplomodo Falcon (*Falco femoralis septentrionalis*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), ocelot (*Leopardus pardalis*), Gulf Coast jaguarundi (*Puma yagouaroundi cacomitli*), South Texas ambrosia (*Ambrosia cheiranthifolia*), Texas ayenia (*Ayenia limitaris*), star cactus (*Astrophytum asterias*), and Walker’s manioc (*Manihot walkerae*).

As this project would not be related to wind energy, the Black Rail, Northern Aplomodo Falcon, Piping Plover and Red Knot would not be affected. The sparse vegetation communities within the project areas would not provide habitat for Gulf Coast jaguarundi, Texas ayenia, star cactus, Walker’s manioc, and ocelot.

The upland grassland vegetation community identified within the Donna, Harlingen, and Brownsville project sites may provide suitable habitat for both the South Texas ambrosia and Monarch Butterfly (*Danaus plexippus*). At the time of this document, the South Texas ambrosia is federally and state listed endangered, while the Monarch Butterfly’s federal status is a candidate species.

There were 41 total state-listed threatened and endangered species for Cameron, Hidalgo, and Willacy Counties, which includes the previously mentioned avian species. Any occurrence of avian species would be in relation to stopover during migration, as stopover trees, fence lines, and structures such as those observed within the Harlingen and Brownsville sites.

The Common Black Hawk (*Buteogallus anthracinus*), Black Rail, Rufa Red Knot, Reddish Egret (*Egretta rufescens*), Sooty Tern (*Onychoprion fuscatus*), Swallow-tailed Kite (*Elanoides forficatus*), Wood Stork (*Mycteria americana*), and White-faced Ibis (*Plegadis chihi*) utilize aquatic habitat, or aquatic adjacent habitat; neither of which were present.

The Northern Aplomado Falcon, Botteri’s Sparrow (*Peucaea botterii*), Gray Hawk (*Buteo plagiatus*), Northern Beardless-tyrannulet (*Camptostoma imberbe*), Red-crowned Parrot (*Amazona viridigenalis*), Rose-throated Becard (*Pachyrhamphus aglaiae*), Texas Botteri's Sparrow (*Peucaea botterii texana*), Tropical Parula (*Setophaga pitiayumi*), White-tailed Hawk (*Buteo albicaudatus*), Zone-tailed Hawk (*Buteo albonotatus*), and Cactus Ferruginous Pygmy-owl (*Glaucidium brasilianum cactorum*) all utilize different habitat than present in the row-crop agricultural property and upland grassland communities identified. Some stopover habitat such as trees and fence lines may be incidental, but all sites are void of woodlands, canyons, savannas, yucca thickets, palm trees, thorny shrublands, and specific trees listed species use for nesting.

The row-crop agriculture within the Raymondville site and upland grassland vegetation community within the Donna, Brownsville and Harlingen sites did not have the appropriate vegetation communities or aquatic features to provide suitable habitat the remainder of the listed species. Although the survey was designed to identify habitat of listed species and not to perform species-specific surveys, no protected species were identified within the survey corridors during the investigation.

3.6.2.2 Environmental Consequences

The four sites were evaluated for suitable habitat for federally- and state- listed species that could potentially occur within Cameron, Hidalgo, and Willacy Counties. Suitable habitat was identified for the Monarch Butterfly, a federal candidate species, and south Texas ambrosia, a both federally- and state-listed endangered species. Neither species was identified during an on-site survey. Removal of roadside vegetation or nectar producing plants may result in a loss of habitat for the Monarch Butterfly.

3.6.2.3 Mitigation

RGV Solar intends to revegetate areas around the proposed solar arrays which would provide stopover habitat for Monarch Butterflies. Soil disturbances would be kept to a minimum to minimize impacts to endangered plants.

3.6.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance with the Act's policies and regulations. According to the Migratory Bird Permit Memorandum issued 15 April 2003, the MBTA does not prohibit the destruction of a migratory bird nest (without birds or eggs), provided no possession occurs during the destruction. In general, 01 February to 31 August is the approximate nesting timing for most migrants in the state of Texas. Special attention should be placed on the areas that migratory birds could use as nesting sites during these months. Migratory birds would likely use the available woody species for breeding, nesting, and foraging activities during the breeding season.

3.6.3.1 Affected Environment

Commonly occurring birds within the three counties include the following:

- Cameron County: Great-tailed Grackle (*Quiscalus mexicanus*), Northern Mockingbird (*Mimus polyglottos*), Mourning Dove (*Zenaida macroura*), Gold-fronted Woodpecker (*Melanerpes aurifrons*), Turkey Vulture (*Cathartes aura*), Great Egret (*Ardea alba*), Great Kiskadee (*Pitangus sulphuratus*), Red-winged Blackbird (*Agelaius phoeniceus*), and Green Jay (*Cyanocorax yncas*).
- Hidalgo County: Great-tailed Grackle, Northern Mockingbird, Great Kiskadee, Mourning Dove, Gold-Fronted Woodpecker, House Sparrow (*Passer domesticus*), Northern Cardinal (*Cardinalis cardinalis*), White-Winged Dove (*Zenaida asiatica*), Snowy Egret (*Egretta thula*), and Great Egret (*Ardea alba*).
- Willacy County: Great-tailed Grackle, Mourning Dove, Turkey Vulture, Northern Mockingbird, Gold-fronted Woodpecker, Laughing Gull (*Leucophaeus atricilla*), Scissor-Tailed Flycatcher (*Tyrannus forficatus*), Great Kiskadee, and Red-winged Blackbird.

3.6.3.2 Environmental Consequences

Based on the proposed project's plans and vegetation maintenance regime, habitat, and invasive species management within the four sites may remain of similar quality with the potential to undergo a slight improvement. Thus, it is unlikely that the proposed project would have an adverse effect on state or federally listed species.

3.6.3.3 Mitigation

All avian evaluations were completed in regard to the Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA) and returned no results for suitable habitat or possible occurrence within the project areas.

3.6.4 Bald and Golden Eagle Protection Act

The Bald Eagle (*Haliaeetus leucocephalus*) and Golden Eagle (*Aquila chrysaetos*) are protected by the Bald and Golden Eagle Protection Act (BGEPA) and the MBTA. The MBTA and the BGEPA protect Bald Eagles from a variety of harmful actions and impacts. The USFWS developed these National Bald Eagle Management Guidelines to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of the BGEPA may apply to their activities. A variety of human activities can potentially interfere with Bald Eagles, affecting their ability to forage, nest, roost, breed, or raise young. The Guidelines are intended to help people minimize such impacts to Bald Eagles, particularly where they may constitute "disturbance," which is prohibited by the BGEPA. None of the sites associated with this project have suitable trees or aquatic features to qualify as Eagle habitat.

3.6.4.1 Affected Environment

None of the sites associated with this project contain suitable habitat for Bald or Golden Eagles.

3.6.4.2 Environmental Consequences

Based on the proposed project's plans and vegetation maintenance regime, habitat, and invasive species management within the four sites may remain of similar quality with the potential to undergo a slight improvement. Thus, it is unlikely that the proposed project would have an adverse effect on Bald Eagles or Golden Eagles.

3.6.4.3 Mitigation

Given that the proposed project areas do not have suitable habitat for Bald or Golden Eagles with a low probability of incidental stopover, it is unlikely that mitigation measures would need to be implemented for this project.

3.6.5 Invasive Species

3.6.5.1 Affected Environment

Many invasive species have potential to be found throughout Texas. As such, invasive species may be present within all four project sites. However, in general, project site Raymond was dominated by corn. Although the USDA classifies corn as introduced, it does not possess invasive characteristics. No known invasive species were identified within project site Raymond. Historically following the termination of row-crop agricultural activities on project sites Donna, Harlingen, and Brownsville, a mix of native and invasive regrowth arose. Several species identified on these sites were classified as introduced by USDA and additionally considered invasive or opportunistic: giant reed, King Ranch bluestem, Chinese tallow, chinaberry, silver bluestem, broad-winged thistle, and summer cypress.

3.6.5.2 Environmental Consequences

Based on the proposed project's plans and vegetation maintenance regime, habitat, and invasive species management within the four sites may remain of similar quality with the potential to undergo a slight improvement. Thus, it is unlikely that the proposed project would have an adverse effect on invasive species.

3.6.5.3 Mitigation

RGV will implement the use of grazing sheep for maintaining vegetation within the project areas. Any invasive species would be managed by grazing.

3.7 CULTURAL RESOURCES AND HISTORIC PROPERTIES

The National Historic Preservation Act (NHPA) requires federal agencies to identify significant cultural resources that may be affected by their actions and mitigate adverse effects to those resources. The NHPA (54 USC 300101), specifically Section 106 of the NHPA (54 USC 306108) requires the State Historic Preservation Office (SHPO), represented by the Texas Historical Commission (THC), to administer and coordinate historic preservation activities, and to review and comment on all actions licensed by the Federal government that will have an effect on properties listed in the National Register of Historic Places (NRHP), or eligible for such listing. Section 106 of NHPA is the principal statute concerning such resources. It requires consideration of direct and indirect impacts from federal actions on historic, architectural, archaeological, and other cultural resources. The assessment of significance of a cultural resource is based on federal guidelines and regulations.

The criteria for evaluating properties for inclusion in the NRHP are codified under the authority of the NHPA, as amended (36 CFR Part 60.4 [a-d]), and the Advisory Council on Historic Preservation has set forth guidelines to use in determining site eligibility. Federal regulations indicate that "[t]he term 'eligible for inclusion in the National Register' includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria" (36 CFR 800.2[e]). Based on Advisory Council guidelines, any cultural resource that is included in or eligible for inclusion in the NRHP is a historic property.

3.7.1 Affected Environment

An archaeological desktop review was performed on an area of potential effects (APE) comprised of the four sites, totaling 114.3 ac. A variety of literature and online sources were referenced including: USGS topographic maps; the *Soil Survey of Cameron County, Texas*; the Geologic Atlas of Texas (McAllen - Brownsville and Brownville - Harlingen Sheets); the USDA NRCS digital soil databases for Cameron, Hidalgo, and Willacy counties; the Texas Historic Overlay georeferenced map database; the Texas Department of Transportation (TxDOT) Potential Archeological Liability Map (PALM) for the Pharr District; and both past and current aerial photography of the proposed APE. Additionally, a file search of the Texas Archeological Site Atlas (TASA) and Texas Historical Sites Atlas (THSA) were performed for the proposed location and surrounding areas. This review was conducted by IES Staff Archeologist Jacob Flynn on 13 April 2023.

3.7.2 Mitigation

If cultural materials are encountered during construction, work shall immediately cease in the area of discovery. Work may continue in the project area where no cultural materials are present. The contractor shall immediately notify the consultant architect/engineer, the THC (512) 463-6100, and the RUS Federal Preservation Officer.

3.7.3 Tribal Coordination

Under NHPA Section 106 and as part of the environmental review process, the following tribes were provided the opportunity to comment. For Cameron, Hidalgo, and Willacy counties, the Apache Tribe of Oklahoma, Comanche Nation of Oklahoma, Tonkawa Tribe of Indians of Oklahoma, and Wichita and Affiliated Tribes

(Wichita, Keechi, Waco & Tawakonie) of Oklahoma were contacted. None of the listed tribes responded to the opportunity to comment.

3.8 AESTHETICS

This section describes a brief overview of the existing visual resources at the proposed project locations and potential impacts to those resources associated with the project. Visual resources are the visual character of a place, both manmade and natural, that give a particular landscape its character and aesthetic quality.

The proposed project sites are not located within a visually sensitive area such as a wilderness area, park, scenic area, etc. Properties are active or fallow agricultural fields that do not contain any defining man-made or natural aesthetic features. Moreover, the proposed solar panels would be placed away from the roadway in a low-lying position, thereby reducing or eliminating visibility for motorists and local residents.

3.8.1 Affected Environment

The project sites are not located within a visually sensitive area such as a wilderness area, park, scenic area, etc. The project sites are active or fallow agricultural fields that do not contain any defining man-made or natural aesthetic features. Moreover, the proposed solar panels would be placed away from the roadway in a low-lying position, thereby reducing or eliminating visibility from public through-traffic. As such, project activities would not have an effect on aesthetics.

3.8.2 Environmental Consequences

Given the location of the project sites with no adjacent visually sensitive areas, there are no anticipated impacts for this resource area.

3.8.3 Mitigation

No mitigation measures are necessary for this resource area.

3.9 AIR QUALITY

The Clean Air Act (CAA) requires that states adopt Ambient Air Quality Standards. The standards have been established to protect the public from potentially harmful amounts of pollutants. Under the CAA, the United States Environmental Protection Agency (USEPA) established the National Ambient Air Quality Standards (NAAQS), which include standards for several criteria pollutants. NAAQS have been set for the following six pollutants, carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂) (**Table 3**). Based on air monitoring data and in accordance with the CAA, areas within the United States are designated with respect to their attainment status with the NAAQS. Areas that meet the NAAQS are designated as attainment, those that do not meet the standards are designated as nonattainment, and those that are in transition from nonattainment to attainment are designated as maintenance. Ozone nonattainment areas are further classified as extreme, severe, serious, moderate, and marginal by the degree of non-compliance with the NAAQS.

3.9.1 Affected Environment

As of August 15, 2023, the EPA Green Book designates Hidalgo, Willacy, and Cameron Counties as in attainment for all criteria pollutants, meaning that the air in these counties meets the NAAQs.

3.9.2 Environmental Consequences

The nearest off-site sensitive receptors (residents) are on adjacent properties of Donna, Harlingen, and Brownsville project sites, and more than 3 mi from the Raymondville project site.

3.9.3 Mitigation

Any air pollution from this project would be inadvertent and minimal, most likely generated from construction equipment and vehicles in the area. No emissions are anticipated to be generated from the solar arrays once constructed.

Table 2. National Ambient Air Quality Standards

Pollutant	Averaging Time	Standard	Type of Standard	Form
CO	1-hour	35 ppm	Primary	Not to be exceeded more than once annually
	8-hour	9 ppm	Primary	

Pb	Rolling quarter	0.15 µg/m ³	Primary Secondary	Not to be exceeded
NO ₂	1-hour	100 ppb	Primary	98 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	1 year	53 ppb	Primary Secondary	Annual Mean
O ₃	8-hour	0.070 ppm	Primary Secondary	Annual 4 th highest daily maximum 8-hour concentration, averaged over 3 years
PM ₁₀	24-hour	150 µg/m ³	Primary Secondary	Not to be exceeded more than once annually on average over 3 years
PM _{2.5}	1 year	12.0 µg/m ³	Primary	Annual mean, averaged over 3 years
	1 year	15.0 µg/m ³	Secondary	Annual mean, averaged over 3 years
	24-hour	35 µg/m ³	Primary Secondary	98 th percentile, averaged over 3 years
SO ₂	1-hour	75 ppb	Primary	99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	3-hour	0.5 ppm	Secondary	Not to be exceeded more than once annually

Notes:

ppm= parts per million; ppb= parts per billion; µg/m³= micrograms per cubic meter; PM_{2.5}= particulate matter with a diameter less than 2.5 micrometers (µm); PM₁₀= particulate matter with a diameter less than 10 micrometers (µm)

Primary standards provide public health and safety protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly.

Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Source: USEPA, 2021c

3.10 SOCIAL IMPACT ASSESSMENT AND ENVIRONMENTAL JUSTICE

Socioeconomic analyses generally include detailed investigations of the prevailing population, income, employment, and housing conditions of a community or area of interest. The socioeconomic conditions of a region of interest (ROI) could be affected by changes in the rate of population growth, changes in the demographic characteristics of a ROI, or changes in employment within the ROI caused by the implementation of the proposed action. In addition to these characteristics, populations of special concern, as addressed by Executive Order (EO) 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 1994), are identified and analyzed for environmental justice impacts.

EO 12898 requires a federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” A message from the President concerning EO 12898 stated that federal agencies should collect and analyze information concerning a project’s effects on minorities or low-income groups, when required by National Environmental Policy Act (NEPA). If such investigations find that minority or low-income groups experience a disproportionate adverse effect, then avoidance or mitigation measures are to be taken.

EO 14096 (Revitalizing Our Nation’s Commitment to Environmental Justice for All, April 2023) requires that the federal government “advance environmental justice for all by implementing and enforcing the Nation’s environmental and civil rights laws, preventing pollution, addressing climate change and its effects, and working to clean up legacy pollution that is harming human health and the environment.”

According to the CEQ (1997), a minority population can be described as being composed of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic, and exceeding 50 percent of the population in an area or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population. Race and ethnicity are two separate categories of minority populations. A minority population can be defined by race, by ethnicity, or by a combination of the two distinct classifications.

Race as defined by the U.S. Census Bureau (2001) includes:

- White – A person having origins in any of the original peoples of Europe, the Middle East, or North Africa;
- Black or African American – A person having origins in any of the Black racial groups of Africa;

- American Indian or Alaska Native – A person having origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment;
- Asian – A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, or the Philippine Islands; and
- Native Hawaiian and Other Pacific Islanders – A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

The U.S. Census Bureau (USCB) defines ethnicity as either being of Hispanic origin or not being of Hispanic origin. Hispanic origin is defined as “a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin regardless of race” (USCB 2001).

A minority population can be defined in multiple ways; for example, a population under consideration may be demographically composed of 45 percent Black, 6 percent Asian, 40 percent White, and 9 percent all other races or combination of races. Additionally, a minority population can also be defined through ethnicity, where the population under consideration is demographically composed of 80 percent White, 10 percent Black, and 10 percent all other races or combination of races, but has an ethnic composition of 98 percent Hispanic origin and 2 percent of the population not of Hispanic origin. Race and ethnicity each individually total a population of 100 percent.

Each year the USCB defines the national poverty thresholds, which are measured in terms of household income dependent upon the number of persons within the household. Individuals falling below the poverty threshold (\$30,186 for a household of four in 2022) are considered low-income individuals. USCB census tracts where at least 20 percent of the residents are considered poor are known as *poverty areas* (USCB 1995). When the percentage of residents considered poor is greater than 40 percent, the census tract becomes an *extreme poverty area*.

3.10.1 Affected Environment

Areas surrounding all four sites contain a minority population greater than 50 percent, therefore all the geographic areas associated with this project would be considered minority majority areas. The project area locations are approximately similar to the respective counties and higher than the state averages.

3.10.2 Environmental Consequences

While the areas surrounding the proposed site locations are considered minority majority areas, there would not be a disproportionate effect to minority populations, as the benefits of the proposed project would provide renewable energy to all local counties interconnected to the power grid. High peak loads were noted for the substations within these communities and the arrays providing power would lower costs for residents. Additionally, based on the small size and rural location of the project sites, it is believed that no new jobs would be created, and unemployment rates for the area would not be impacted.

3.10.3 Locally Important Industries, Income, and Employment

To assess industry, income, and employment metrics for populations near the proposed project corridors, an assessment based on the U.S. Census Bureau (USCB) 2021 – 5-year average data set from the American Community Survey (ACS) at the county level was performed (USCB 2021).

Hildago County’s civilian labor force consists of approximately 327,622 people. The mean household income for the county is \$61,113 and the per capita income is \$19,123. The 2021 unemployment rate for the State of Texas was 6.2 percent; while in Hildago County, the unemployment rate was 9.0 percent. The industry that made up the largest portion (28.3 percent) of employment in Hildago County in 2021 was educational services, and health care and social assistance followed by retail trade (14.0 percent).

Willacy County’s civilian labor force consists of approximately 8,086 people. The mean household income for the county is \$54,886 and the per capita income is \$19,122. The unemployment rate for the county was 7.9 percent. The industry that made up the largest portion (25.3 percent) of employment in Willacy County in 2021 was educational services, and health care and social assistance followed by agriculture, forestry, fishing and hunting, and mining (15.1 percent).

Cameron County’s civilian labor force consists of approximately 167,715 people. The mean household income for the county is \$64,736 and the per capita income is \$20,943. The unemployment rate in Cameron County was 8.1 percent. The industry that made up the largest portion (30.9 percent) of employment in Cameron County

in 2021 was educational services, and health care and social assistance followed by retail trade (10.4 percent). **Table 4** illustrates employment across industry for the three counties.

Table 3. 2021 Employment by Industry Estimates

Industry	Hidalgo County		Willacy County		Cameron County	
	Count Estimate	Percentage	Count Estimate	Percentage	Count Estimate	Percentage
Agriculture, forestry, fishing and hunting, and mining	8,658	2.6	1,218	15.1	2,259	1.3
Construction	26,246	8.0	546	6.8	10,284	6.1
Manufacturing	16,379	5.0	617	7.6	11,047	6.6
Wholesale trade	9,217	2.8	11	0.1	6,108	3.6
Retail trade	45,787	14.0	720	8.9	17,386	10.4
Transportation and warehousing, and utilities	19,762	6.0	509	6.3	12,601	7.5
Information	2,016	0.6	143	1.8	567	0.3
Finance and insurance, and real estate and rental and leasing	12,659	3.9	213	2.6	7,515	4.5
Professional, scientific, and management, and administrative and waste management services	29,473	9.0	612	7.6	15,182	9.1
Educational services, and health care and social assistance	92,588	28.3	2,048	25.3	51,845	30.9
Arts, entertainment, and recreation, and accommodation and food services	27,447	8.4	764	9.4	14,419	8.6
Other services, except public administration	19,480	5.9	158	2.0	8,692	5.2
Public administration	17,910	5.5	527	6.5	9,810	5.8

3.10.4 Environmental Justice Populations

An EPA EJSscreen was performed for each of the four sites (**Attachment F**). The screen indicates that the Brownsville site area is 91 percent people of color, contains 45 percent low-income households, 8 percent limited English-speaking households, and has a 5 percent unemployment rate. The Donna site screen indicates the area is 99 percent people of color, contains 59 percent low-income households, 13 percent limited English-speaking households, and has a 6 percent unemployment rate. The Harlingen site indicates the area is 93 percent people of color, contains 47 percent low-income households, 10 percent limited-English speaking households, and a 4 percent unemployment rate. The Raymondville site screen indicates the area is 92 percent people of color, contains 53 percent low-income households, 16 percent limited-English speaking households, and a 7 percent unemployment rate.

To assess the minority and low-income populations near the proposed project corridors an assessment based on the USCB 2021 - 5-year average data set from the ACS at the state, county, and Census Tract geographic levels was performed (USCB 2021). Texas is a minority majority state with the most recent data indicating 59 percent of the state population was a racial or ethnic minority. Texas was 39.8 percent Hispanic or Latino and 19.5 percent all other races or combination of races. The U.S. minority percentage during the same period was 43.1 percent. Moving into the county-level, Cameron County was 91.5 percent minority, Hidalgo County was 94.3 percent minority, and Willacy County was 89.7 percent minority. At the Census Tract level, one of the sites is located within Cameron County Census Tract 104.01 and contains a minority percentage of 90.3 percent. A second site is located within Cameron County Census Tract 126.08 and contains a minority percentage of 82.5 percent. A third site is located within Hidalgo County Census Tract 221.04 and contains a minority percentage of 97.2 percent. The fourth site is located within Willacy County and contains a minority percentage of 91.5 percent. All four sites contain minority populations greater than 50 percent, therefore all of the geographic areas associated with this project would be considered minority majority areas. Given the nature of project activities within the limits of owned or leased properties, short term effects would be minor and temporary. None of the geographic areas are considered concentrated minority areas, as such, there would not be a disproportionate affect to minority populations as the benefits associated with the proposed project as project activities would provide renewable energy to all local counties interconnected to the power grid. Short-term effects associated

with construction activities would be confined to plots of farmland and would be minor and temporary. **Table 5** illustrates the racial and ethnic distributions across the state and county levels. **Table 6** illustrates the racial and ethnic distributions across the census tract levels.

Table 4. 2021 Total Population Estimates and Racial/Ethnic Populations, 5-Year Average American Community Survey

	Texas		Cameron County		Hidalgo County		Willacy County	
	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent
Total Population	28,862,581		420,554		865,677		20,423	
Hispanic or Latino and Race								
Hispanic or Latino (of any race)	11,479,932	39.8%	378,443	90.0%	800,715	92.5%	18,022	88.2%
Not Hispanic or Latino	17,382,649	60.2%	42,111	10.0%	64,962	7.5%	2,401	11.8%
White alone	11,745,032	40.7%	35,794	8.5%	49,469	5.7%	2,099	10.3%
Black or African American alone	3,401,742	11.8%	1,646	0.4%	3,849	0.4%	129	0.6%
American Indian and Alaska Native alone	55,658	0.2%	395	0.1%	653	0.1%	0	0.0%
Asian alone	1,433,683	5.0%	2,820	0.7%	8,049	0.9%	0	0.0%
Native Hawaiian and Other Pacific Islander alone	21,282	0.1%	126	0.0%	150	0.0%	0	0.0%
Some other race alone	72,621	0.3%	262	0.1%	1,439	0.2%	0	0.0%
Two or more races	652,631	2.3%	1,068	0.3%	1,353	0.2%	173	0.8%
Total Minority Population	17,117,549	59.3%	384,760	91.5%	816,208	94.3%	18,324	89.7%

Table 5 2021 Total Population Estimates and Racial/Ethnic Populations, 5-Year Average American Community Survey

	Census Tract 104.01 Cameron County		Census Tract 126.08 Cameron County		Census Tract 221.04 Hidalgo County		Census Tract 9503 Willacy County	
	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent
Total Population	5,286		3,662		9,739		5,320	
Hispanic or Latino and Race								
Hispanic or Latino (of any race)	4,718	89.3%	2,984	81.5%	9,445	97.0%	4807	90.4%
Not Hispanic or Latino	568	10.7%	678	18.5%	294	3.0%	513	9.6%
White alone	514	9.7%	642	17.5%	271	2.8%	453	8.5%
Black or African American alone	22	0.4%	6	0.2%	3	0.0%	24	0.5%
American Indian and Alaska Native alone	1	0.0%	6	0.2%	9	0.1%	5	0.1%
Asian alone	6	0.1%	13	0.4%	1	0.0%	9	0.2%
Native Hawaiian and Other Pacific Islander alone	3	0.1%	1	0.0%	0	0.0%	0	0.0%
Some other race alone	16	0.3%	0	0.0%	5	0.1%	4	0.1%
Two or more races	6	0.1%	10	0.3%	5	0.1%	18	0.3%
Total Minority Population	4,772	90.3%	3,020	82.5%	9,468	97.2%	4,867	91.5%

Data from the USCB 2021 5-year average ACS, indicates that Texas’s population that falls below the USCB poverty threshold was 14.2 percent, which was 1.4 percent higher than the U.S. current poverty level. Texas’s minority population falls disproportionately more below the poverty threshold than the White, alone, not Hispanic or Latino population. Based on the 2021 ACS data set, 18.5 percent of the total minority population fall below the poverty threshold compared to the 8.4 percent of the White, alone, not Hispanic or Latino population. A similar pattern is clearly evident across all geographic locations. None of the geographic areas are considered concentrated poverty areas, as such, there would not be a disproportionate effect to low-income populations as the benefits associated with the proposed project activities would provide renewable energy to all local counties interconnected to the power grid. Short-term effects associated with construction activities would be confined to plots of farmland and would be minor and temporary. **Table 7** illustrates the racial and ethnic distributions across the state and county levels. **Table 8** illustrates the census tract levels.

Table 6. 2021 Poverty Estimates, 5-Year Average American Community Survey

	State of Texas			Cameron County			Hidalgo County			Willacy County		
	Total	Below Poverty	Percent Below Poverty	Total	Below Poverty	Percent Below Poverty	Total	Below Poverty	Percent Below Poverty	Total	Below Poverty	Percent Below Poverty
Population for Whom Poverty Status is determined	28,933,638	4,122,538	14.25%	419,512	103,540	24.68%	871,538	255,428	29.31%	19,135	4,970	25.97%
Race and Hispanic Origin												
White alone	13,840,143	1,447,169	10.46%	142,264	38,202	26.85%	225,247	54,469	24.18%	15,485	3,924	25.34%
Black or African American alone	3,388,243	660,174	19.48%	NA	NA	NA	NA	NA	NA	2	2	100.00%
American Indian and Alaska Native alone	223,393	33,632	15.06%	NA	NA	NA	NA	NA	NA	105	0	0.00%
Asian alone	1,536,442	126,838	8.26%	NA	NA	NA	7,469	263	3.52%	0	0	0.00%
Native Hawaiian and Other Pacific Islander alone	22,120	3,224	14.58%	NA	NA	NA	NA	NA	NA	0	0	0.00%
Some other races alone	2,980,625	602,726	20.22%	45,565	11,271	24.74%	95,089	27,995	29.44%	533	62	11.63%
Two or more races	6,942,701	1,248,775	17.99%	225,666	53,380	23.65%	533,044	171,129	32.10%	3,010	982	32.62%
Hispanic or Latino origin (of any race)	11,682,948	2,265,796	19.39%	378,064	98,837	26.14%	808,096	247,771	30.66%	17,081	4,695	27.49%
White alone, not Hispanic or Latino	11,382,270	954,881	8.39%	33,349	4,390	13.16%	47,248	6,101	12.91%	1,964	273	13.90%
Employment Status												
Civilian Labor Force 16 years and over	14,658,174	174,916	1.19%	182,507	27,496	15.07%	360,062	64,864	18.01%	8,783	1,501	17.09%
Employed	13,753,512	920,493	6.69%	167,658	21,820	13.01%	327,467	50,105	15.30%	8,086	1,173	14.51%
Unemployed	904,662	254,423	28.12%	14,849	5,676	38.22%	32,595	14,759	45.28%	697	328	47.06%

Table 7. 2021 Poverty Estimates, 5-Year Average American Community Survey

	Census Tract 104.01			Census Tract 126.08			Census Tract 221.04			Census Tract 9503		
	Total	Below Poverty	Percent Below Poverty	Total	Below Poverty	Percent Below Poverty	Total	Below Poverty	Percent Below Poverty	Total	Below Poverty	Percent Below Poverty
Population for Whom Poverty Status is determined	6,500	1,421	21.86%	5,196	712	13.70%	13,840	6,318	45.65%	6,211	2,298	37.00%
Race and Hispanic Origin												
White alone	5,839	1,373	23.51%	3,833	0	0.00%	10,403	4,621	44.42%	4,806	1,661	34.56%
Black or African American alone	153	0	0.00%	42	0	0.00%	0	0	0.00%	2	2	100.00%
American Indian and Alaska Native alone	45	0	0.00%	72	0	0.00%	0	0	0.00%	0	0	0.00%
Asian alone	48	0	0.00%	112	0	0.00%	0	0	0.00%	0	0	0.00%
Native Hawaiian and Other Pacific Islander alone	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%
Some other races alone	334	27	8.08%	66	24	36.36%	2,181	1,037	47.55%	362	20	5.52%
Two or more races	81	21	25.93%	1,071	227	21.20%	1,256	660	52.55%	1,041	615	59.08%
Hispanic or Latino origin (of any race)	5,854	1,220	20.84%	4,649	925	19.90%	13,744	6,318	45.97%	5,919	2,247	37.96%
White alone, not Hispanic or Latino	461	201	43.60%	393	38	9.67%	96	0	0.00%	290	49	16.90%
Employment Status												
Civilian Labor Force 16 years and over	3,030	356	11.75%	2,519	288	11.43%	4,628	1,333	28.80%	2,958	834	28.19%
Employed	2,925	301	10.29%	2,405	236	9.81%	4,247	1,268	29.86%	2,729	667	24.44%
Unemployed	105	55	52.38%	114	52	45.61%	381	65	17.06%	229	167	72.93%

3.10.5 Mitigation

Given the small size and rural location of all four sites, it is unlikely that project activities will cause any significant change to racial or socioeconomic trends for each respective county. Therefore, mitigation for this category is not needed.

3.11 MISCELLANEOUS ISSUES

3.11.1 Noise

The Noise Control Act of 1972 (Public Law [PL] 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. In 1974, the USEPA provided information on negative effects of noise and identified indoor and outdoor noise limits that protect public health and welfare. In addition, sound quality criteria promulgated by the USEPA and the U.S. Department of Housing and Urban Development have identified noise levels to protect public health and welfare with an adequate margin of safety. These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting. Average acceptable day-night sound pressure levels fall in a range between 50 dBA in quiet suburban areas and

70 dBA in very noisy urban areas (USEPA 1974). **Table 9** lists some common sound levels associated with everyday activities and devices.

Table 8. Common Sound Levels

Outdoor	dBA	Indoor
Snowmobile	100	Subway Train
Tractor	90	Garbage Disposal
Noisy Restaurant		Blender
Downtown (Large City)	80	Ringling Telephone
Freeway Traffic	70	TV Audio
Power Lawn Mower		
Normal Conversation	60	Sewing Machine
Rainfall	50	Refrigerator
Quiet Residential Area	40	Library

Source: League for the Hard of Hearing 2002

3.11.1.1 Affected Environment

An EPA EJScreen was performed for each of the four sites to determine traffic noise effects to each area. For Brownsville, the screen shows an intermediate traffic proximity index of 270, roughly within the 55th percentile in the state. Traffic around this area is considered to be intermediate, indicating average noise levels. For Donna, the screen shows an intermediate traffic proximity index of 250, roughly within the 53rd percentile in the state. Traffic around this area is considered to be intermediate, indicating average noise levels. For Harlingen, the screen shows a lower traffic proximity index of 130, roughly within the 37th percentile in the state. Low to infrequent traffic flow around this area indicates noise levels are below average in this area. For Raymondville, the screen shows a significantly low traffic proximity index of 14, roughly within the 7th percentile in the state. The infrequent number of motorists around the project site indicates that traffic noise from surrounding streets is below average.

3.11.1.2 Environmental Consequences

Construction vehicles and equipment operating in these sites may temporarily raise noise above average levels but should subside during early morning and nightly hours. Additional noise levels are possible at the Raymondville site, as farming activities require using larger machinery to cultivate crops. Noise levels are not expected to permanently change due to the construction and operation activities on these sites as the solar farm locations would not bring frequent traffic or equipment that generates noise disturbances.

3.11.1.3 Mitigation

As noise levels are not expected to permanently change and any disturbances are likely associated with construction, no abatement measures are needed. Therefore, this resource area is being dismissed from review.

3.11.2 Transportation

Cameron, Hidalgo, and Willacy counties fall under the jurisdiction of The Rio Grande Valley Metropolitan Planning Organization (MPO). The MPO works in conjunction with the TxDOT Pharr District to build, operate, and maintain transportation systems in the area. The 2021-2024 Transportation Improvement Plan (TIP) was reviewed to determine if any of the proposed project activities would impede or adversely affect transportation patterns in areas adjacent to the proposed project sites. No proposed transportation projects for Cameron, Hidalgo, and Willacy counties listed in the TIP are adjacent to any of the four sites associated with this solar project. No effects to transportation are anticipated as a result of this project.

3.11.2.1 Affected Environment

Goolie Road, a two-laned paved road, provides access to the northern and eastern sides of the Donna project site. Other nearby roads are described similarly— generally relatively small two-laned paved, dirt, or gravel roads. The closest major road is Interstate Highway (IH) 2, located approximately one mi to the south, which had a TxDOT Average Annual Daily (AADT) traffic of 92,497 (Location ID 67,553) in 2021.

Hand Road, a two-laned paved road, provides access to the western side and Roosevelt Road, a two-laned paved road, to the northern side of the Harlingen project site. Two main roads are nearby, Primera Road, a four-laned road with a persistent central turn-lane located approximately 0.5 mi north, and Wilson Road, a paved four-laned road approximately 0.26 mi south. Prima Road had an AADT traffic of 6,726 (Location ID 75,305) in 2021. Wilson Road had an AADT traffic of 8,254 (Location ID 69,185) in 2021. Nearby highways include Texas State Highway (SH) 77 0.65 mi east and IH 2 1.94 mi south.

Valdez Road, a dirt road, provides access to the western side of the Raymondville project site. Willacy County Road (CR) 2900 west is 0.12 mi to the south, and CR Sugar 0.76 mi to the east are both unpaved, dirt roads. Surrounding roads are largely unpaved, dirt roads. SH 186 W, a paved, 4-laned, main road 0.64 mi north, ultimately provides access to IH 69 E. SH 186 W had an AADT traffic of 3,199 (Location ID 75,153) in 2021.

An unpaved portion of JCS Industrial Drive, 0.05 mi south, allows access to an unnamed, unpaved dirt road along the western side of the Brownsville project site. Although roads directly leading to the site are limited, several paved, two-laned roads are in proximity. One of which is Robindale Road, which had an AADT traffic of 4,462 (Location ID 77,449) in 2021. Highways surrounding the site include S Padre Island Highway to the southeast, FM 511 to the northeast, and IH 69 E to the southwest.

The Valley International Airport is located 4.29 mi east of the Harlingen project site, separated by residential and agricultural land. The Brownsville South Padre Island International Airport is located 3.53 mi southeast of the Brownsville project site, separated by residential, commercial, and vacant land. County judges have been notified about the project. Neither the county nor any representatives from the airport have voiced concerns regarding glint and glare.

3.11.2.2 Environmental Consequences

The construction of the proposed project may generate low levels of additional traffic in the short term as construction workers access the sites. Project site Brownsville is only accessible through dirt roads; thus, the shuttling of construction vehicles may degrade roads. However, no long-term effects on traffic patterns are anticipated.

3.11.2.3 Mitigation

Any excessive wear or damage to public roads as the result of construction vehicle and equipment traffic should be repaired to avoid any significant impact on local transportation.

3.12 HUMAN HEALTH AND SAFETY

3.12.1 Electromagnetic Fields and Interference

Electromagnetic fields (EMFs) are invisible areas of energy associated with the use of electrical power and various forms of natural and man-made lighting (referred to as radiation). EMFs are typically grouped into one of two categories by their frequency:

- Non-ionizing: low-energy radiation that is generally perceived as harmless to humans. Sources of non-ionizing radiation include microwave ovens, computers, cell phones, and power lines (CDC 2023).
- Ionizing: high-energy radiation that has the potential to cause cellular and DNA damage. Sources of ionizing radiation include sunlight, x-rays, and some gamma rays (CDC 2023).

3.12.1.1 Affected Environment

A field investigation of each site indicated multiple sources of non-ionizing radiation either within or adjacent to the project areas. For the Brownsville site, powerlines were identified to the east across the canal outside the project area. For the Donna site, powerlines were identified on the survey area boundary to the north and east, with the nearest substation 0.35 mi to the north on Goolie Rd. For the Harlingen site, powerlines were identified on the survey area boundary to the north and west. An additional power line extends approximately 100 feet from the west boundary power line into the southwest corner of the survey area. An interlinked substation is located to the northwest, east of Hand Road outside the survey area. For the Raymondville site, powerlines were identified on the survey area boundary to the west.

3.12.1.2 Environmental Consequences

Since all electromagnetic fields within or adjacent to project areas are non-ionizing, there is no expected radiation risk associated with project activities.

3.12.1.3 Mitigation

All overhead transmission lines allow for all necessary equipment tracking without removal. All substations in proximity are located outside the survey area and should not impede construction or operational activity.

3.12.2 Risk Management

3.12.2.1 Regulatory Background

The handling and disposal of hazardous materials, chemicals, and wastes are governed by four primary laws, which include the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (more commonly known as “Superfund”), Pollution Prevention Act (PPA), Toxic Substances Control Act (TSCA), and Resource Conservation and Recovery Act (RCRA), as amended. RCRA governs the generation, treatment, storage, and disposal of solid and hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment. In addition to these laws, three EO have been designated to ensure federal compliance with pollution control standards, federal right-to-know laws, and Superfund implementation. FAA Orders 1050.1F and 5050.4B do not provide a specific threshold of significance for hazardous material and solid waste impacts. However, the FAA Orders suggest factors to be considered such as identifying if the action involves property listed (or potentially listed) on the National Priorities List (NPL).

Solid waste is generally defined in RCRA as any discarded material that is abandoned, recycled, considered inherently waste-like, or a military munition (refer to 40 CFR 261.2 for further details). The definition of a hazardous material, hazardous substance, and a hazardous waste follow:

- *Hazardous Material* – any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce (49 CFR §172, Table 172.101). This includes hazardous substances and hazardous wastes.
- *Hazardous Substance* – any element, compound mixture, solution, or substance defined as a hazardous substance under the CERCLA and listed in 40 CFR §302. If released into the environment, hazardous substances may pose substantial harm to human health or the environment.
- *Hazardous Waste* – a waste is considered hazardous if it is listed in RCRA regulations, or meets the characteristics described in 40 CFR §261, including ignitability, corrosivity, reactivity, or toxicity.

3.12.2.2 Existing Conditions

Limited Environmental Due Diligence Transaction Screen following ASTM International Standard E 1528-22 was performed for the sites located in Brownsville, Donna, Harlingen, and Raymondville. The Transaction Screen did not locate any environmental risks associated with the existing infrastructure at either site. There was no indication of hazardous materials or hazardous wastes located on the project sites.

The Brownsville, Donna, Harlingen, and Raymondville site reconnaissance indicated there was no presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing significant release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the properties or into the ground, groundwater, or surface water. All questions were completed as “No” within the Observed questionnaires.

Information from Environmental Data Resources, Inc. (EDR) was obtained and reviewed for the Site. The compiled records databases are included as **Attachment F** and discussed below.

- Reasonably ascertainable and practically reviewable information from standard federal and state environmental databases revealed no records on the sites or within 1 mi.
- Review of property deed records for addresses associated with each site did not identify any current or previously recorded environmental liens.
- The City Directory Report indicates all addresses associated with each site were searched through the EDR Digital Archive for the years 1962 through 2020 for Brownsville, 1964 through 2020 for Donna, 1972 through 2020 for Harlingen, and 2005 through 2020 for Raymondville.
- Records review indicated no coverage on any of the sites for the Property Tax Map Report.
- The Sanborn Library collection was searched for Fire Insurance Maps (FIM), real estate atlases, and similar maps for the site and adjoining properties. There were no FIMs, or similar maps identified for the sites.
- Building Permit data was not available for the target properties.

- No record or information in these databases indicates a presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing significant release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water.

The Brownsville, Donna, Harlingen, and Raymondville reconnaissance indicated there was no presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing significant release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water. A search of reasonably ascertainable and practically reviewable information revealed no records on the site or within 1 mi. The completed Owner questionnaire indicated that there were no records regarding environmental concerns with the site.

The proposed activities at the project site would not generate any recordable amounts of hazardous materials or hazardous wastes. Short-term exposure associated with construction equipment could be possible, but the selected contractors would be required to follow all local, state, and federal regulations associated with hazardous materials, hazardous wastes, and petroleum products. Construction contractors would not be allowed to maintain equipment on the project site during construction and any vehicle maintenance activities would need to occur at a location that contained appropriate contaminant facilities. As such, hazardous materials and hazardous wastes would not result in adverse environmental effects to these project locations or adjoining properties.

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4 CUMULATIVE EFFECTS

4.1 LAND USE

The current land use categories associated with these project sites are agricultural and undeveloped. The proposed project would change the land use type for each of these properties to predominantly industrial use, specifically for the purpose of solar energy collection. RGV solar is exploring the possibility of utilizing undeveloped land not occupied by equipment for crop growth. This would maintain agricultural land use on some sites and introduce new land use to currently undeveloped sites. Remaining land use would otherwise be maintained vegetated communities via the use of grazing sheep. If agrivoltaics are studied on-site the land use type may shift to a dual use of energy output and agriculture. Additionally, the proposed project would allow surrounding lands to transition to residential land use more readily as energy capacity is increased. A current vacant lot to the north of the Donna project site has been purchased by a land development company for the construction of an affordable housing complex. Other adjacent lots to the project sites are agricultural use and have not been purchased by development companies or the city. The 2021-2024 Transportation Improvement Plan (TIP) was reviewed to determine if any of the proposed project activities would impede or adversely affect transportation patterns in areas adjacent to the proposed project sites. No proposed transportation projects for Cameron, Hidalgo, and Willacy counties listed in the TIP are adjacent to any of the four sites associated with this solar project.

4.2 FLOODPLAINS

The Donna and Raymondville sites were illustrated to be within Zone X, as areas outside the 0.2 percent annual chance floodplain. Therefore, no cumulative effects are expected with project activities on these sites. The Harlingen site was illustrated to be within shaded Zone X, areas of 0.2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mi; and areas protected by levees from 1 percent annual chance flood. The Brownsville Site was illustrated to be within Zone AH, areas with a 1 percent annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. The project activities for these two sites are largely surface level and would not affect floodplains or downstream flood zones.

4.3 WETLANDS

There are no wetlands within the limits of any of the four sites associated with this project. Therefore, there are no expected cumulative effects on wetlands associated with this project.

4.4 WATER RESOURCES

There are no water resources within the limits of any of the four sites associated with this project. Depth of impacts for construction are anticipated to be minimal, minimizing the risk of affecting groundwater or underlying aquifers. There is a risk of spills and leaks associated with construction activities and vehicles, however these events would be entirely incidental. A water treatment plant is adjacent west of the Brownsville site with sewer and water treatment operations serving the city of Brownsville. According to the Brownsville Public Utilities Board, the plant completed an upgrade in 2015 to increase the treatment capacity. Given that the facility was recently upgraded, it is unlikely that the treatment facility will acquire more parcels adjacent to the proposed project area in the immediate future. Therefore, there are no expected cumulative effects on water resources.

4.5 COASTAL RESOURCES

Using the Texas coastal zone map, the Brownsville site location was determined to be within a coastal zone. After conferring with the Texas General Land Office, it was decided that this project would not be an eligible applicant for federal consistency review. Because the project does not qualify for a review and given the total mileage from the coastline with no water features within project limits, this area is being dismissed from review.

4.6 BIOLOGICAL RESOURCES

Habitat was identified within the sites for the south Texas ambrosia, a federally and state endangered species. Primary concerns for this species revolve around the site plans to remove vegetation in order to construct the solar arrays. However, based on the proposed project's plans and vegetation maintenance regime, habitat, and invasive species management within the four sites, the habitat may remain of similar quality with the potential to undergo a slight improvement. Therefore, any negative cumulative effects are anticipated to be minimal.

4.7 CULTURAL RESOURCES AND HISTORIC PROPERTIES

One historic-age archeological resource, recommended as not eligible for inclusion in the NRHP, was identified within the Harlingen site. No other cultural resource deposits were identified within the Raymondville, Donna, or Brownsville project sites. There are no sites recommended to be eligible, or potentially eligible, for listing on the NRHP or have been listed on the NRHP within the project sites. Additionally, the solar arrays development would not disrupt the viewshed of historic properties. Thus, there are no expected cumulative effects on cultural resources and historic properties.

4.8 AESTHETICS

The project sites are not located within a visually sensitive area such as a wilderness area, park, scenic area, etc. The project sites are active or fallow agricultural fields that do not contain any defining man-made or natural aesthetic features. Moreover, the proposed solar panels would be placed away from the roadway in a low-lying position, thereby reducing or eliminating visibility from public through-traffic. Reflections off the solar panels upon completion of the project may be undesirable to neighboring residences or drivers. Any cumulative effects to aesthetics are anticipated to be minimal.

4.9 AIR QUALITY

As of August 15, 2023, the EPA Green Book designates Hildago, Willacy, and Cameron Counties as in attainment for all criteria pollutants, meaning that the air in these counties meets the NAAQs. The nearest off-site sensitive receptors (residents) are on adjacent properties of Donna, Harlingen, and Brownsville project sites, and more than 3 mi from the Raymondville project site. Therefore, there are no expected cumulative effects on air quality for these sites.

4.10 SOCIAL IMPACT ASSESSMENT AND ENVIRONMENTAL JUSTICE

All four sites contain a minority population greater than 50 percent; therefore, all the geographic areas associated with this project would be considered minority majority areas. The project area locations are approximately similar to the respective counties and higher than the state averages. None of the projected areas are considered concentrated minority areas, as such, there would not be a disproportionate effect to minority populations, as the benefits of the proposed project would provide renewable energy to all local counties interconnected to the power grid. Additionally, based on the small size and rural location of the project sites, it is believed that no new jobs would be created, and unemployment rates for the area would not be impacted. Thus, social impacts and cumulative effects on environmental justice are expected to be minimal.

Implementing any alternatives could affect the local demographics, employment, and income potential, as well as localized minority and/or low-income populations. Significant impacts would occur to income and employment if an unacceptable change (i.e., significant loss or decrease) in these components occurs. Additionally, significant impacts could be attributed to budgetary and spending conditions that change significantly from current conditions or planned guidelines. There would be significant environmental justice impacts if a disproportionate amount of the adverse effects of the action is felt by minority and/or low-income populations.

4.11 HUMAN HEALTH AND SAFETY

Since all electromagnetic fields within or adjacent to project areas are non-ionizing, there is no expected radiation risk associated with project activities. All overhead transmission lines allow for all necessary equipment tracking without removal. All substations in proximity are located outside the survey area and should not impede construction or operational activities. Thus, cumulative effects to human health and safety are expected to be minimal. Any additional installation of electronic devices and utilities associated with this project may alter the risk associated with human health and safety.

5 SUMMARY OF MITIGATION

5.1 LAND USE

Changes to land use would occur as the unmaintained, fallow land within the Brownsville, Harlingen, and Donna sites are transitioned into agrivolatics. The active agricultural land within the Raymond site would continue to hold an agricultural use through grazing and cropland, in addition to solar energy. BMPs would be employed to control and minimize erosion. After construction is complete, disturbed areas would be stabilized through revegetation including crops and grasses. These land use changes are positive, and, thus, no mitigation is necessary.

5.2 FLOODPLAINS

Per City of Brownsville Flood Damage and Prevention Standards, Chapter 308 Section 145 – Standards for areas of shallow flooding (AO/AH Zones), a registered professional engineer or architect will provide the necessary certification to the City showing that the standards of this section have been met. These measures would include (1) having all attendant utilities designed so that below the base specified flood depth in an AO Zone, or below the base flood elevation in an AH Zone, level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy and (2) require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures. Other sites not under the SFHA definition are considered to be reasonably safe from flooding, but caution should be observed.

5.3 WETLANDS

No wetlands were identified within any of the four project sites. As such, no mitigation is necessary.

5.4 WATER RESOURCES

Effects to water resources were determined to be neutral, as solar farm construction activities would cause minimal impacts to depth of soil and are not anticipated to affect underlying aquifers. Additionally, during construction, appropriate BMPs would be employed including silt fencing, manual soil and sediment removal, vegetative cover after removal of structural BMPs, and others to prevent soil erosion and stormwater runoff from impacting nearby streams and rivers. Thus, no mitigation is necessary.

5.5 COASTAL RESOURCES

Although the Brownsville site is located within a coastal zone, project activities would be confined to the plots of land and are unlikely to affect any coastal zone resources. Coordination with Texas GLO revealed the project is exempt from coastal zone management. Thus, no mitigation is necessary.

5.6 BIOLOGICAL RESOURCES

Habitat was identified within the sites for the South Texas ambrosia. However, based on the proposed project's plans and vegetation maintenance regime, habitat, and invasive species management within the four sites, the habitat may remain of similar quality with the potential to undergo a slight improvement. As such, no mitigation is necessary.

5.7 CULTURAL RESOURCES AND HISTORIC PROPERTIES

No historic sites or site locals within the project boundaries were identified that are eligible, or potentially eligible, for listing on the NRHP or have been listed on the NRHP. Additionally, viewsheds of historic properties would not be disrupted by the proposed project's plans. As such, no mitigation is necessary.

Under NHPA Section 106 and as part of the environmental review process, the following tribes were provided the opportunity to comment. For Cameron, Hidalgo, and Willacy counties, the Apache Tribe of Oklahoma, Comanche Nation of Oklahoma, Tonkawa Tribe of Indians of Oklahoma, and Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie) of Oklahoma were contacted. None of the listed tribes responded to the opportunity to comment.

5.8 AESTHETICS

While there would be a visual contrast following the installation of the solar facilities, the nature of the project will remain consistent with the views in the area. Additionally, the project sites are not located within a visually

sensitive area such as a wilderness area, park, scenic area, etc. The project sites are active or fallow agricultural fields that do not contain any defining man-made or natural aesthetic features. To minimize any aesthetic impediment, solar panels would be placed away from the roadway in a low-lying position, thereby reducing or eliminating visibility from public through-traffic or future development in the vicinity. As such, no mitigation is necessary.

5.9 AIR QUALITY

Air emissions from construction are low and temporary in nature. Additionally, the nearest off-site sensitive receptors (residents) are on adjacent properties of Donna, Harlingen, and Brownsville project sites, and more than 3 mi from the Raymondville project site. As such, no mitigation is necessary.

5.10 SOCIAL IMPACT ASSESSMENT AND ENVIRONMENTAL JUSTICE

The project is not anticipated to negatively impact the livelihood of minority populations or unemployment rates. As such, no mitigation is necessary.

5.11 HUMAN HEALTH AND SAFETY

The proposed activities at the project site would not generate any recordable amounts of hazardous materials or hazardous wastes. Short-term exposure associated with construction equipment could be possible but would be mitigated as the selected contractors would be required to follow all local, state, and federal regulations associated with hazardous materials, hazardous wastes, and petroleum products. Additionally, construction contractors would not be allowed to maintain equipment on the project site during construction and any vehicle maintenance activities would need to occur at a location that contained appropriate contaminant facilities. Otherwise, no additional mitigation is necessary.

6 COORDINATION, CONSULTATION, AND CORRESPONDENCE

During the preparation of this EA, RGV Solar consulted with the following agencies or agency websites:

- Texas General Land Office: Coastal Zone Management Review
- Tribal Coordination: Apache Tribe of Oklahoma
- Tribal Coordination: Commanche Nation, Oklahoma
- Tribal Coordination: Tonkawa Tribe of Indians
- Tribal Coordination: Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma
- U.S. Census Bureau: ACS 5-Year Estimates
- U.S. Census Bureau: ACS 1-Year Estimates Subject Tables
- U.S. Department of Agriculture: NRCS Web Soil Survey
- U.S. Department of Agriculture: NRCS Important Farmland Review
- U.S. Department of Agriculture: NRCS Plants Database
- U.S. Department of Housing and Urban Development: Tribal Directory Assessment Tool (TDAT)
- U.S. Environmental Protection Agency: Environmental Justice Screening
- U.S. Environmental Protection Agency: Green Book – Nonattainment Areas for Criteria Pollutant
- U.S. Federal Emergency Management Agency: National Flood Hazard Layer (NFHL) Viewer
- U.S. Fish and Wildlife Service: National Wetlands Inventory
- U.S. Fish and Wildlife Service: Threatened and Endangered Species

As part of the Environmental Assessment process, a Notice of Availability was provided to the general public within the vicinity of the proposed project areas. The Notice was run in three separate publications on Saturday, December 30th 2023, and on Wednesday, January 3rd 2024. Publications included the McAllen Monitor, Brownsville Herald, and Valley Morning Star newspapers. No comments were received after the publication dates. The Notice included the following website link for members of the public to access a copy of the assessment and corresponding attachments: <https://www.rd.usda.gov/resources/environmental-studies/assessment/magic-valley-solar-arrays-project>.

7 REFERENCES

Centers for Disease Control and Prevention (CDC)

2023

National Center for Environmental Health (NCEH) http://cdc.gov/nceh/radiation/ionizing_radiation (accessed May 2023).

National Center for Environmental Health (NCEH) http://cdc.gov/nceh/radiation/nonionizing_radiation (accessed May 2023).

Texas Department of Transportation (TxDOT)

2023

ArcGIS Viewer Website. <http://txdot.opendata.arcgis.com/datasets> (accessed May 2023)

Transportation Improvement Program Document Viewer <http://apps3.txdot.gov/apps/estip> (accessed August 2023).

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2023

Office Coastal Management Program Website. <http://glo.texas.gov.html> (accessed April 2023).

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2023

Rare, Threatened, and Endangered Species of Texas Website. <http://tpwd.texas.gov/gis/rtest/> (accessed August 2023).

U.S. Census Bureau (USCB)

2021

American Community Survey 5-Year Data <http://data.census.gov/table> (accessed March 2023).

U.S. Department of Agriculture (USDA)

2023

National Resources Conservation Service (NRCS) <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> (accessed March 2023).

National Resources Conservation Service (NRCS) <http://plants.usda.gov/home/plantProfile> (accessed May 2023).

U.S. Environmental Protection Agency (EPA)

2023

Nonattainment Areas for Criteria Pollutants <http://www.epa.gov/green-book> (accessed March 2023).

U.S. Geological Survey (USGS)

2023

U.S. Department of the Interior Mineral Resources On-Line Spatial Data Website. <http://mrdata.usgs.gov/sgmc/tx.html> (accessed April 2023).

U.S. Fish and Wildlife Service (USFW)

2023

Information for Planning and Consultation (IPAC) Website. <https://ipac.ecosphere.fws.gov/location/index> (accessed August 2023).

8 LIST OF PREPARERS

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- Richard Estrada, Founder

USDA RURAL DEVELOPMENT

- Environmental and Historic Preservation Division, USDA Rural Utilities Service

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ATTACHMENT A
Figures

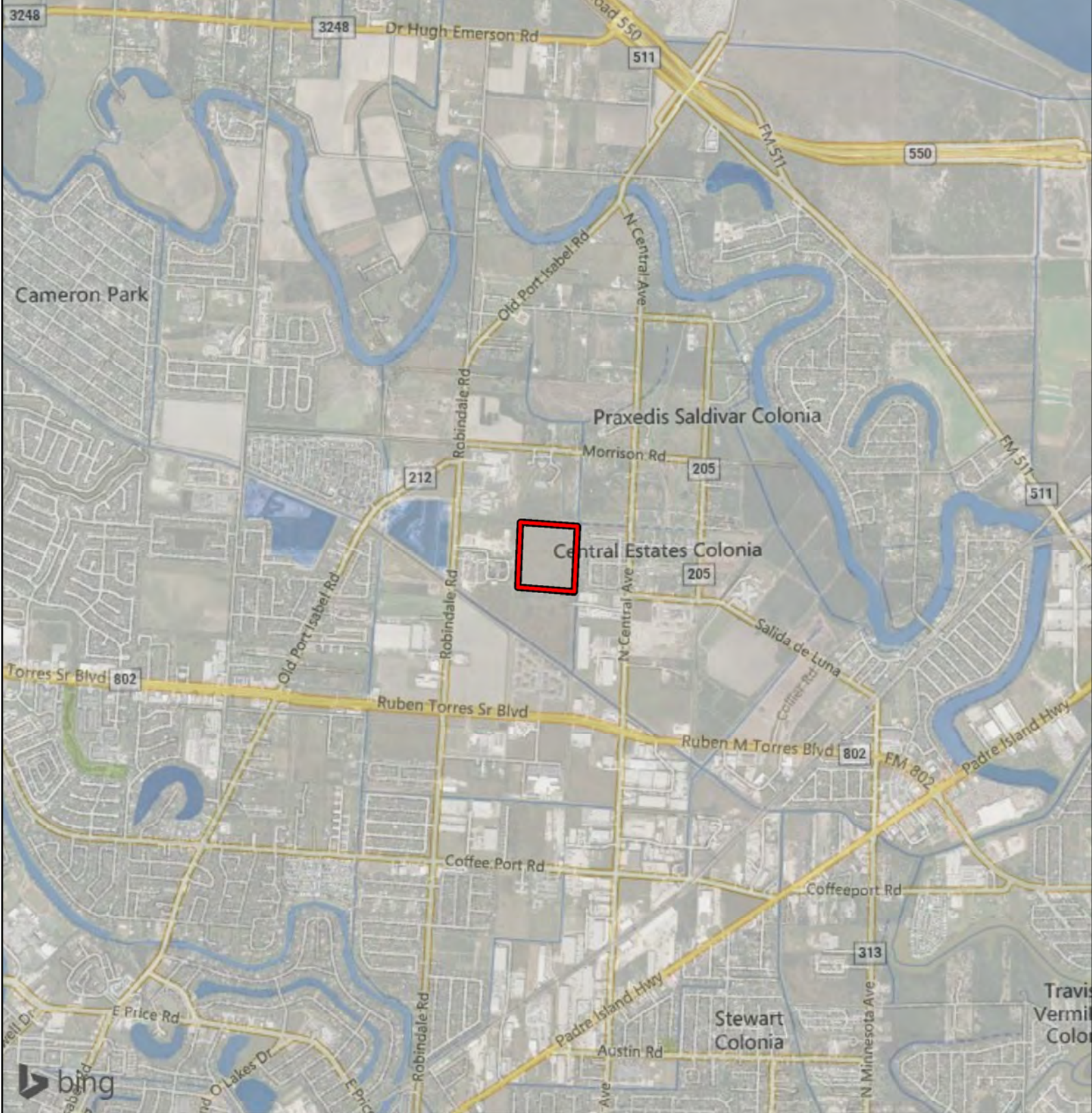



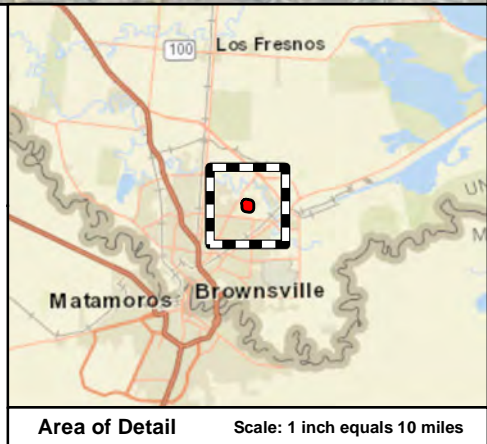
Figure 1A.
General Location Map

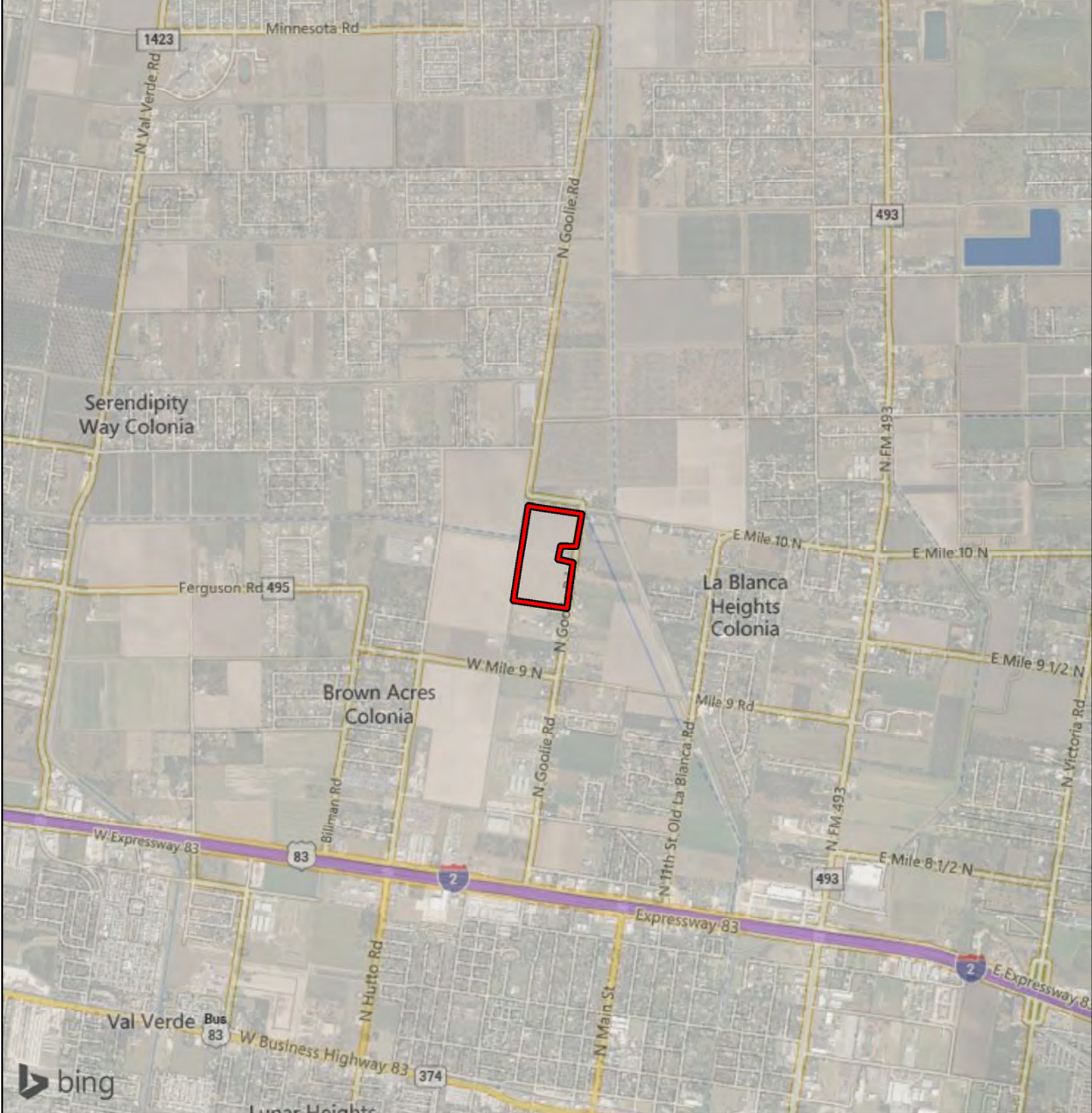
Magic Valley Solar Arrays
 City of Brownsville
 Cameron County, Texas

1 in = 2,500 feet

File Ref. 04.407.001
 Date: 3/14/2023

 Survey Area

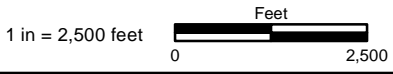
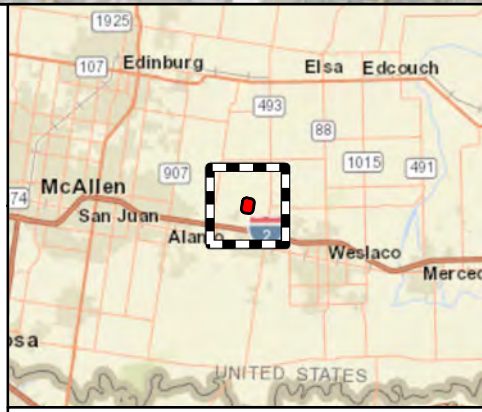




**Figure 1B.
General Location Map**

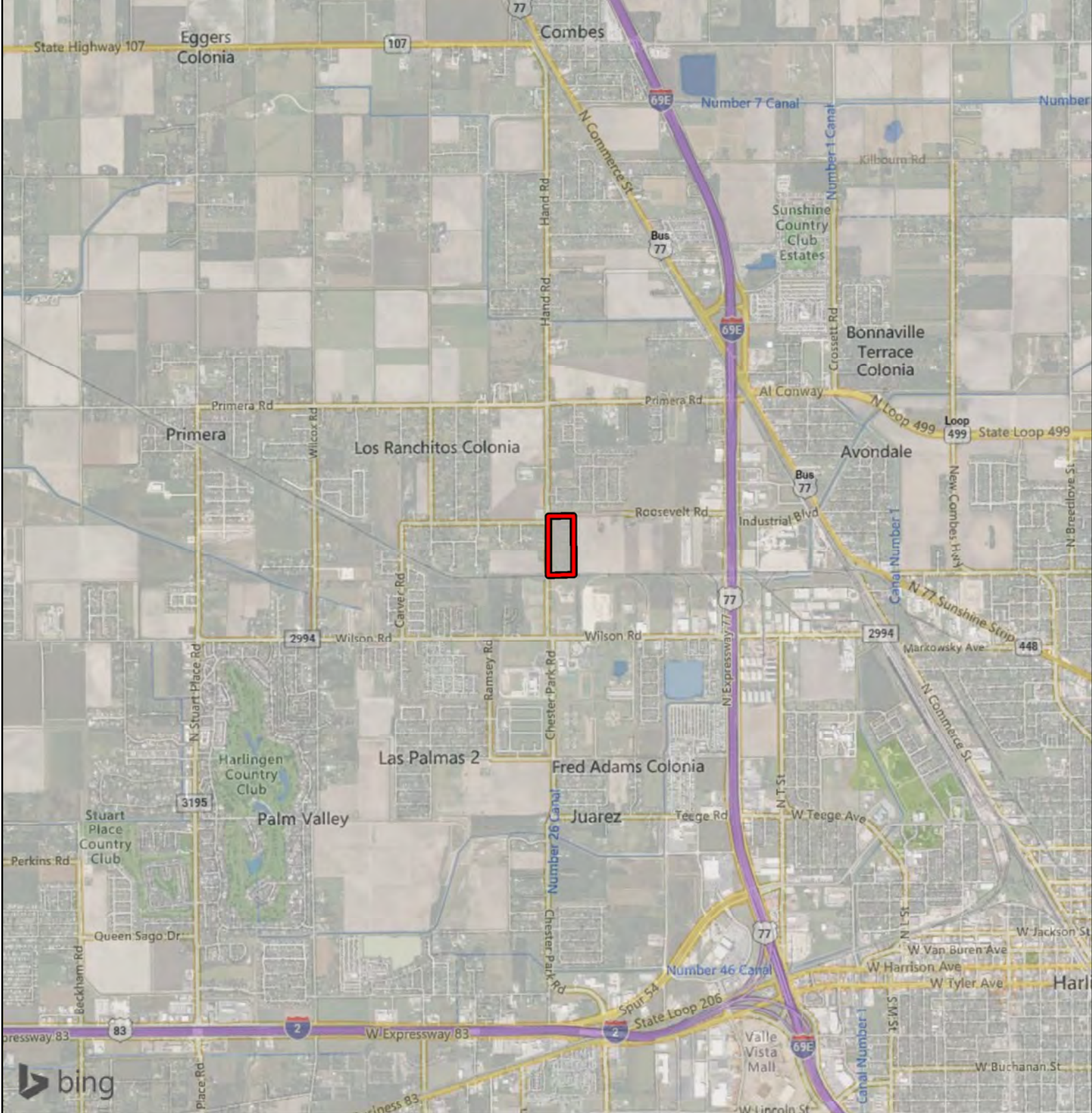
Magic Valley Solar Arrays
City of Donna
Hidalgo County, Texas

 Survey Area



File Ref. 04.407.001
Date: 3/14/2023

Area of Detail Scale: 1 inch equals 10 miles



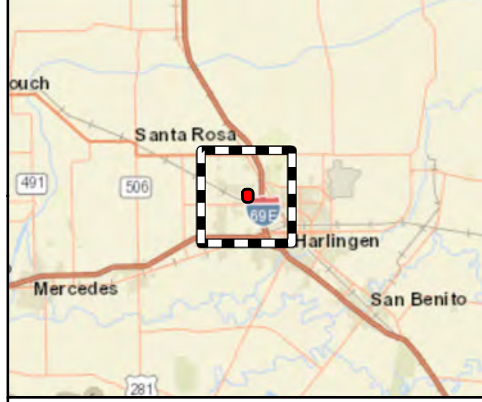
**Figure 1C.
General Location Map**

 Survey Area

Magic Valley Solar Arrays
City of Harlingen
Cameron County, Texas



File Ref. 04.407.001
Date: 3/14/2023



Area of Detail Scale: 1 inch equals 10 miles

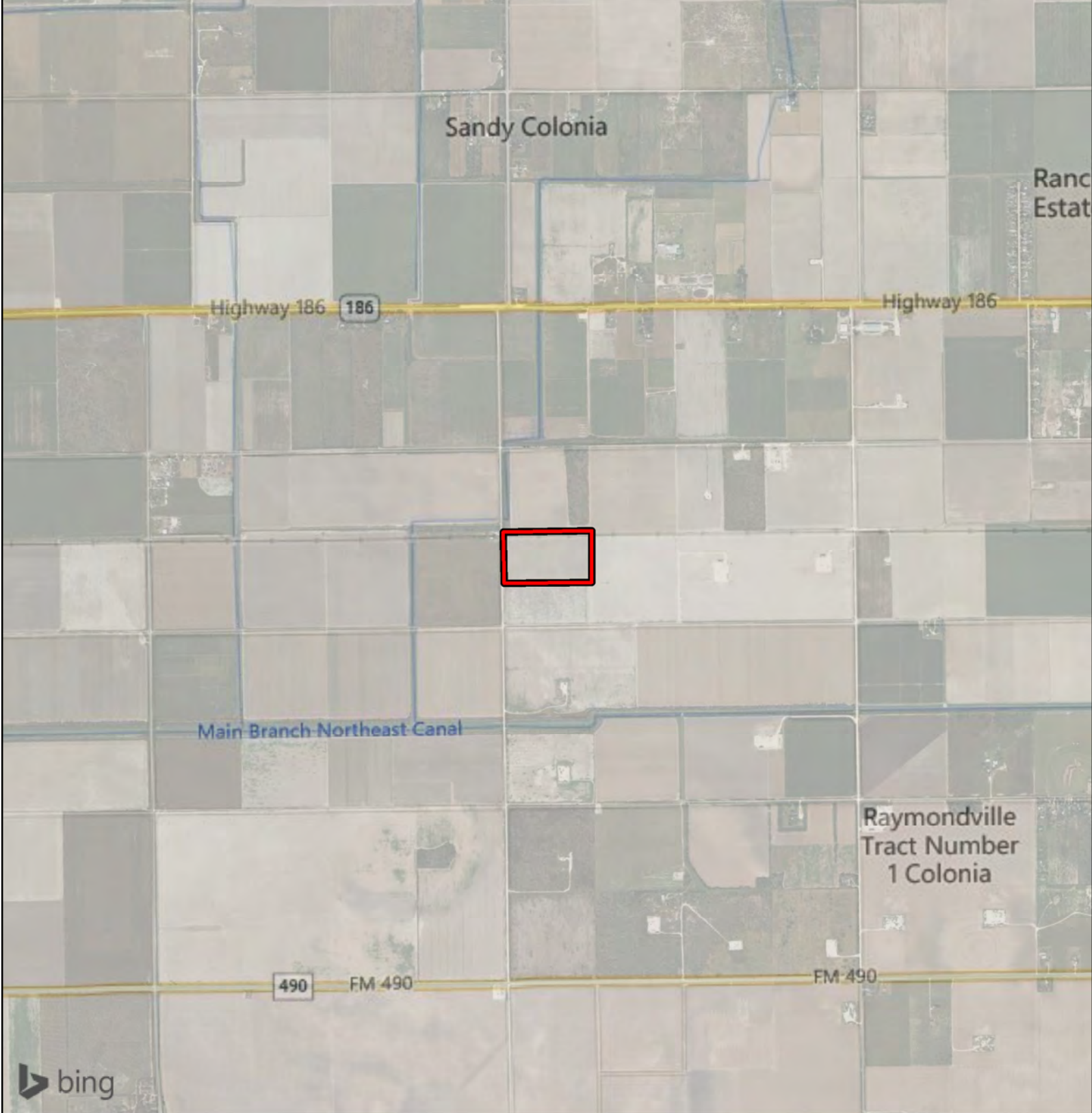
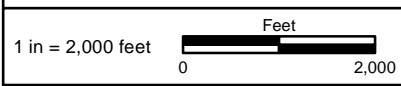



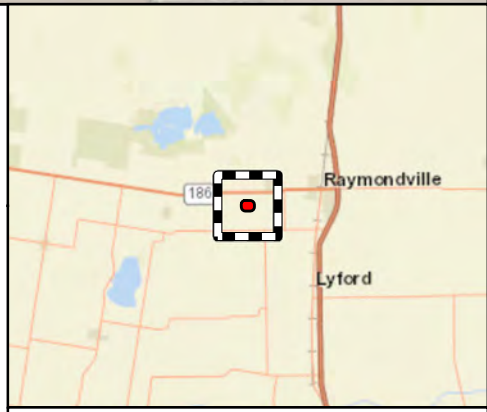
Figure 1D.
General Location Map

Magic Valley Solar Arrays
City of Raymondville
Willacy County, Texas

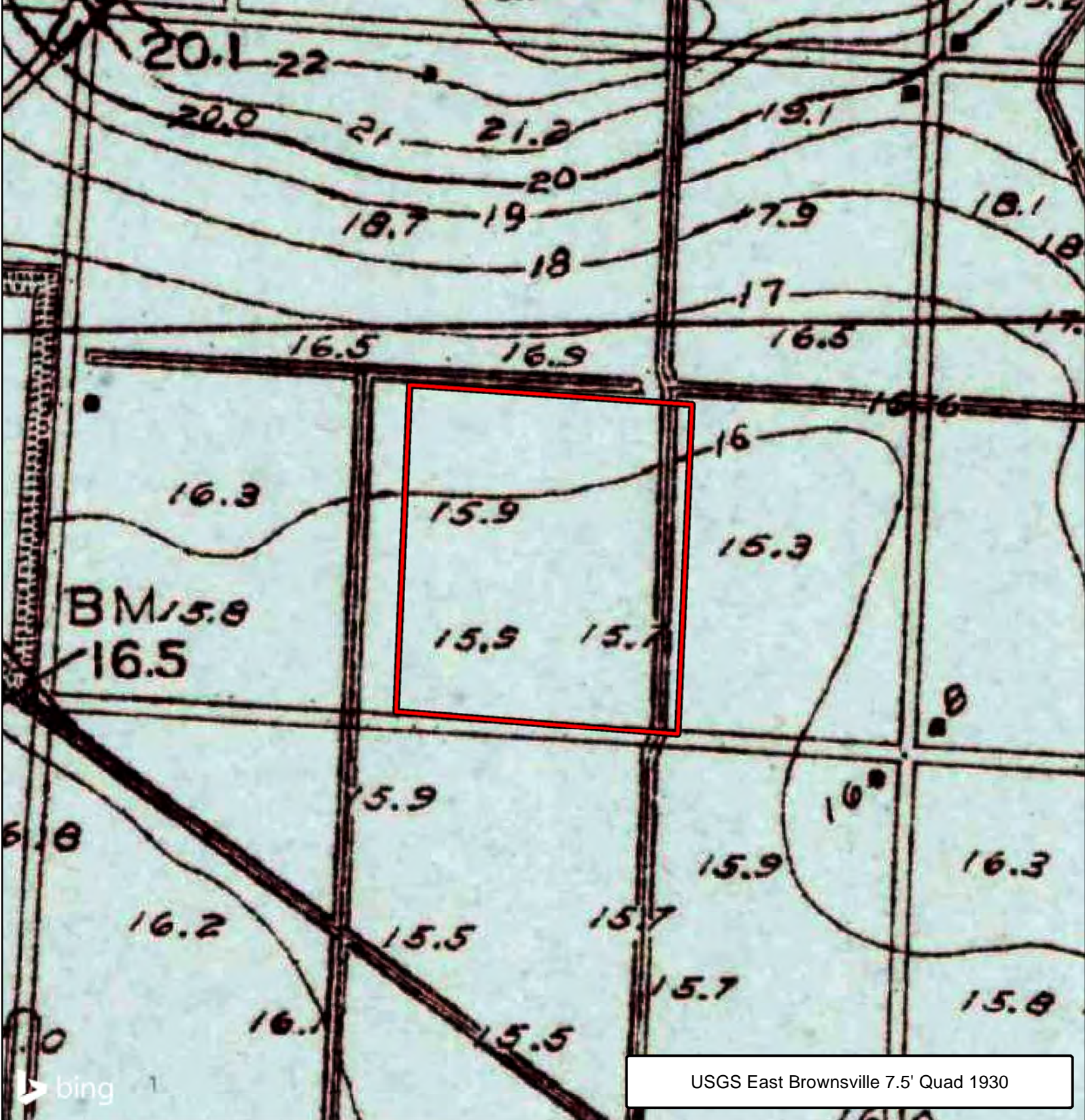


File Ref. 04.407.001
Date: 3/14/2023

 Survey Area



Area of Detail Scale: 1 inch equals 10 miles



USGS East Brownsville 7.5' Quad 1930

Figure 2A-1.
Topographic Setting

Magic Valley Solar Arrays
 City of Brownsville
 Cameron County, Texas

1 in = 500 feet

File Ref. 04.407.001
 Date: 3/14/2023

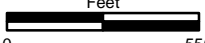
 Survey Area





**Figure 2A-2.
Topographic Setting**

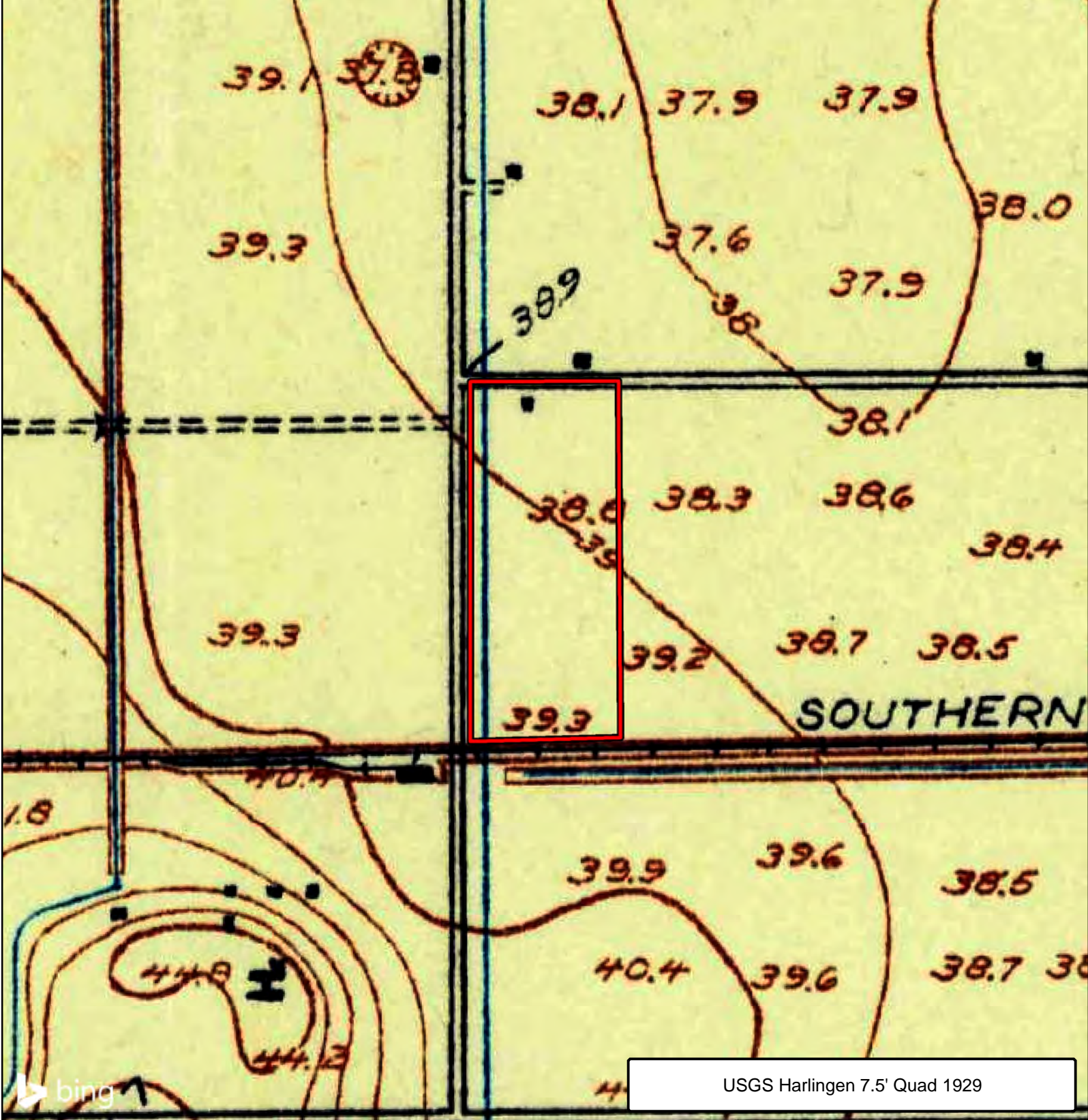
Magic Valley Solar Arrays
City of Donna
Hidalgo County, Texas

1 in = 550 feet 




File Ref. 04.407.001
Date: 3/14/2023


 Survey Area



**Figure 2A-3
Topographic Setting**

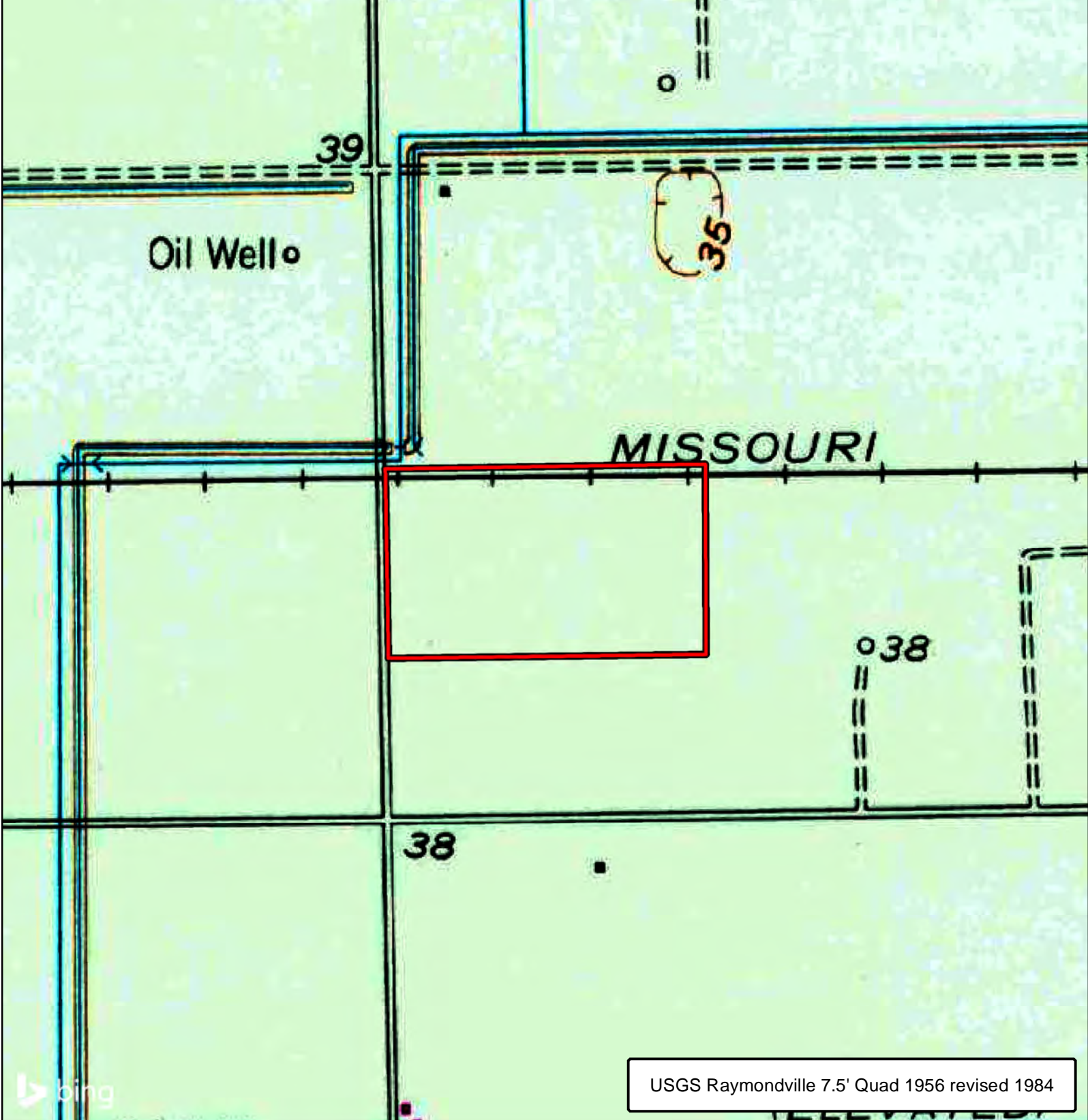
Magic Valley Solar Arrays
City of Harlingen
Cameron County, Texas

 Survey Area

1 in = 500 feet 




File Ref. 04.407.001
Date: 3/14/2023



**Figure 2A-4.
Topographic Setting**

Magic Valley Solar Arrays
City of Raymondville
Willacy County, Texas

1 in = 550 feet 



File Ref. 04.407.001
Date: 3/14/2023

USGS Raymondville 7.5' Quad 1956 revised 1984



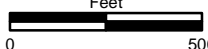
 Survey Area



Figure 2B-1.
Topographic Setting

Magic Valley Solar Arrays
 City of Brownsville
 Cameron County, Texas

 Survey Area

1 in = 500 feet 

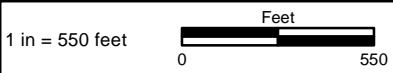


File Ref. 04.407.001
 Date: 3/14/2023




**Figure 2B-2.
Topographic Setting**

Magic Valley Solar Arrays
City of Donna
Hidalgo County, Texas



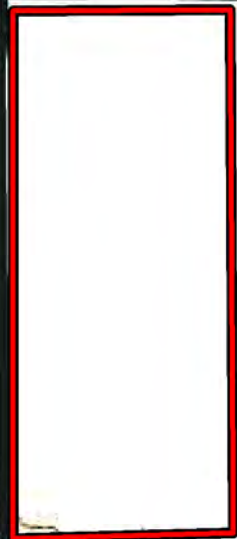
File Ref. 04.407.001
Date: 3/14/2023

 Survey Area

Primera

CO RD 708

ROOSEVELT

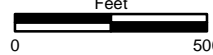


USGS Harlingen 7.5' Quad 2022

**Figure 2B-3.
Topographic Setting**

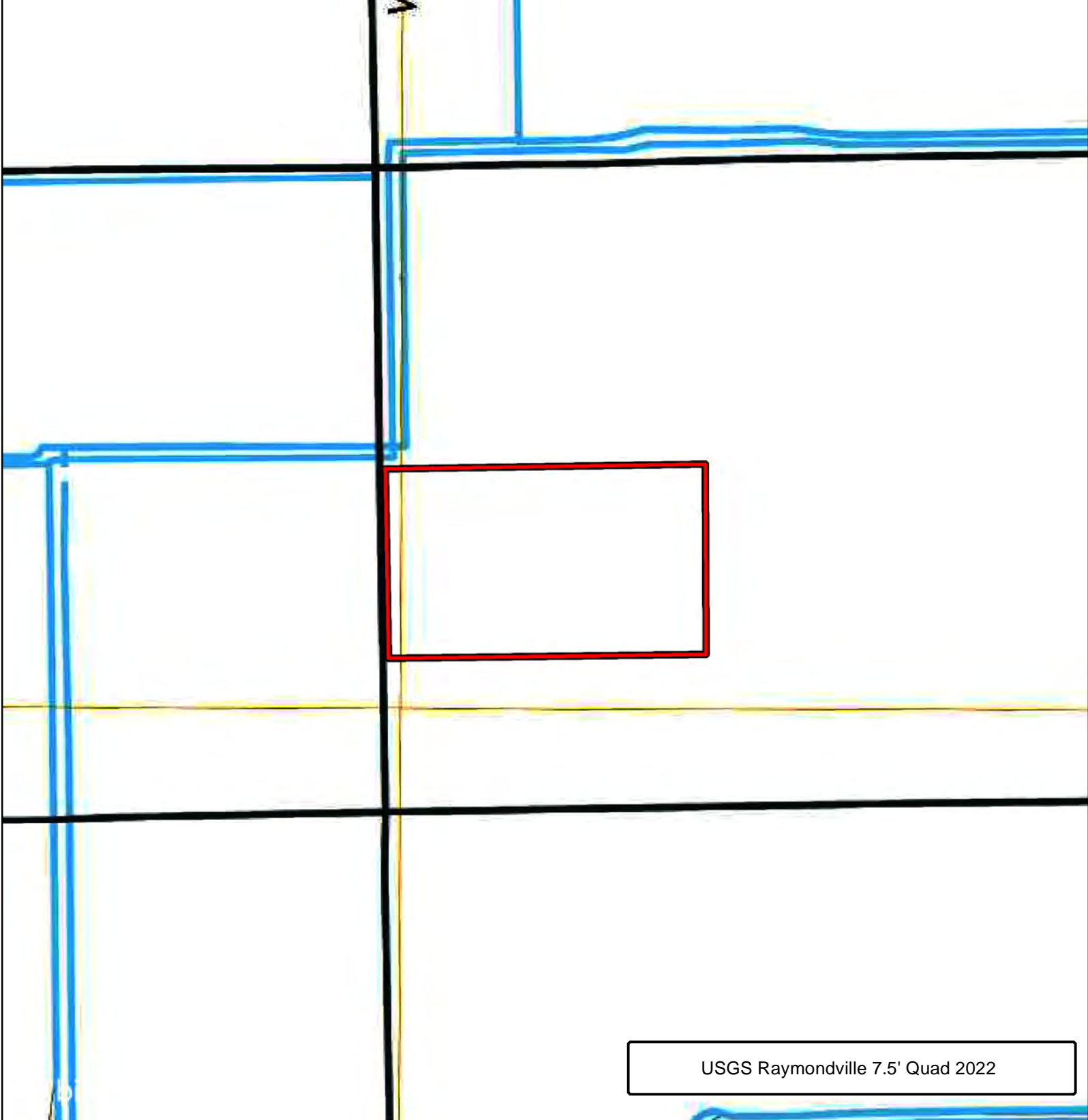
Magic Valley Solar Arrays
City of Harlingen
Cameron County, Texas

 Survey Area


1 in = 500 feet 



File Ref. 04.407.001
Date: 3/14/2023

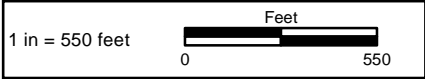


USGS Raymondville 7.5' Quad 2022

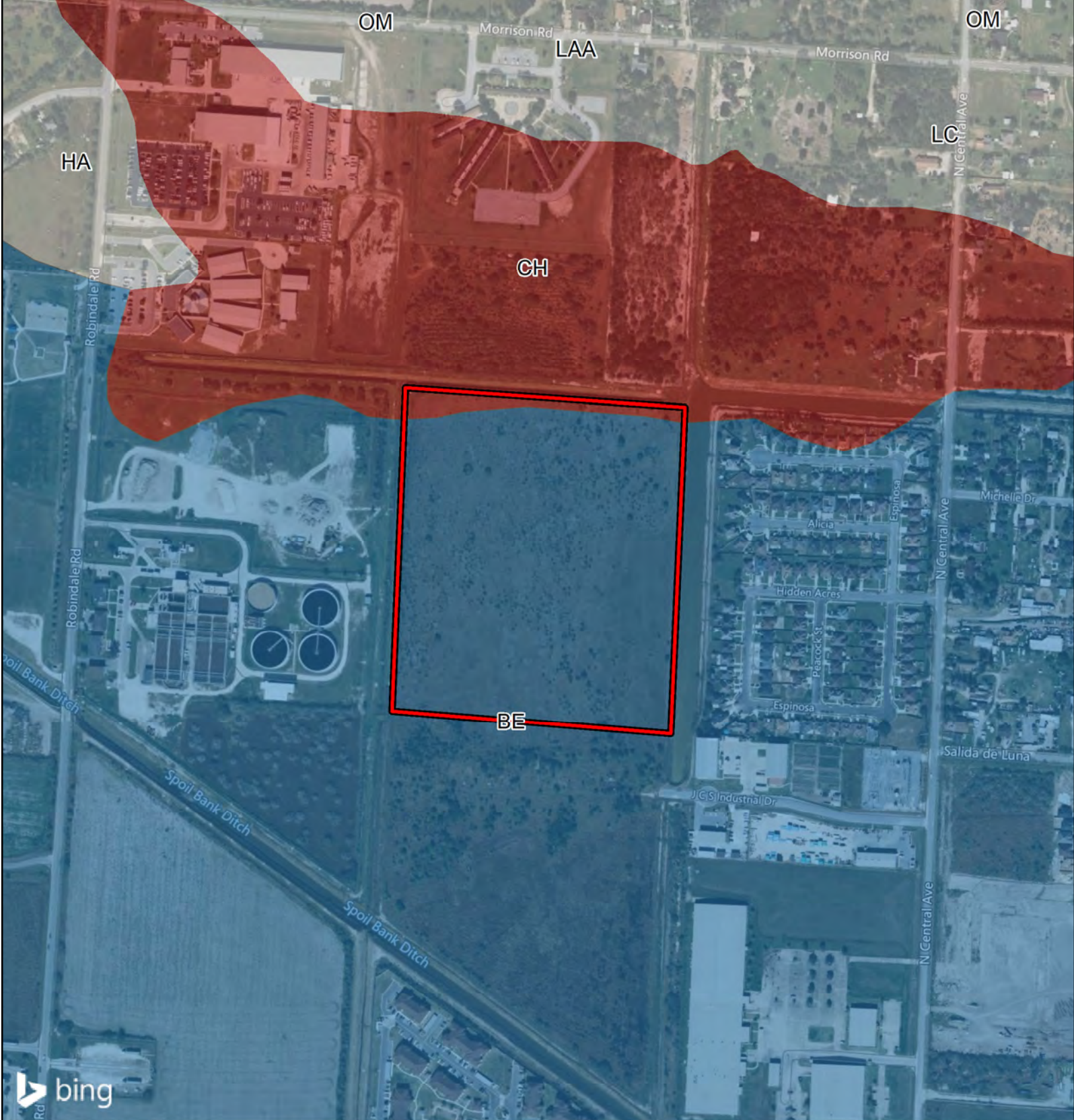
 Survey Area

**Figure 2B-4.
Topographic Setting**

Magic Valley Solar Arrays
City of Raymondville
Willacy County, Texas



File Ref. 04.407.001
Date: 3/14/2023

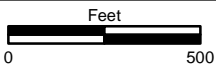


**Figure 3A.
Soils Map**

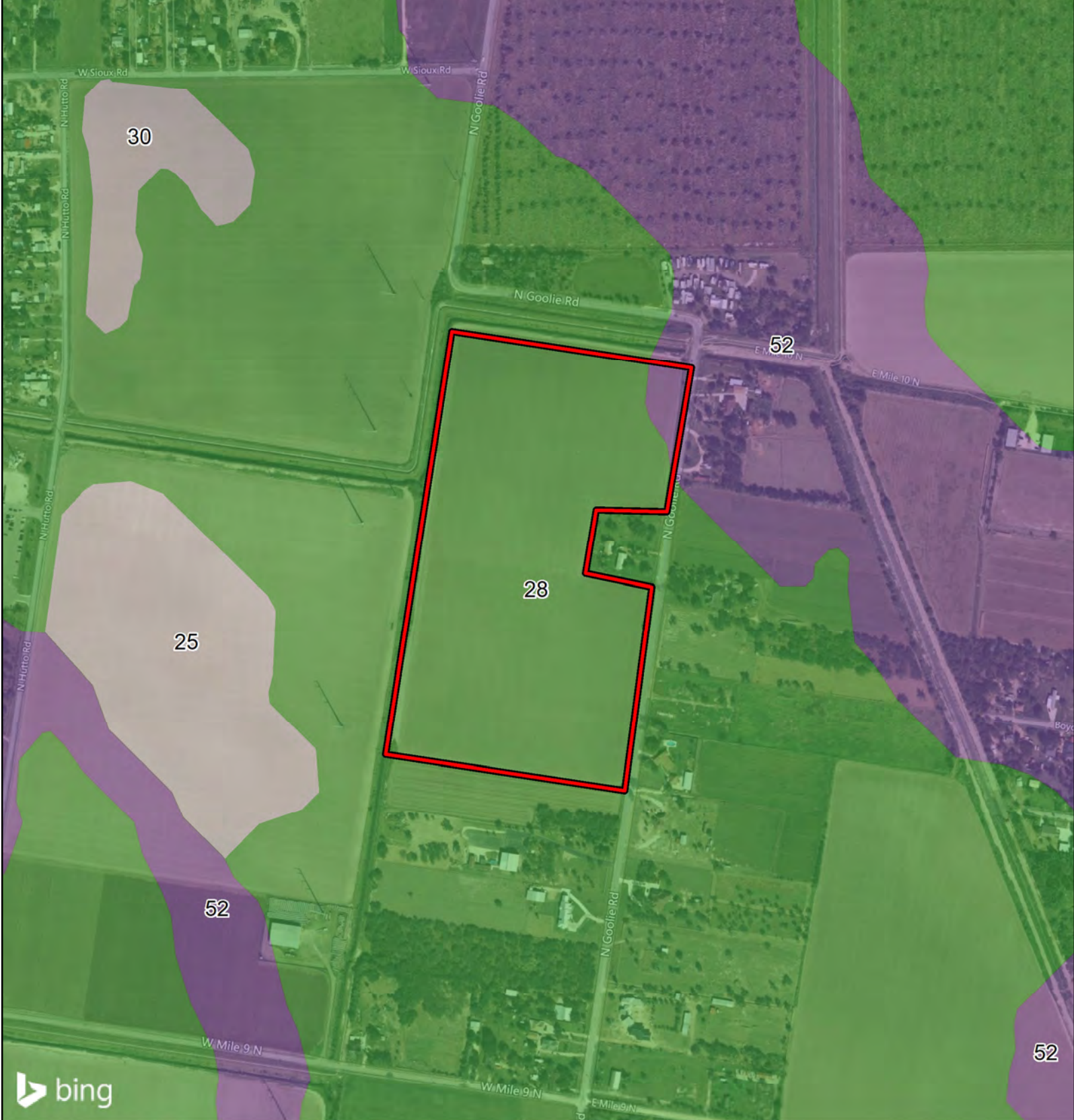
Magic Valley Solar Arrays
City of Brownsville
Cameron County, Texas

- Survey Area
- Soil map units outside survey area
- Soil Map Units**
- BE - Benito clay, ponded
- CH - Chargo silty clay

1 in = 500 feet



File Ref. 04.407.001
Date: 3/14/2023



**Figure 3B.
Soils Map**

Magic Valley Solar Arrays
City of Donna
Hidalgo County, Texas

- Survey Area
- Soil map units outside survey area

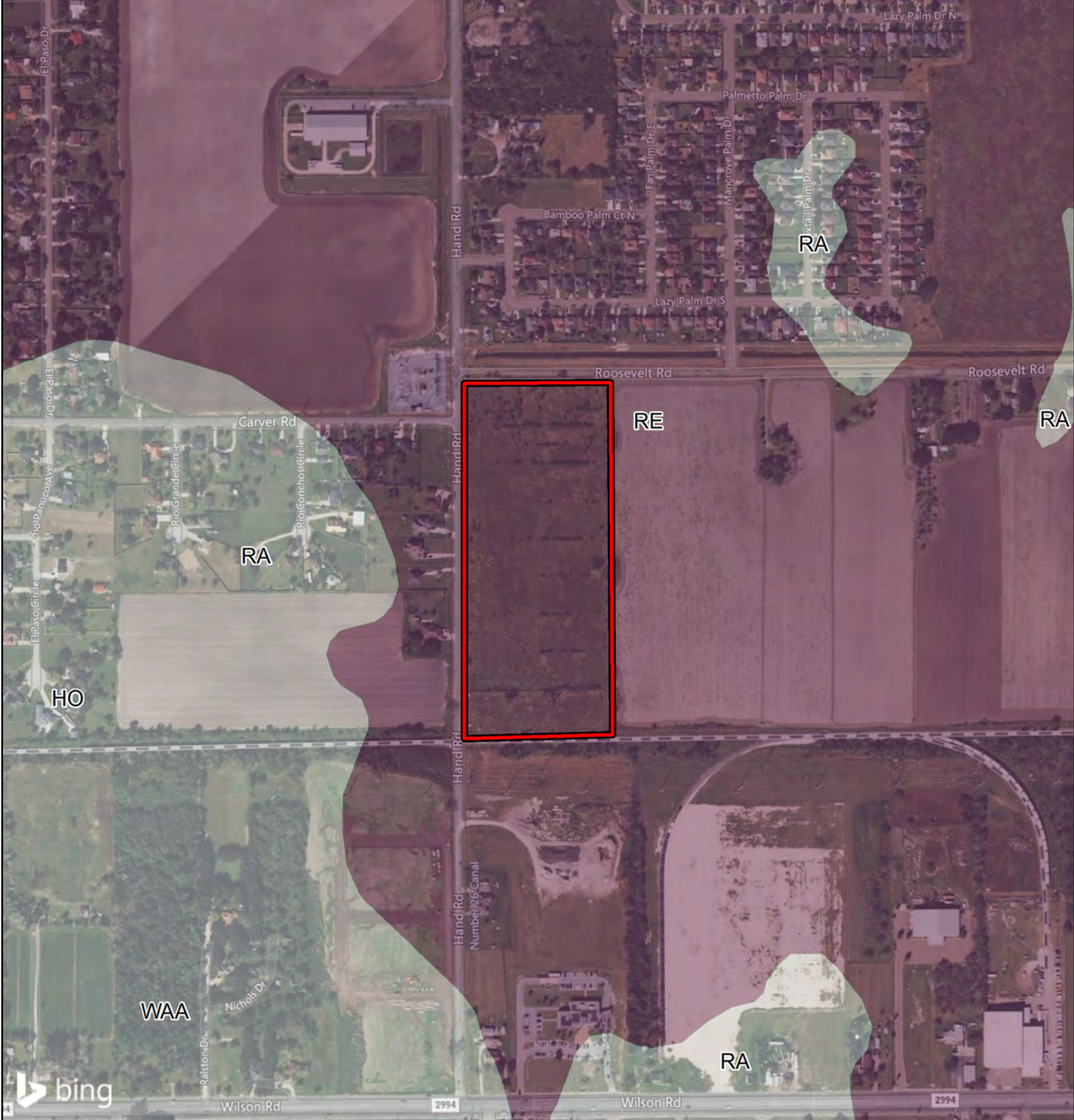
Soil Map Units

- 28 - Hidalgo sandy clay loam, 0 to 1 percent slopes
- 52 - Raymondville clay loam, 0 to 1 percent slopes



File Ref. 04.407.001
Date: 3/14/2023





**Figure 3C.
Soils Map**

Magic Valley Solar Arrays
City of Harlingen
Cameron County, Texas

- Survey Area
- Soil map units outside survey area
- Soil Map Units**
- RE - Raymondville clay loam

1 in = 500 feet

Feet
0 ————— 500

N

W — — E

S

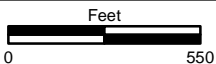
File Ref. 04.407.001
Date: 3/14/2023



**Figure 3D.
Soils Map**

Magic Valley Solar Arrays
City of Raymondville
Willacy County, Texas

1 in = 550 feet



File Ref. 04.407.001
Date: 3/14/2023

- Survey Area
- Soil map units outside survey area


Soil Map Units

- HoA - Hidalgo sandy clay loam, 0 to 1 percent slopes
- Rd - Raymondville clay loam
- Rg - Rio sandy clay loam, ponded



**Figure 4A.
Federal Emergency
Management Agency
Flood Insurance Rate Map**

Magic Valley Solar Arrays
City of Brownsville
Cameron County, Texas

 Survey Area

FEMA FIRM Zone Descriptions



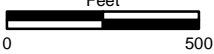
Zone X - Areas determined to be outside the 0.2% annual chance floodplain



Zone X - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood



Zone AH - Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet

1 in = 500 feet 



File Ref. 04.407.001
Date: 3/14/2023



PANEL
4803340425C
eff. 11/16/1982


Figure 4B.
Federal Emergency
Management Agency
Flood Insurance Rate Map

Magic Valley Solar Arrays
 City of Donna
 Hidalgo County, Texas


1:12,000
 Feet
 0 550





File Ref. 04.407.001
 Date: 4/11/2023

 Survey Area

FEMA FIRM Zone Descriptions

 Zone X - Areas determined to be outside the 0.2% annual chance floodplain

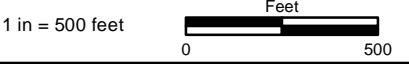
 Zone X - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood

 Zone AH - Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet







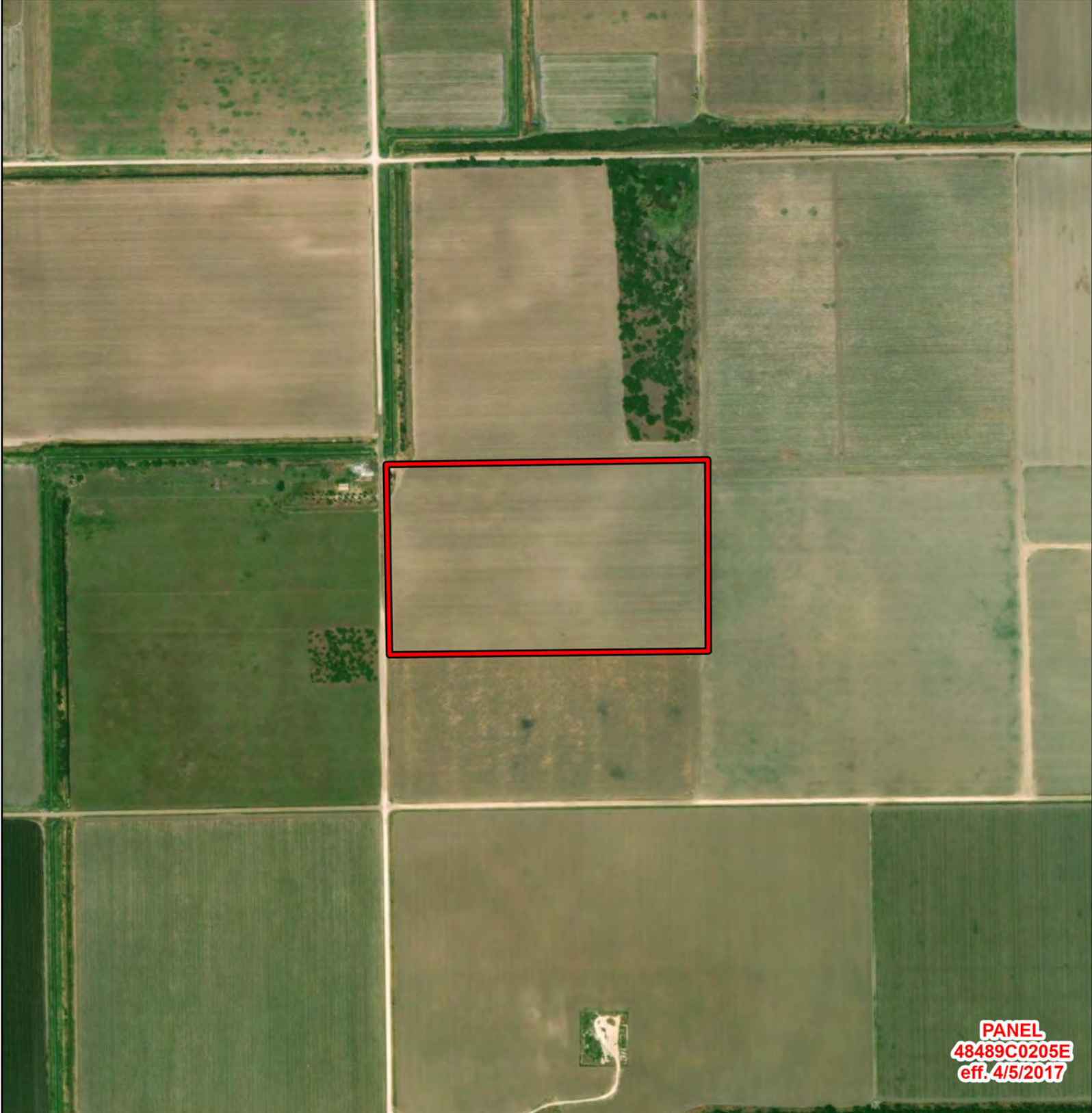
**Figure 4C.
Federal Emergency
Management Agency
Flood Insurance Rate Map**

Magic Valley Solar Arrays
City of Harligen
Cameron County, Texas



File Ref. 04.407.001
Date: 3/14/2023

-  Survey Area
- FEMA FIRM Zone Descriptions**
-  Zone X - Areas determined to be outside the 0.2% annual chance floodplain
-  Zone X - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood
-  Zone AH - Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet

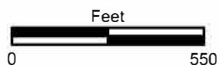


PANEL
48489C0205E
eff. 4/5/2017


Figure 4D.
Federal Emergency
Management Agency
Flood Insurance Rate Map

Magic Valley Solar Arrays
 City of Raymondville
 Willacy County, Texas


1:6,600





File Ref. 04.407.001
 Date: 4/11/2023

 Survey Area

FEMA FIRM Zone Descriptions

 Zone X - Areas determined to be outside the 0.2% annual chance floodplain

 Zone X - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood



 Zone AH - Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet

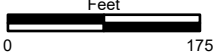


bing

Figure 5A.
Vegetation Communities
Identified within the Survey Area

Magic Valley Solar Arrays
City of Brownsville
Cameron County, Texas

-  Survey Area
- Vegetation Community**
-  Upland Grassland

1 in = 175 ft 





File Ref. 04.407.001
Date: 5/11/2023



Figure 5B.
Vegetation Communities
Identified within the Survey Area

Magic Valley Solar Arrays
 City of Donna
 Hidalgo County, Texas

-  Survey Area
- Vegetation Community**
-  Upland Grassland

1 in = 250 ft





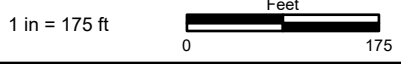
File Ref. 04.407.001
 Date: 5/11/2023



Figure 5C.
Vegetation Communities
Identified within the Survey Area

Magic Valley Solar Arrays
 City of Harlingen
 Cameron County, Texas

-  Survey Area
- Vegetation Community**
-  Upland Grassland





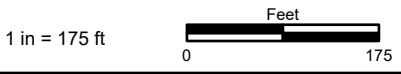
File Ref. 04.407.001
 Date: 5/11/2023



Figure 5D.
Vegetation Communities
Identified within the Survey Area

Magic Valley Solar Arrays
 City of Raymondville
 Willacy County, Texas

-  Survey Area
- Vegetation Community**
-  Row Crop Corn



File Ref. 04.407.001
 Date: 5/11/2023

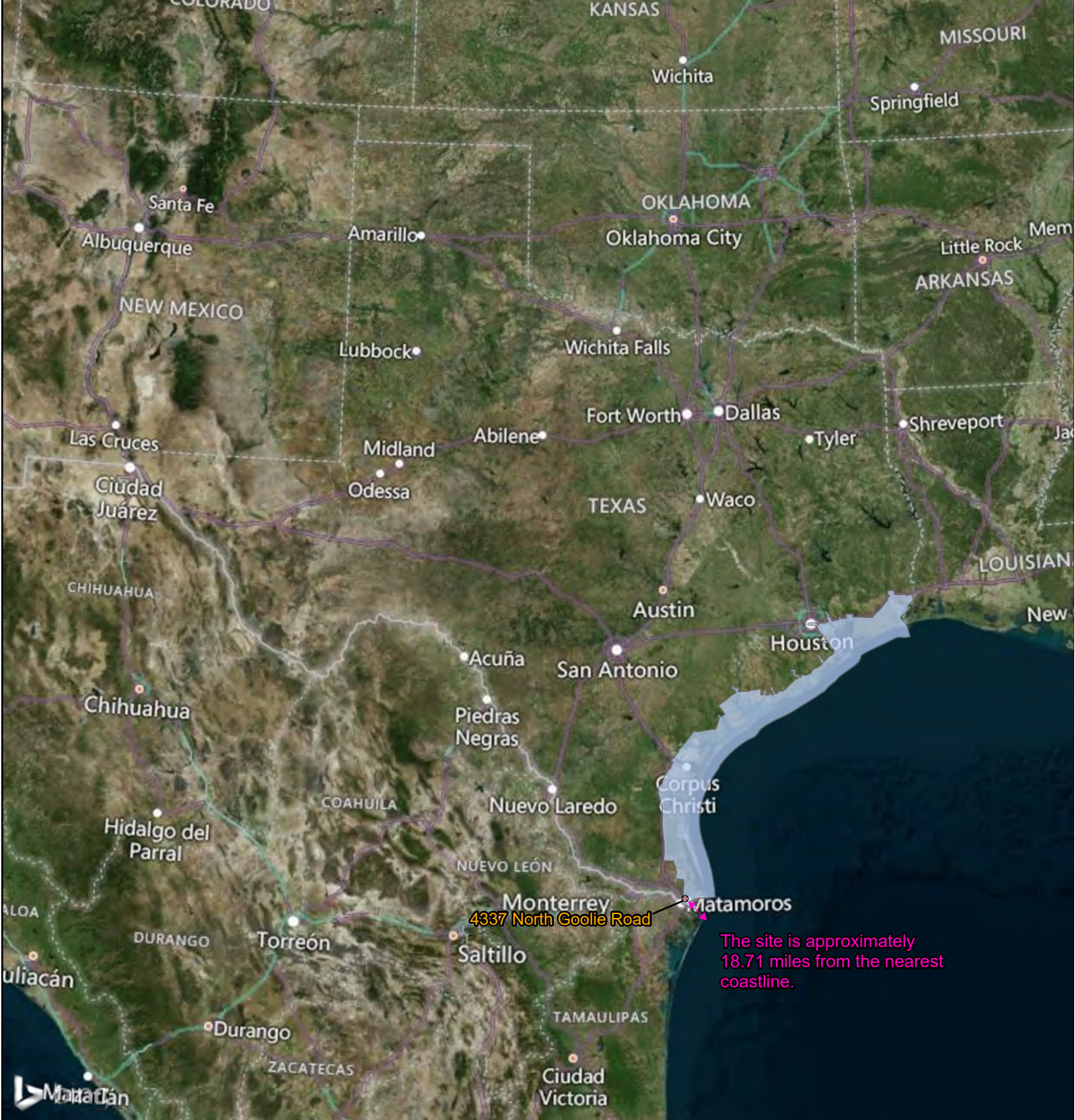




Figure 6A.
Coastal Areas in Relation
to Project Locations

Magic Valley Solar Arrays
 City of Brownsville
 Cameron County, Texas

-  Survey Area
-  Coastal Zone Boundary



File Ref. 04.407.001
 Date: 10/30/2023

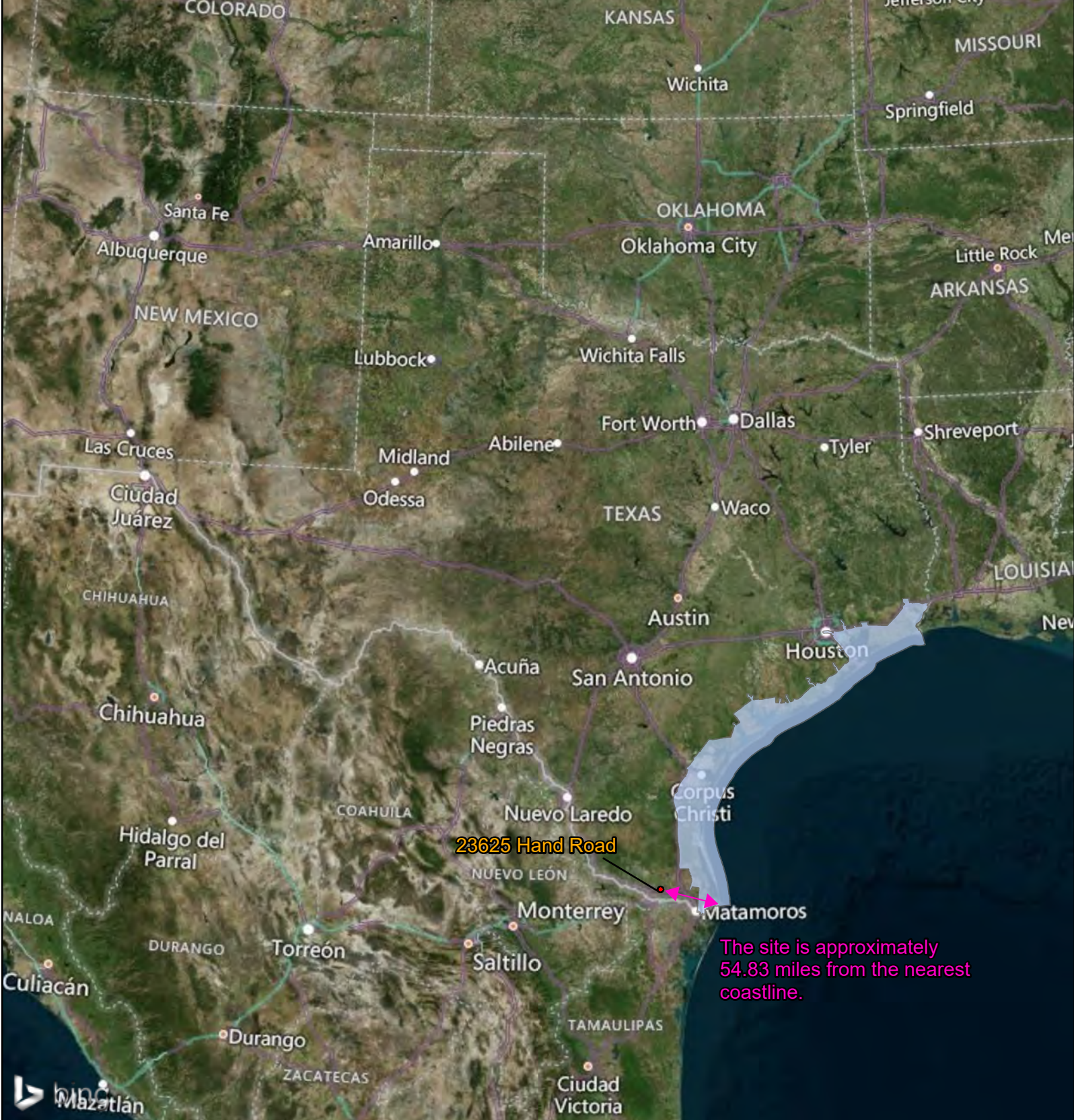
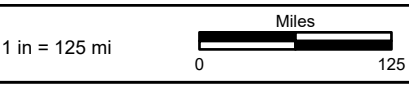


Figure 6B.
Coastal Areas in Relation
to Project Locations

- Survey Area
- Coastal Zone Boundary

Magic Valley Solar Arrays
 City of Donna
 Hidalgo County, Texas



File Ref. 04.407.001
 Date: 10/30/2023

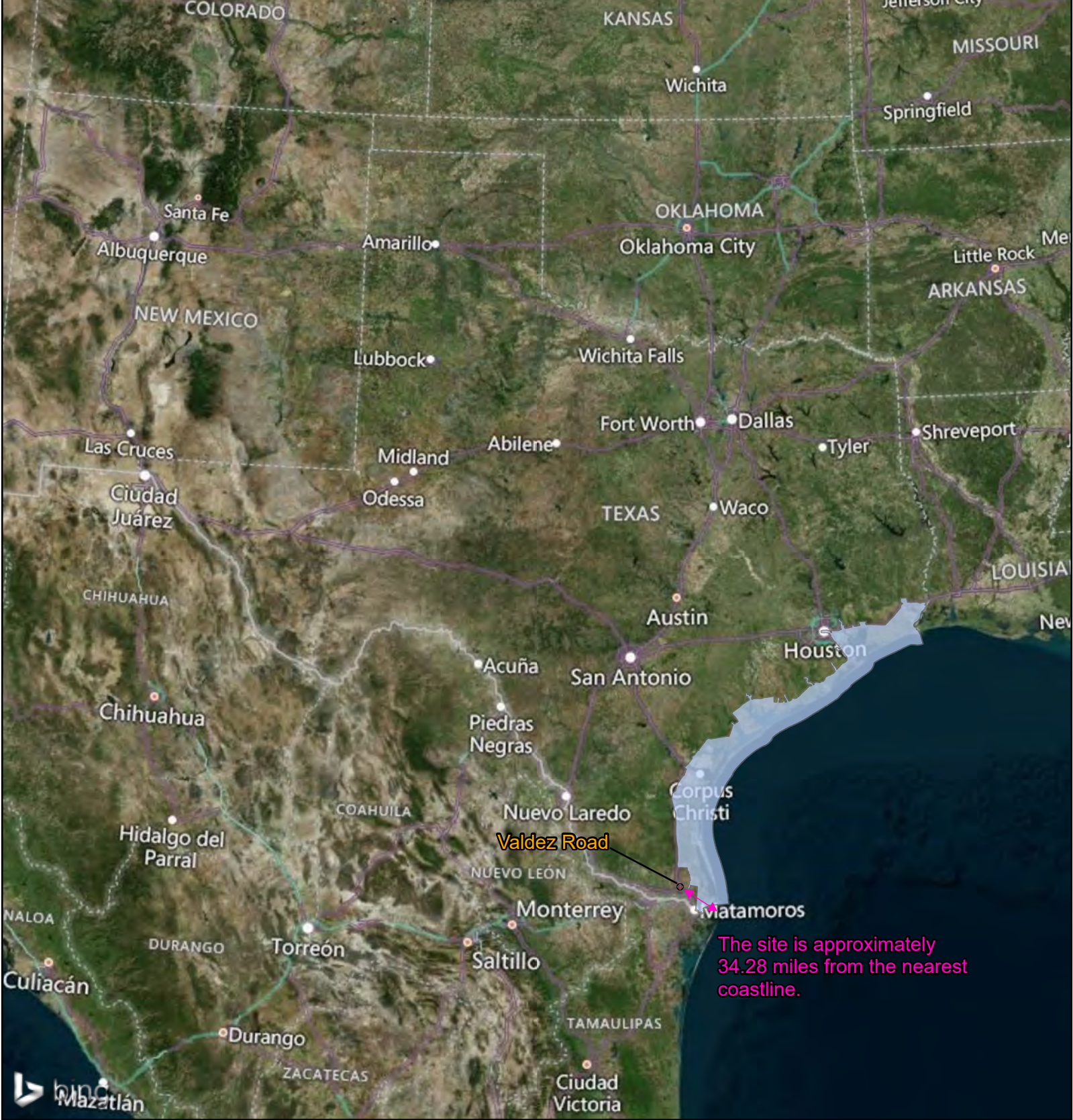
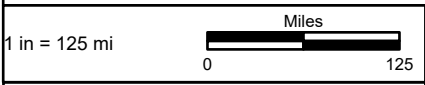


Figure 6C.
Coastal Areas in Relation
to Project Locations

- Survey Area
- Coastal Zone Boundary

Magic Valley Solar Arrays
 City of Harlingen
 Cameron County, Texas



File Ref. 04.407.001
 Date: 10/30/2023

The site is approximately
 34.28 miles from the nearest
 coastline.

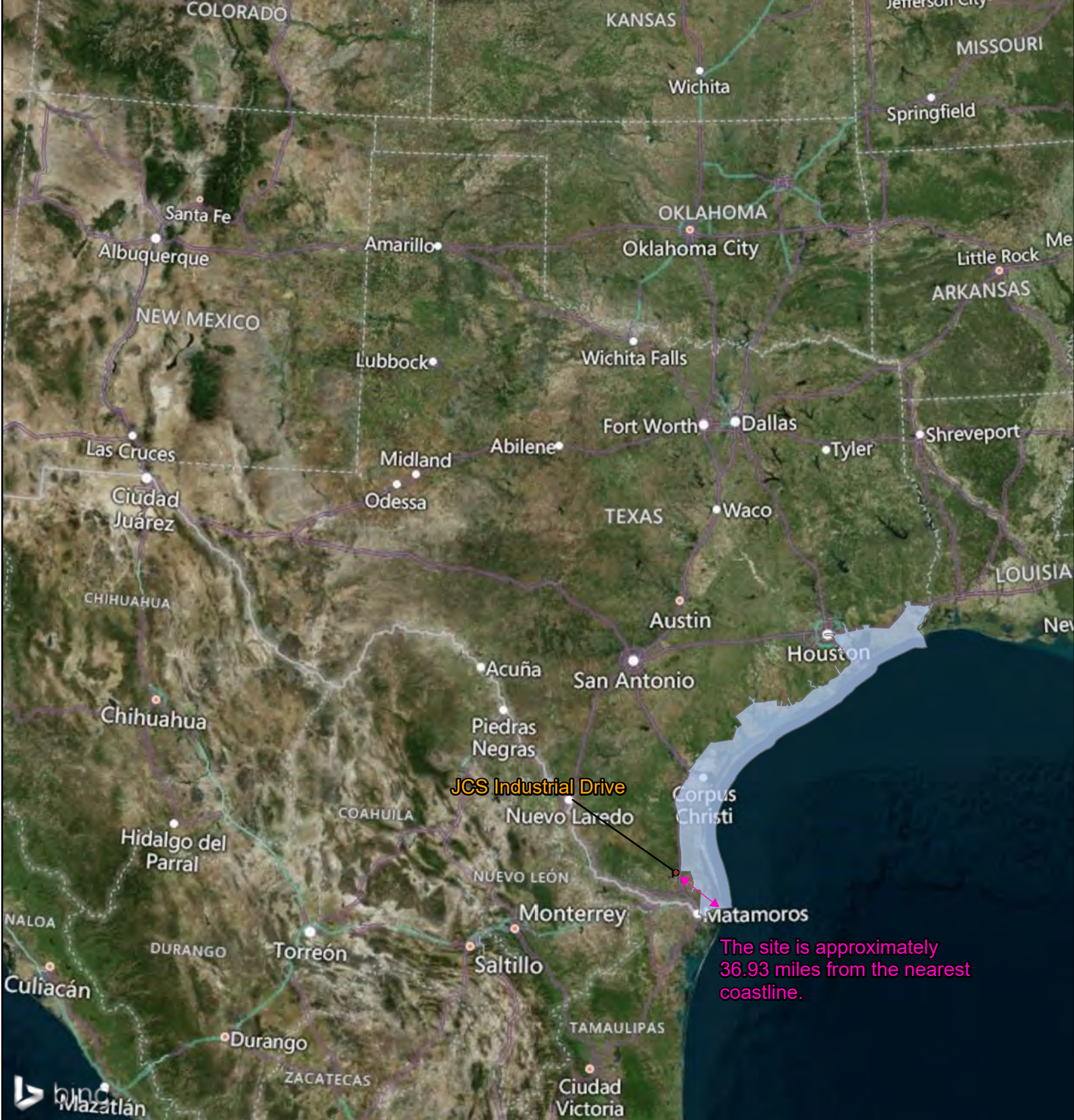


Figure 6D.
Coastal Areas in Relation
to Project Locations

- Survey Area
- Coastal Zone Boundary

Magic Valley Solar Arrays
 City of Raymondville
 Willacy County, Texas



File Ref. 04.407.001
 Date: 10/30/2023

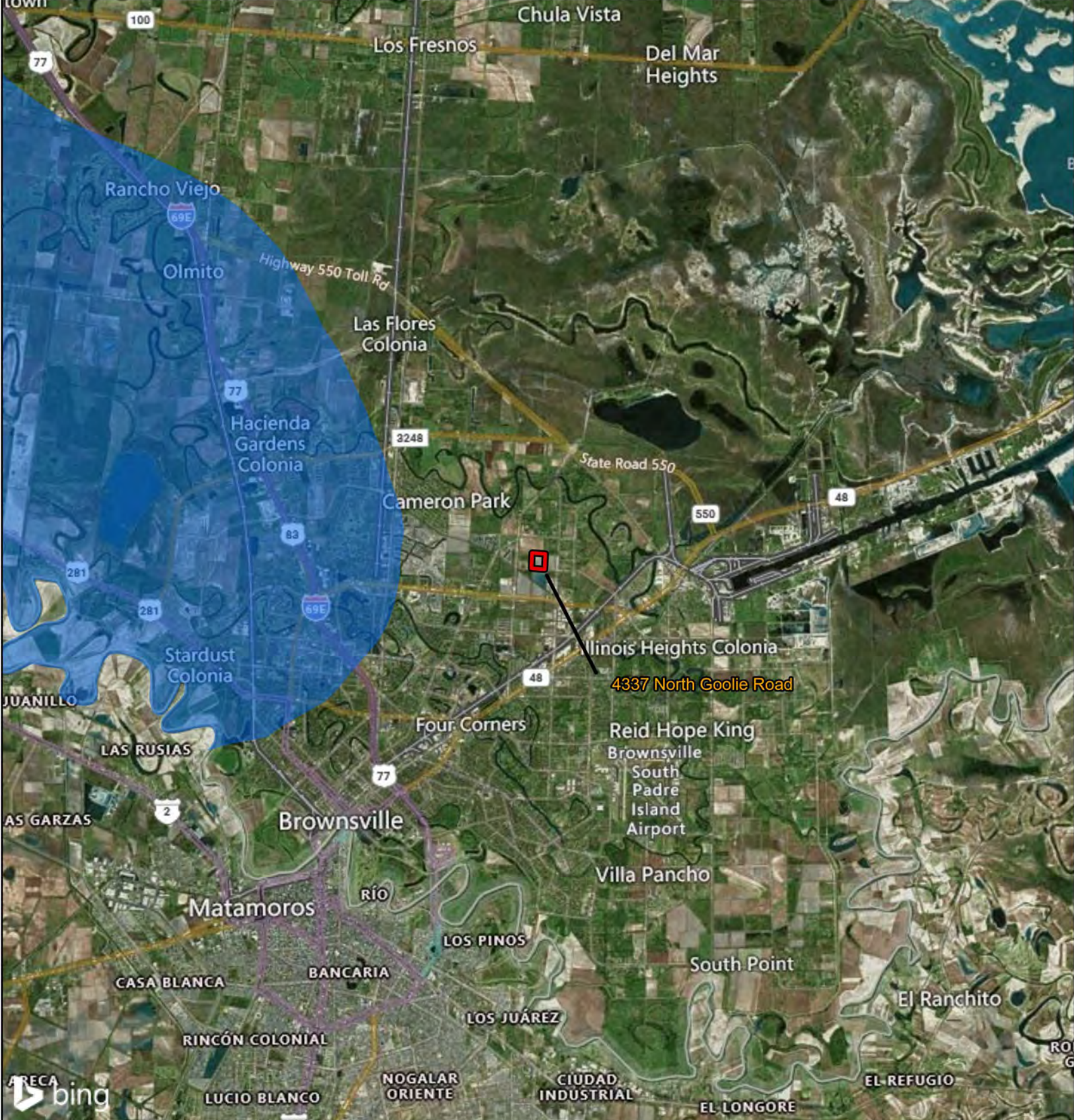


Figure 7A.
Project Locations in
Relation to Aquifers

- Survey Area
- Major Aquifer
- Gulf Coast

Magic Valley Solar Arrays
 City of Brownsville
 Cameron County, Texas

1 in = 2 mi

Miles
 0 ————— 2

File Ref. 04.407.001
 Date: 4/6/2023

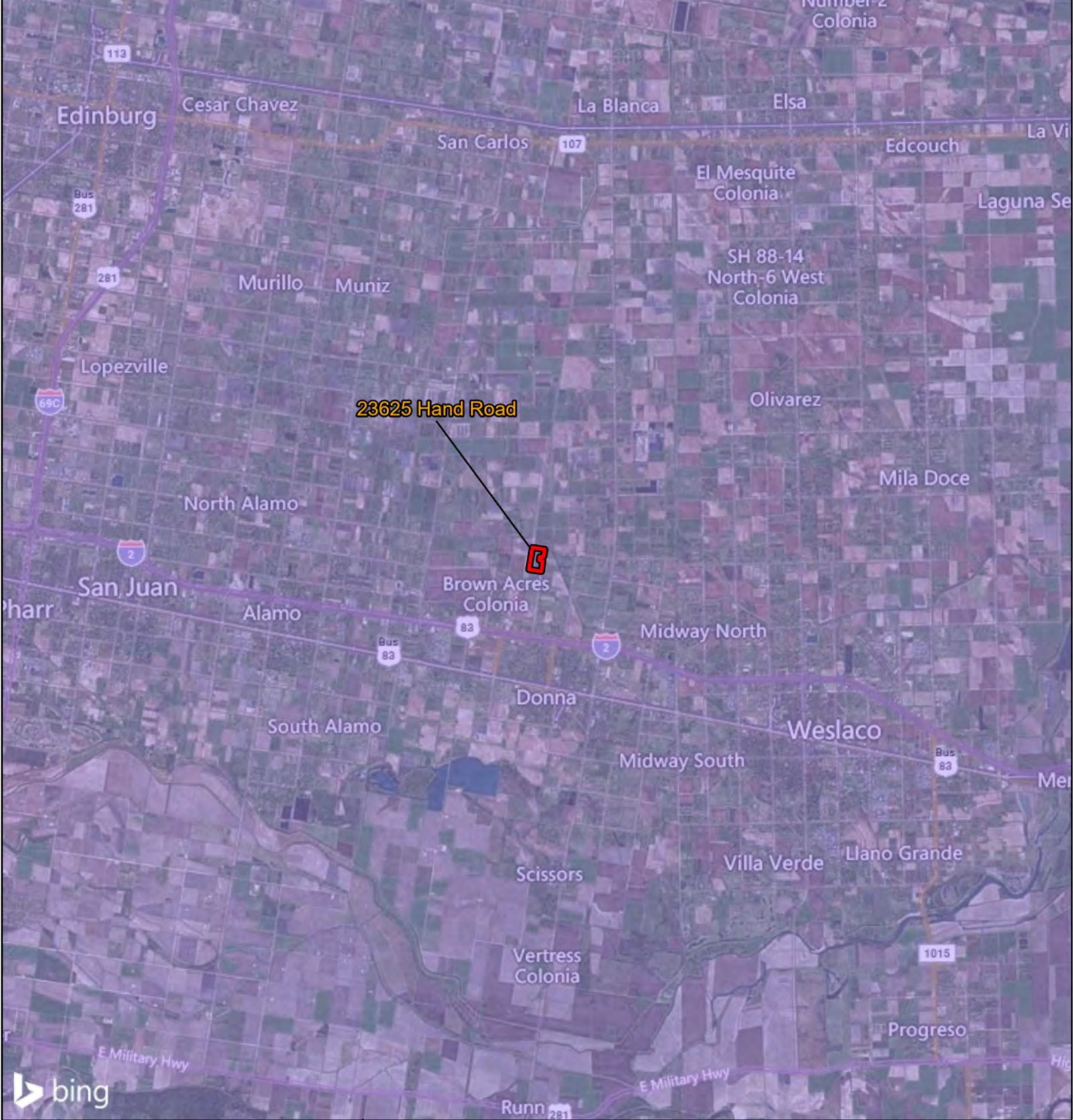


Figure 7B.
Project Locations in
Relation to Aquifers

- Survey Area
- Major Aquifer
- Gulf Coast

Magic Valley Solar Arrays
 City of Donna
 Hidalgo County, Texas



File Ref. 04.407.001
 Date: 4/10/2023

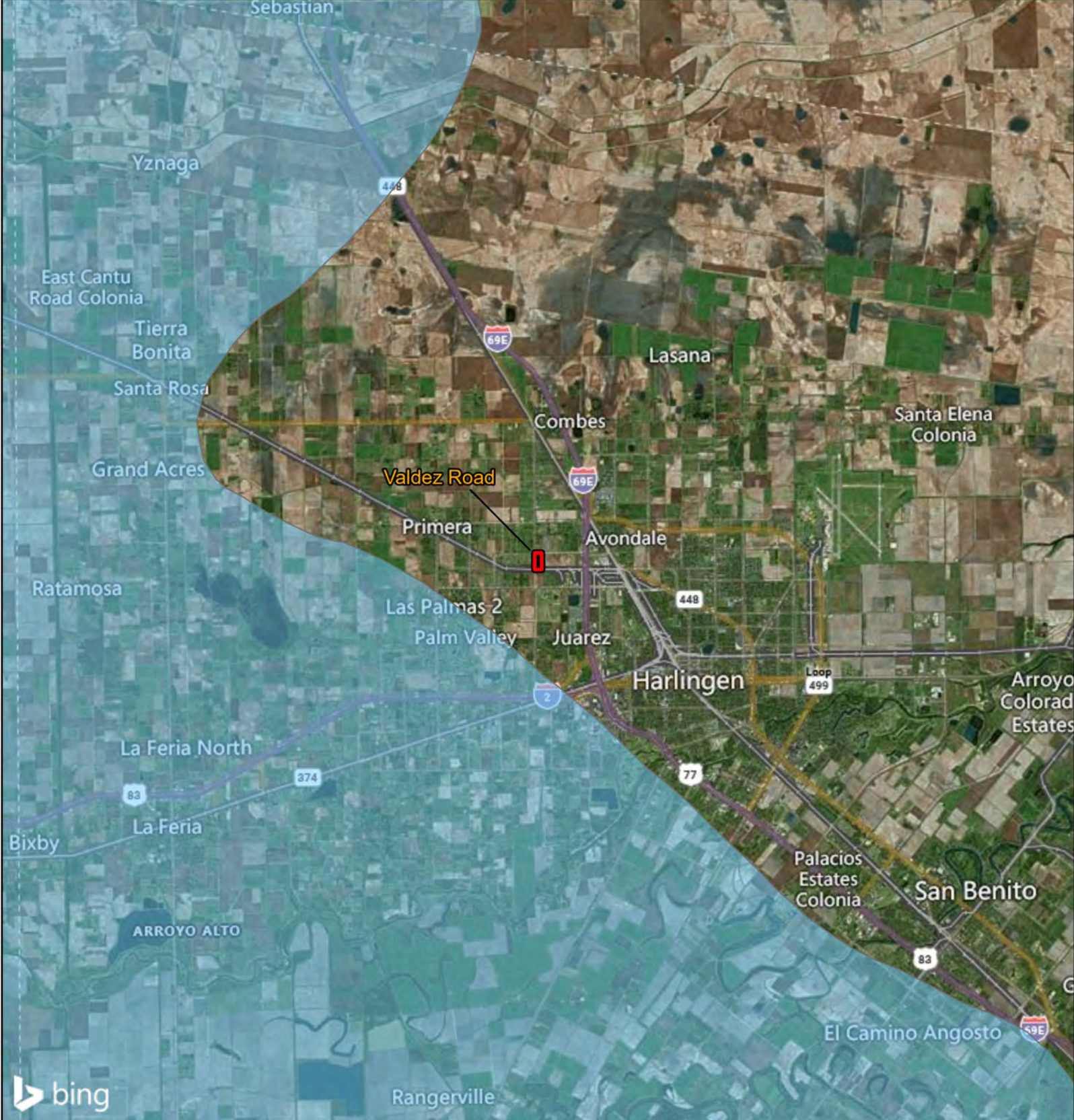


Figure 7C.
Project Locations in
Relation to Aquifers

Magic Valley Solar Arrays
 City of Harlingen
 Cameron County, Texas

■ Survey Area
Major Aquifer
 Gulf Coast

1 in = 2 mi

Miles
 0 ————— 2

File Ref. 04.407.001
 Date: 4/10/2023



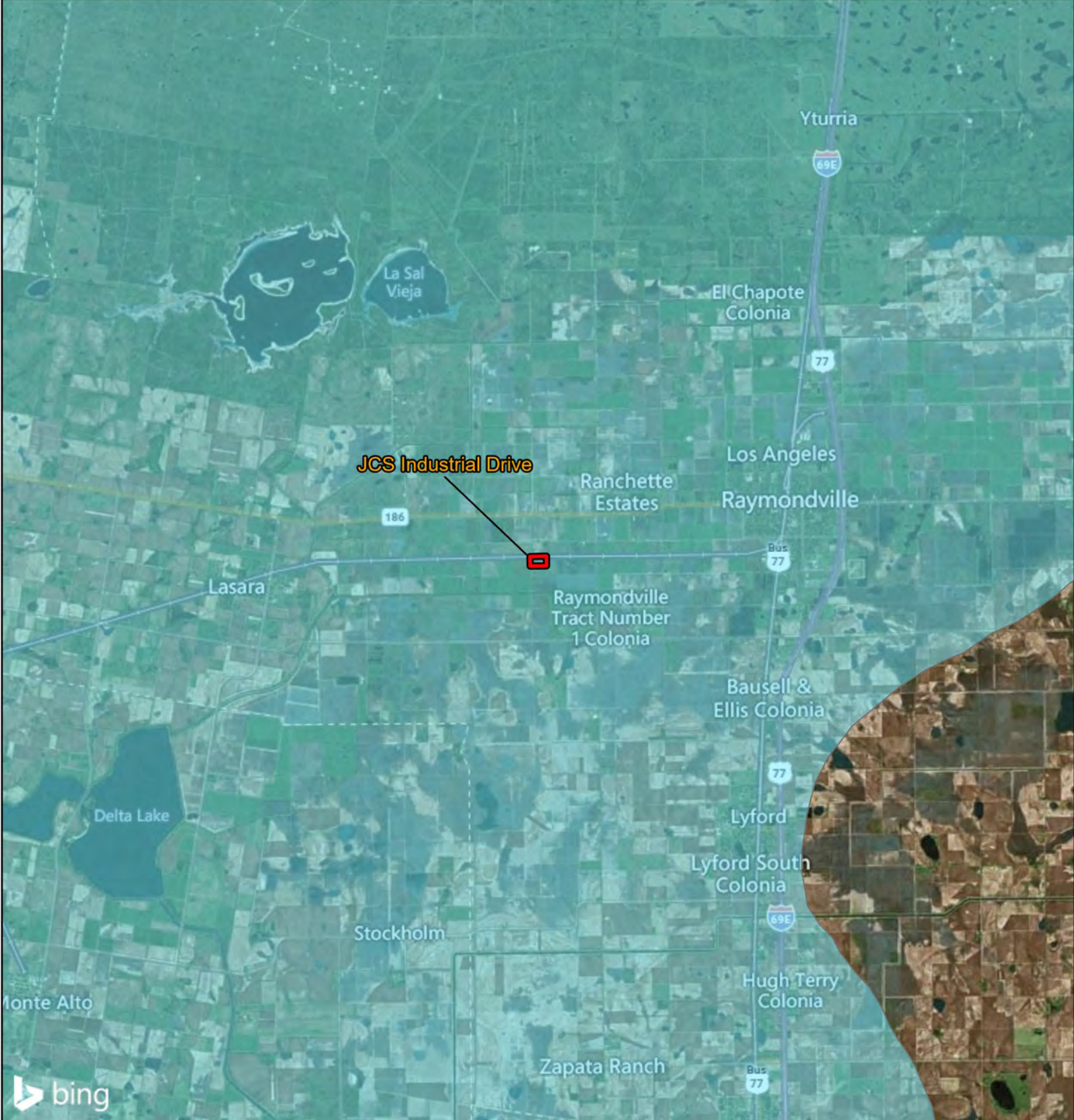




Figure 7D.
Project Locations in
Relation to Aquifers

 Survey Area
Major Aquifer
 Gulf Coast

Magic Valley Solar Arrays
 City of Raymondville
 Willacy County, Texas



File Ref. 04.407.001
 Date: 4/10/2023

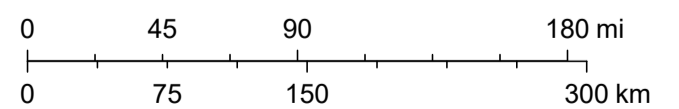
Figure 8. EPA Sole Source Aquifer Map



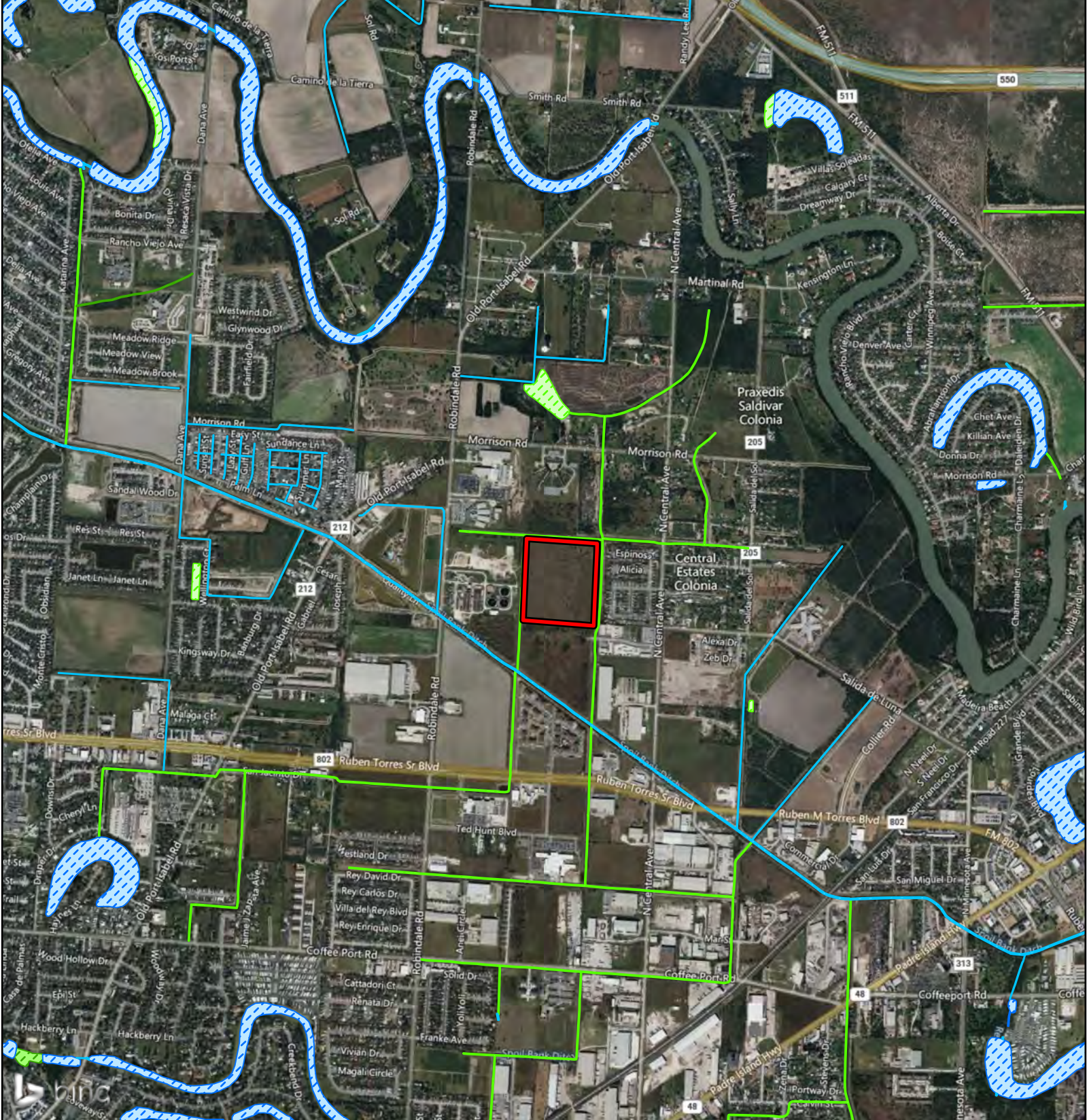
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 Sole Source Aquifers- Edwards Aquifer I

1:4,622,324



Esri, HERE, Garmin, NGA, USGS, NPS



**Figure 9A.
NWI Map**

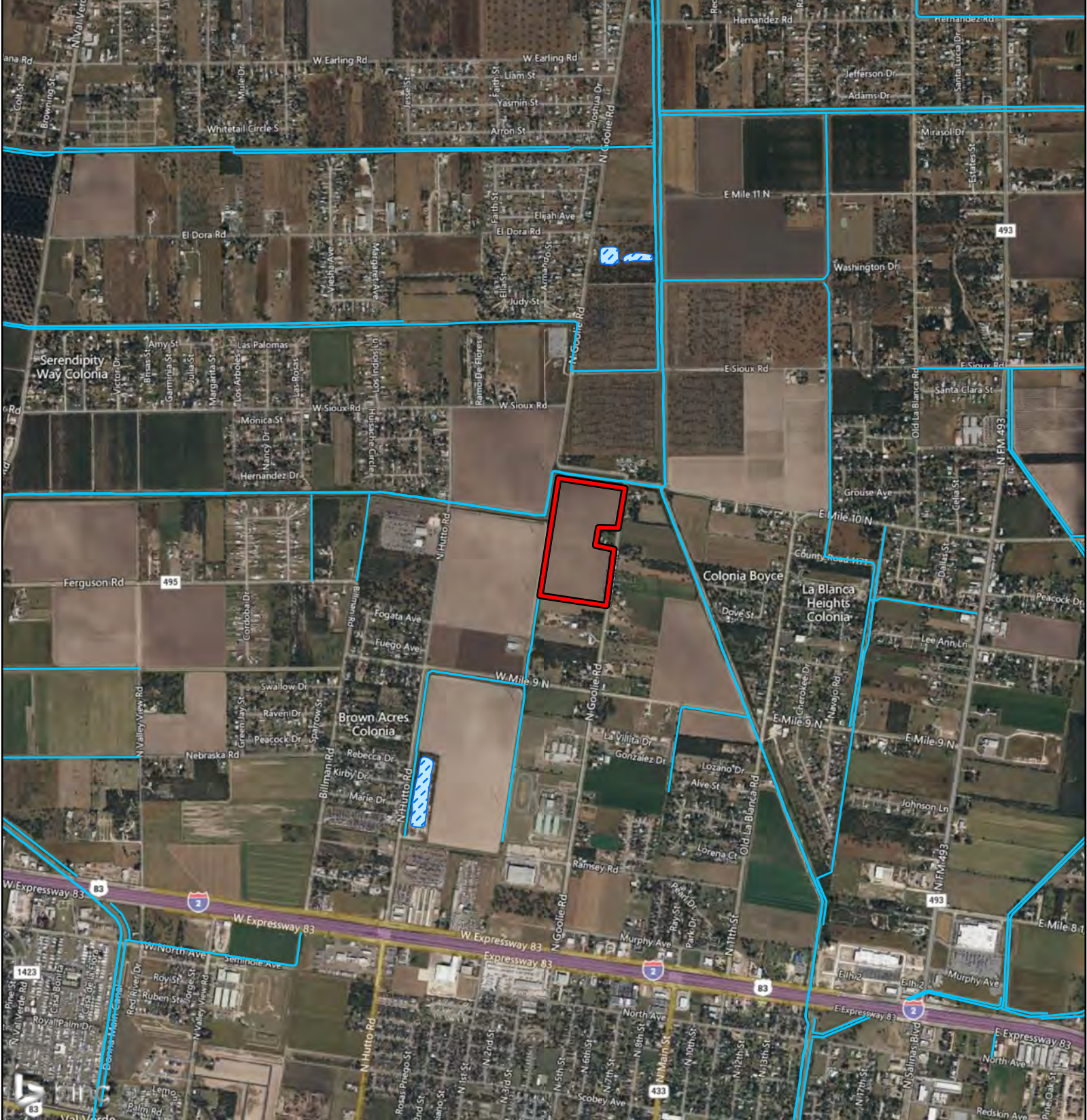
Magic Valley Solar Arrays
City of Brownsville
Willacy County, Texas

- Survey Area
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

1 in = 2,000 ft








File Ref. 04.407.001
Date: 11/15/2023

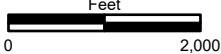


**Figure 9B.
NWI Map**

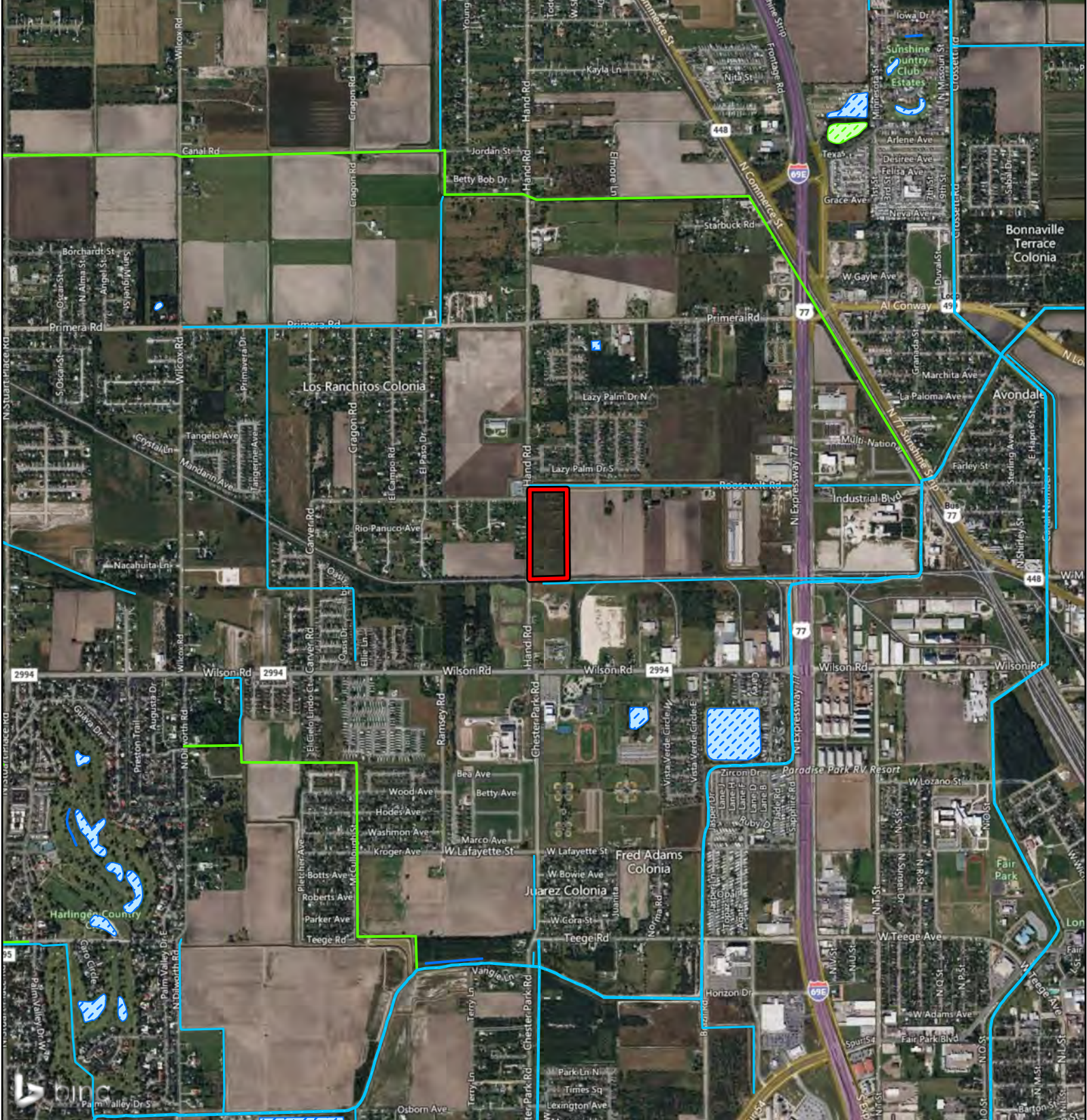
**Magic Valley Solar Arrays
City of Donna
Hidalgo County, Texas**

-  Survey Area
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Riverine

1 in = 2,000 ft









File Ref. 04.407.001
Date: 11/15/2023

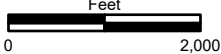


**Figure 9C.
NWI Map**

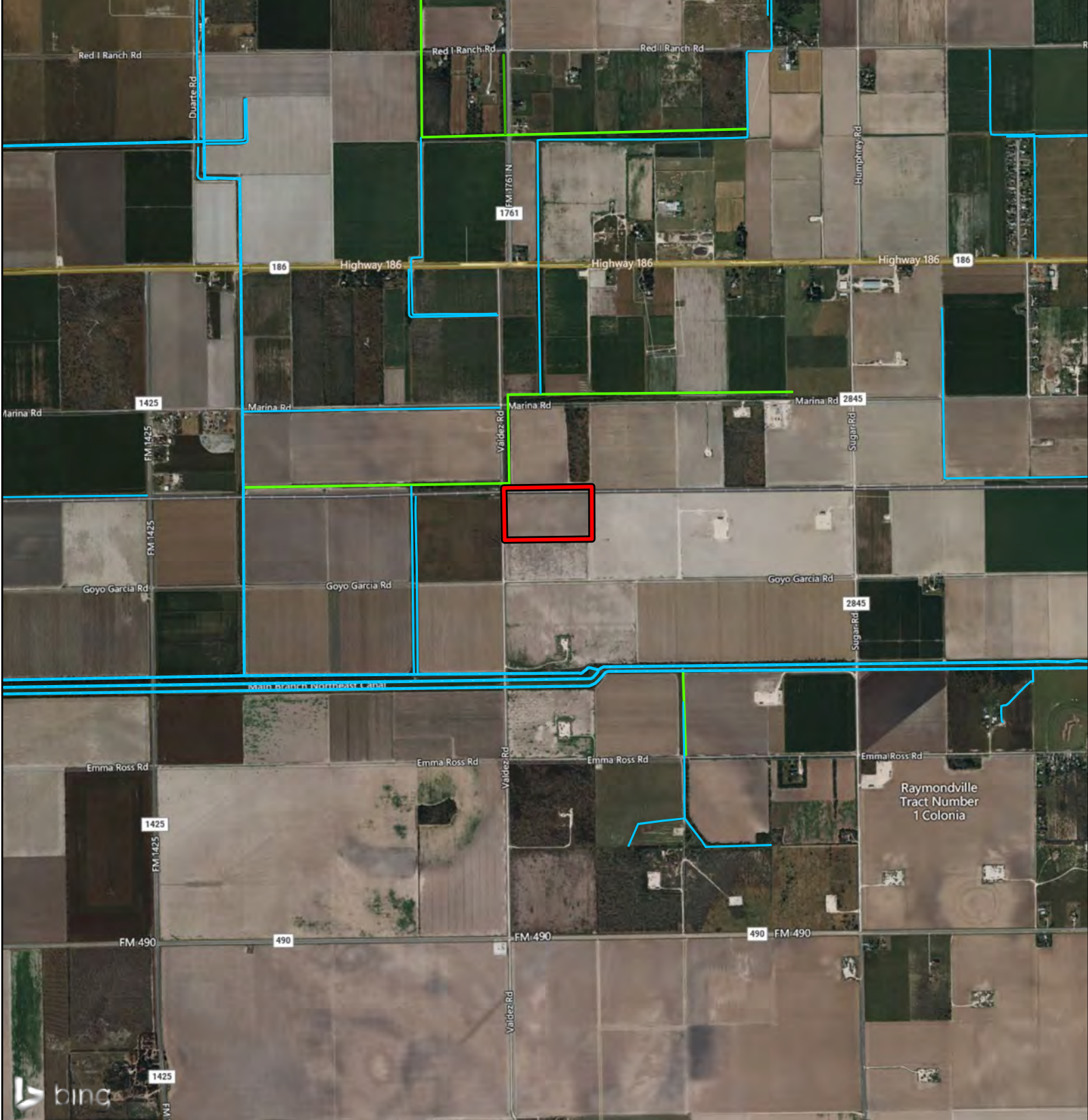
Magic Valley Solar Arrays
City of Harlingen
Cameron County, Texas

-  Survey Area
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Riverine

1 in = 2,000 ft

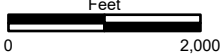



File Ref. 04.407.001
Date: 11/15/2023



**Figure 9D.
NWI Map**

Magic Valley Solar Arrays
City of Raymondville
Willacy County, Texas

1 in = 2,000 ft 



File Ref. 04.407.001
Date: 11/15/2023






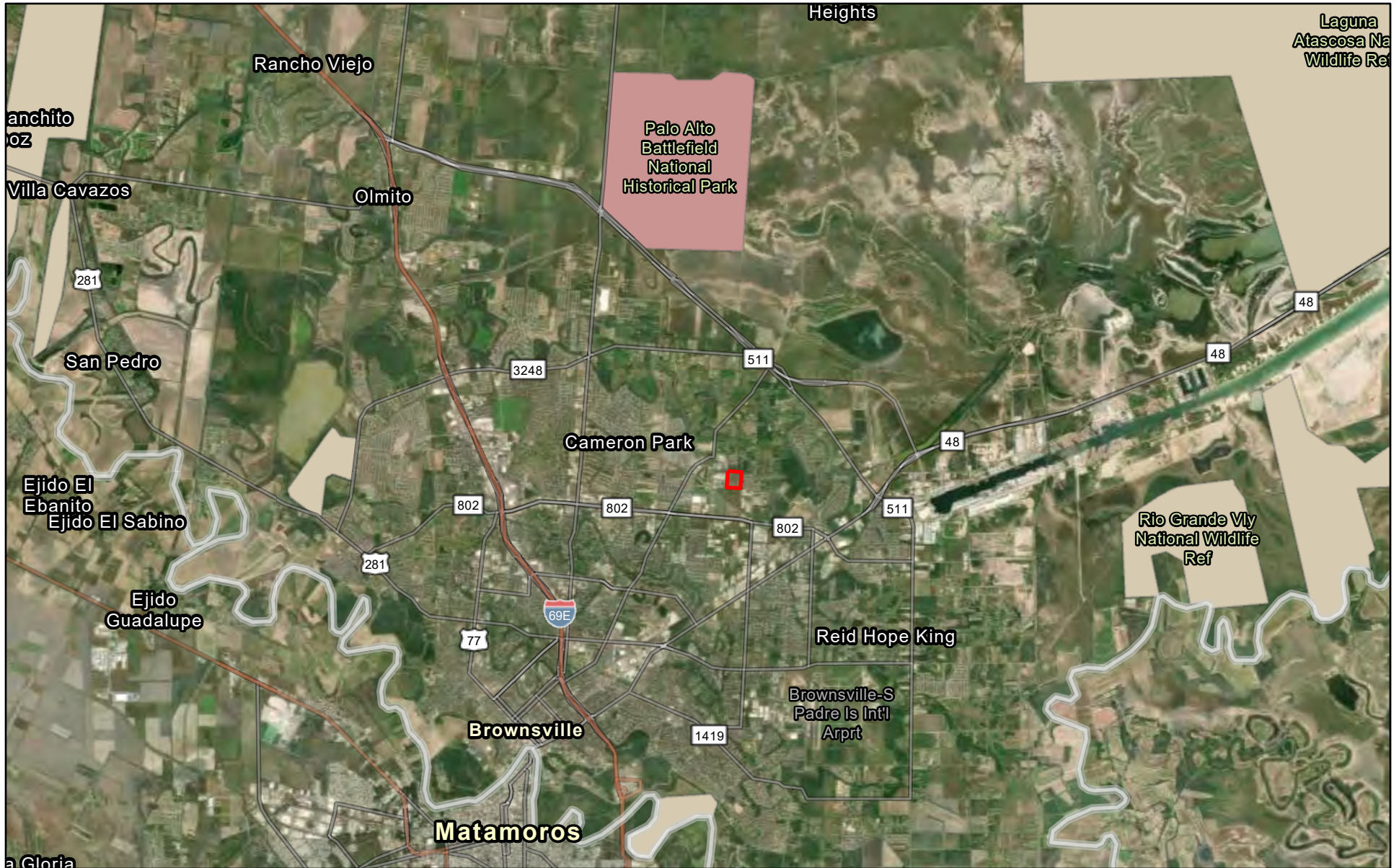
-  Survey Area
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Riverine

Figure 10A. Brownsville Federal Lands



November 14, 2023

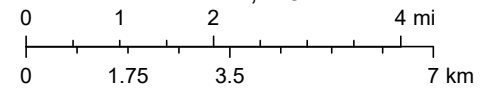
— Brownsville Survey Area

Federal Lands

■ NPS

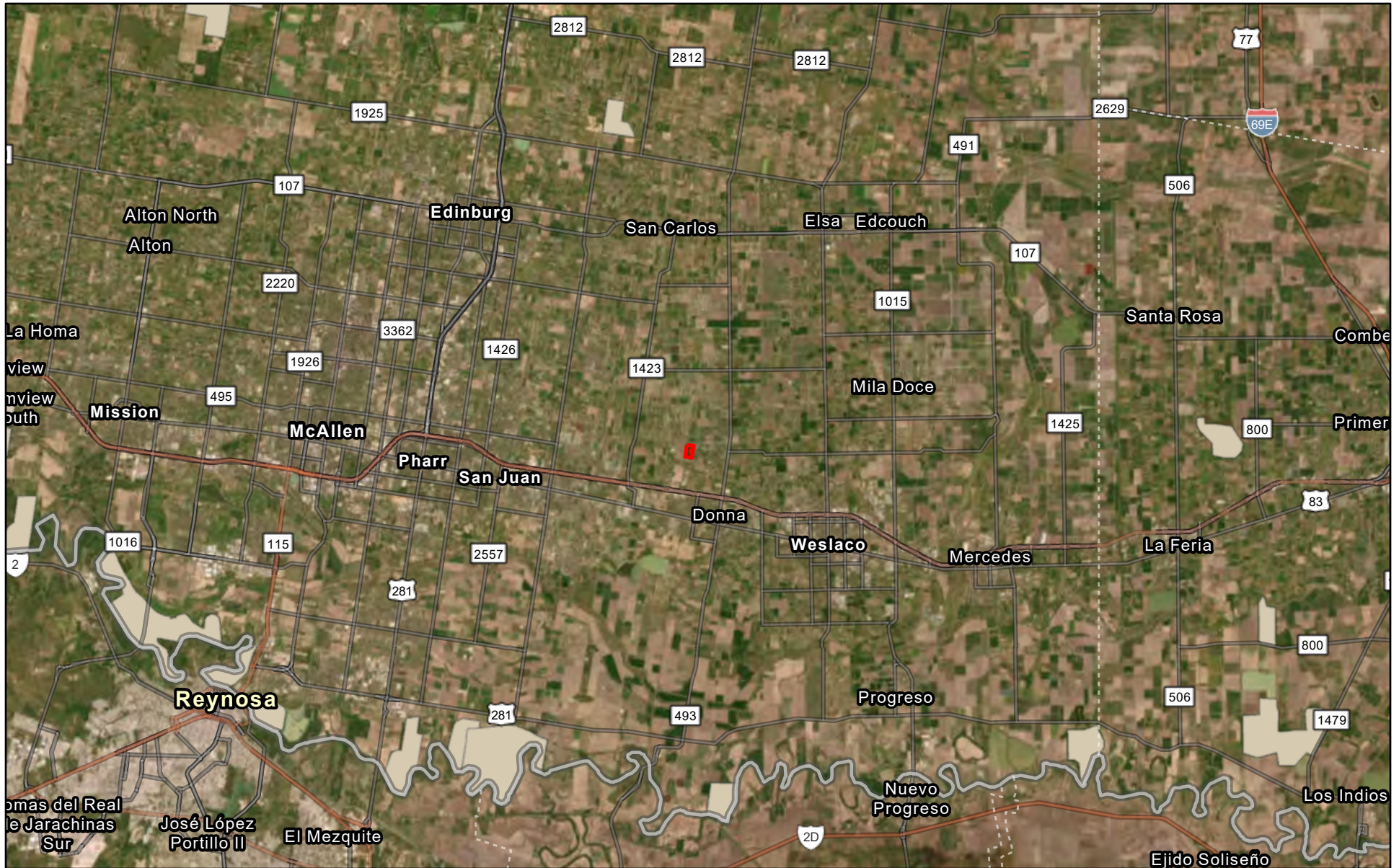
■ FWS

1:144,448




Earthstar Geographics, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,

Figure 10B. Donna Federal Lands

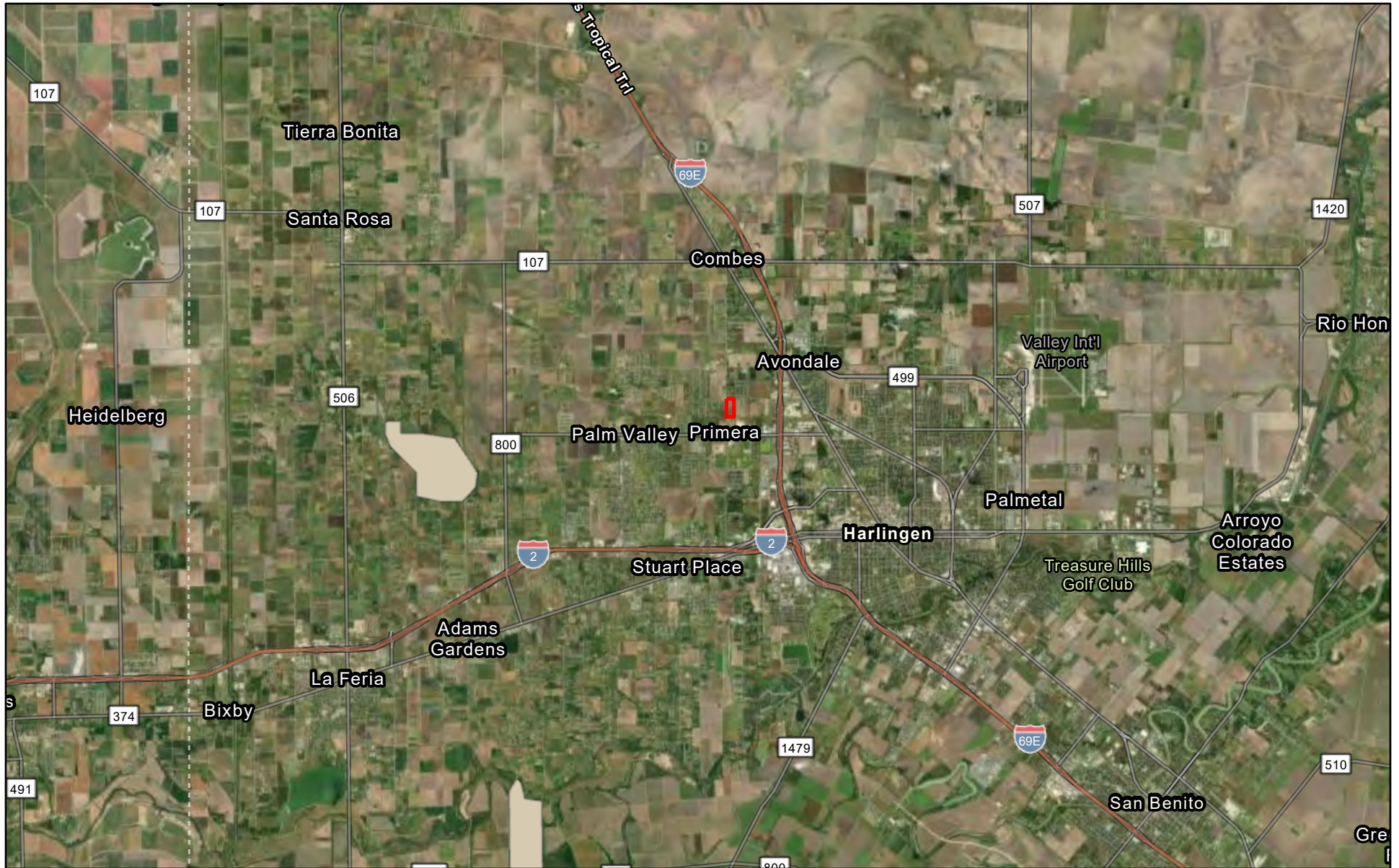


November 14, 2023



 Donna Survey Area  Federal Lands
 FWS

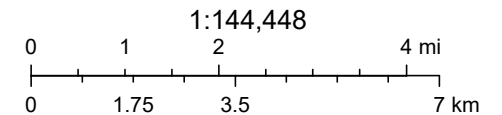
1:288,895
0 2.25 4.5 9 mi
0 3.5 7 14 km
Earthstar Geographics, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, Foursquare, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA,

Figure 10C. Harlingen Federal Lands



November 14, 2023

 Harlingen Survey Area  Federal Lands
FWS



Earthstar Geographics, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,

Figure 10D. Raymondville Federal Lands

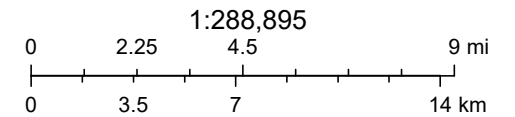


November 14, 2023

— Raymondville Survey Area

Federal Lands

■ FWS



Earthstar Geographics, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, Foursquare, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA,

ATTACHMENT B
Representative Photographs





Photograph Location Map

Magic Valley Solar Arrays
 City of Brownsville
 Cameron County, Texas



File Ref. 04.407.001
 Date: 3/30/2023

-  Survey Area
-  Photograph Location



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



Photograph 16



Photograph 17



Photograph 18



Photograph 19



Photograph 20



Photograph 21



Photograph 22



Photograph 23





Photograph 24



Photograph Location Map

Magic Valley Solar Arrays
City of Donna
Harlingen County, Texas

-  Survey Area
-  Photograph Location



File Ref. 04.407.001
Date: 3/30/2023



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



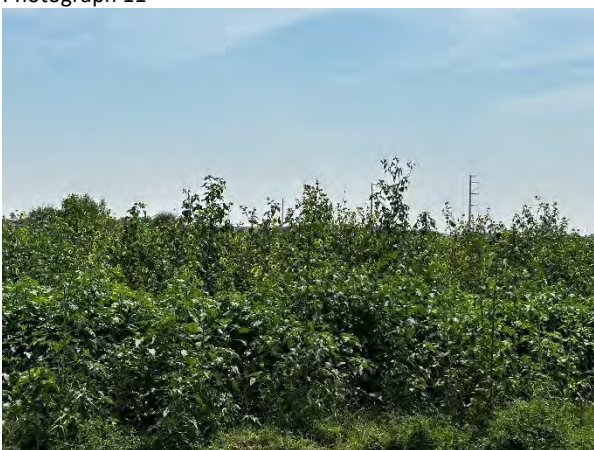
Photograph 10



Photograph 11



Photograph 12



Photograph 13



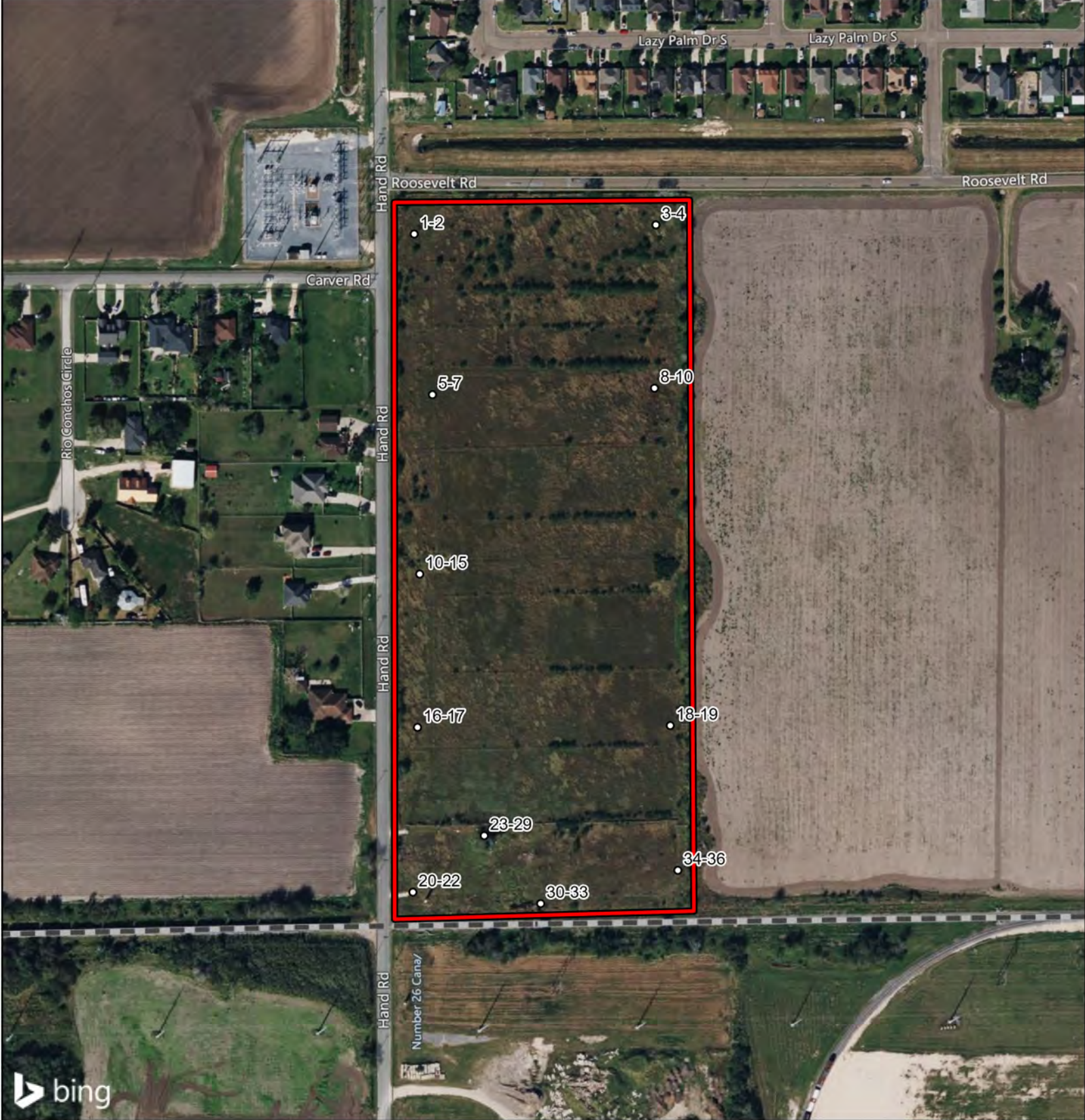
Photograph 14



Photograph 15



Photograph 16



Photograph Location Map

Magic Valley Solar Arrays
 City of Harlingen
 Cameron County, Texas

- Survey Area
- Photograph Location



File Ref. 04.407.001
 Date: 3/30/2023



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



Photograph 16



Photograph 17



Photograph 18



Photograph 19



Photograph 20



Photograph 21



Photograph 22



Photograph 23



Photograph 24



Photograph 25



Photograph 26



Photograph 27



Photograph 28



Photograph 29



Photograph 30



Photograph 31



Photograph 32



Photograph 33



Photograph 34



Photograph 35



Photograph 36





Photograph Location Map

Magic Valley Solar Arrays
City of Raymondville
Willacy County, Texas



File Ref. 04.407.001
Date: 3/30/2023

-  Survey Area
-  Photograph Location



Photograph 1



Photograph 2



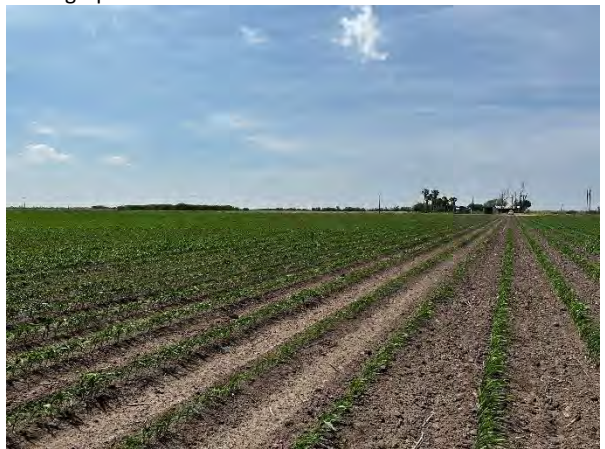
Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



Photograph 16



Photograph 17



Photograph 18



Photograph 19



Photograph 20



Photograph 21



Photograph 22

ATTACHMENT D
Protected Species Lists



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Texas Coastal Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
Phone: (281) 286-8282 Fax: (281) 488-5882

In Reply Refer To:
Project Code: 2023-0118848
Project Name: RGV Solar- Brownsville

August 18, 2023

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

To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Corpus Christi, and Alamo, Texas, have combined administratively to form the Texas Coastal Ecological Services Field Office. All project related correspondence should be sent to the field office address listed below responsible for the county in which your project occurs:

Project Leader; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058

Angelina, Austin, Brazoria, Brazos, Chambers, Colorado, Fayette, Fort Bend, Freestone, Galveston, Grimes, Hardin, Harris, Houston, Jasper, Jefferson, Leon, Liberty, Limestone, Madison, Matagorda, Montgomery, Newton, Orange, Polk, Robertson, Sabine, San Augustine, San Jacinto, Trinity, Tyler, Walker, Waller, and Wharton.

Assistant Field Supervisor, U.S. Fish and Wildlife Service; 4444 Corona Drive, Ste 215; Corpus Christi, Texas 78411

Aransas, Atascosa, Bee, Brooks, Calhoun, De Witt, Dimmit, Duval, Frio, Goliad, Gonzales, Hidalgo, Jackson, Jim Hogg, Jim Wells, Karnes, Kenedy, Kleberg, La Salle, Lavaca, Live Oak, Maverick, McMullen, Nueces, Refugio, San Patricio, Victoria, and Wilson.

U.S. Fish and Wildlife Service; Santa Ana National Wildlife Refuge; Attn: Texas Ecological Services Sub-Office; 3325 Green Jay Road, Alamo, Texas 78516

Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata.

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

amended (16 U.S.C. 1531 *et seq.*).

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

Non-Federal entities may consult under Sections 9 and 10 of the Act. Section 9 and Federal regulations prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR § 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR § 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Should the proposed project

have the potential to take listed species, the Service recommends that the applicant develop a Habitat Conservation Plan and obtain a section 10(a)(1)(B) permit. The Habitat Conservation Planning Handbook is available at: <https://www.fws.gov/library/collections/habitat-conservation-planning-handbook>.

Migratory Birds:

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

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

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat.

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

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether

any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Texas Coastal Ecological Services Field Office

17629 El Camino Real, Suite 211

Houston, TX 77058-3051

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PROJECT SUMMARY

Project Code: 2023-0118848
Project Name: RGV Solar- Brownsville
Project Type: Power Gen - Solar
Project Description: Solar arrays
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@25.9558549,-97.44932673462434,14z>



Counties: Cameron County, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 16 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gulf Coast Jaguarundi <i>Puma yagouaroundi cacomitli</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3945	Endangered
Ocelot <i>Leopardus (=Felis) pardalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4474	Endangered

BIRDS

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Northern Aplomado Falcon <i>Falco femoralis septentrionalis</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Endangered
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

REPTILES

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: North Atlantic DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Kemp's Ridley Sea Turtle <i>Lepidochelys kempii</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/5523	Endangered
Leatherback Sea Turtle <i>Dermochelys coriacea</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle <i>Caretta caretta</i> Population: Northwest Atlantic Ocean DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

CLAMS

NAME	STATUS
Mexican Fawnsfoot <i>Truncilla cognata</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/7870	Proposed Endangered
Salina Mucket <i>Potamilus metnecktayi</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/8753	Proposed Endangered

INSECTS

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

FLOWERING PLANTS

NAME	STATUS
South Texas Ambrosia <i>Ambrosia cheiranthifolia</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3331	Endangered
Texas Ayenia <i>Ayenia limitaris</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4942	Endangered

CRITICAL HABITATS

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

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

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)
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The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
American Oystercatcher <i>Haematopus palliatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Black Skimmer <i>Rynchops niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Dickcissel <i>Spiza americana</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 5 to Aug 31
Gull-billed Tern <i>Gelochelidon nilotica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Hudsonian Godwit <i>Limosa haemastica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

NAME	BREEDING SEASON
<p>King Rail <i>Rallus elegans</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936</p>	Breeds May 1 to Sep 5
<p>Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5511</p>	Breeds elsewhere
<p>Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481</p>	Breeds elsewhere
<p>Painted Bunting <i>Passerina ciris</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Apr 25 to Aug 15
<p>Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 1 to Jul 31
<p>Reddish Egret <i>Egretta rufescens</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7617</p>	Breeds Mar 1 to Sep 15
<p>Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Sandwich Tern <i>Thalasseus sandvicensis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Apr 25 to Aug 31
<p>Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480</p>	Breeds elsewhere
<p>Sprague's Pipit <i>Anthus spragueii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8964</p>	Breeds elsewhere

NAME	BREEDING SEASON
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wilson's Plover <i>Charadrius wilsonia</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Aug 20

PROBABILITY OF PRESENCE SUMMARY

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

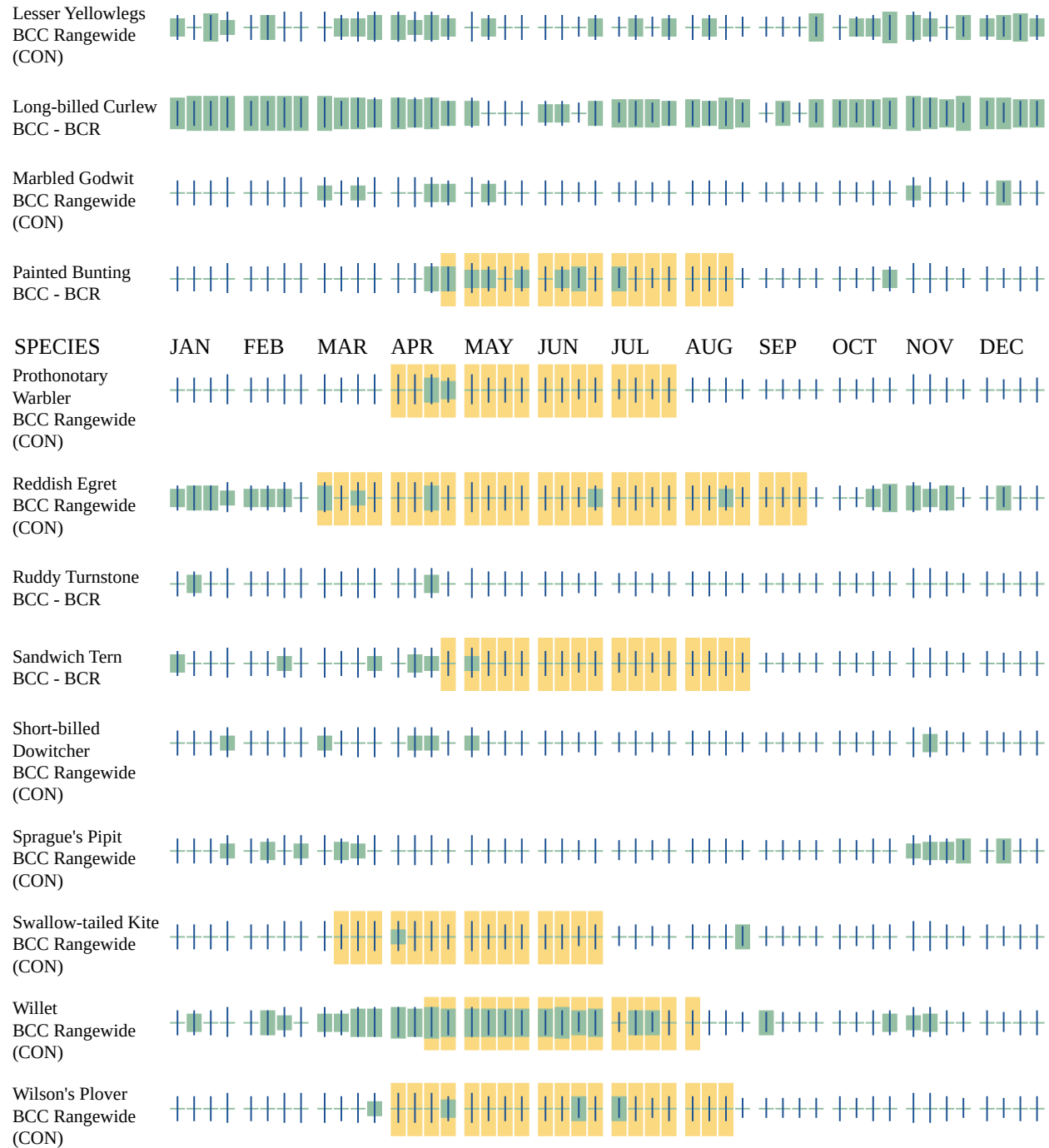
Probability of Presence (■)

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

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

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

Breeding Season (■)



Additional information can be found using the following links:

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

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point

within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no

data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPAC USER CONTACT INFORMATION

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Last Update: 1/4/2023

CAMERON COUNTY

AMPHIBIANS

black-spotted newt

Notophthalmus meridionalis

Terrestrial and aquatic: Terrestrial habitats used by adults are typically poorly drained clay soils that allow for the formation of ephemeral wetlands. A wide variety of vegetation associations are known to be used, such as thorn scrub and pasture. Aquatic habitats used for reproduction are a variety of ephemeral and permanent water bodies.

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

Mexican treefrog

Smilisca baudinii

Terrestrial and aquatic: Terrestrial habitats used include forested and brush around water bodies. Aquatic habitats used can any any body of water but preferred breeding sites are small, ephemeral wetlands.

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

sheep frog

Hypopachus variolosus

Terrestrial and aquatic: Predominantly grassland and savanna; largely fossorial in areas with moist microclimates.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S4

South Texas siren (Large Form)

Siren sp. 1

Aquatic: Mainly found in bodies of quiet water, permanent or temporary, with or without submergent vegetation. Wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain.

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

Strecker's chorus frog

Pseudacris streckeri

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

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

white-lipped frog

Leptodactylus fragilis

Terrestrial and aquatic: Lowlands, grasslands, cultivated fields, roadside ditches, and a wide variety of other habitats; often hides under rocks or in burrows under clumps of grass.

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

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CAMERON COUNTY

AMPHIBIANS

Woodhouse's toad *Anaxyrus woodhousii*

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

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

BIRDS

black rail *Laterallus jamaicensis*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia

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

black skimmer *Rynchops niger*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B

Botteri's sparrow *Peucaea botterii*

Two allopatric subspecies occur in Texas. The arizonae subspecies found in the Trans Pecos is considered to be a vagrant because there is just one record from Presidio County in 1997. The other subspecies, texana, can be found regularly in sacahuista habitat (or cordgrass flats) in counties that along the lower coastline like Kenedy, Willacy, and Cameron counties, but also rarely in Kleberg and Brooks counties. This migratory species does not overwinter in Texas. Breeding birds return in spring and sit fairly visibly on (low) commanding perches like fence posts or mesquite limbs where males sing vigorously throughout summer.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

common black-hawk *Buteogallus anthracinus*

Cottonwood-lined rivers and streams; willow tree groves on the lower Rio Grande floodplain; formerly bred in south Texas

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S2B

Franklin's gull *Leucophaeus pipixcan*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

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

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CAMERON COUNTY

BIRDS

gray hawk

Buteo plagiatus

Locally and irregularly along U.S.-Mexico border; mature riparian woodlands and nearby semiarid mesquite and scrub grasslands; breeding range formerly extended north to southernmost Rio Grande floodplain of Texas

Federal Status:

State Status: T

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S2B

lark bunting

Calamospiza melanocorys

Overall, it's a generalist in most short grassland settings including ones with some brushy component plus certain agricultural lands that include grain sorghum. Short grasses include sideoats and blue gramas, sand dropseed, prairie junegrass (*Koeleria*), buffalograss also with patches of bluestem and other mid-grass species. This bunting will frequent smaller patches of grasses or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. This species avoids urban areas and cotton fields.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S4B

northern aplomado falcon

Falco femoralis septentrionalis

Open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species

Federal Status: LE

State Status: E

SGCN: Y

Endemic: N

Global Rank: G4T2T3

State Rank: S1

northern beardless-tyrannulet

Camptostoma imberbe

Mesquite woodlands; also cottonwood, willow, elm, and tepeguaje near the Rio Grande. Breeding April to July

Federal Status:

State Status: T

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S3B

pipin plover

Charadrius melodus

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

Federal Status: LT

State Status: T

SGCN: Y

Endemic: N

Global Rank: G3

State Rank: S2N

red-crowned parrot

Amazona viridigenalis

DISCLAIMER

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CAMERON COUNTY

BIRDS

Starting in the late 1980s to early 1990s, this species has increased in numbers in urban settings in Cameron and Hidalgo counties. This cavity-nesting species prefers dead palm trees, including non-native Washingtonian palms, with abandoned cavities excavated by Golden-fronted Woodpeckers. Grooming of palms (i.e., trimming the dead, drooping fronds) does not appear to directly impact this species; however removal of dead palms with or without cavities should be avoided.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

reddish egret *Egretta rufescens*

Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S2B

rose-throated becard *Pachyramphus aglaiae*

Riparian corridors; trees, woodlands, open forest, scrub, and mangroves; breeding April to July.

Federal Status:	State Status: T	SGCN: N
Endemic: N	Global Rank: G4G5	State Rank: SNA

rufa red knot *Calidris canutus rufa*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes.

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

sooty tern *Onychoprion fuscatus*

Primarily an offshore bird; does nest on sandy beaches and islands, breeding April-July.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1B

Sprague's pipit *Anthus spragueii*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Habitat during migration and in winter consists of pastures and weedy fields (AOU 1983), including grasslands with dense herbaceous vegetation or grassy agricultural fields.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3N

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CAMERON COUNTY

BIRDS

swallow-tailed kite *Elanoides forficatus*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B

Texas Botteri's sparrow *Peucaea botterii texana*

Grassland and short-grass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground of low clump of grasses

Federal Status:	State Status: T	SGCN: N
Endemic: N	Global Rank: G4T4	State Rank: S3B

tropical parula *Setophaga pitiayumi*

Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.

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

western burrowing owl *Athene cunicularia hypugaea*

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

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

white-faced ibis *Plegadis chihi*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

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

white-tailed hawk *Buteo albicaudatus*

Near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S4B

wood stork *Mycteria americana*

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CAMERON COUNTY

BIRDS

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers to nest in large tracts of baldcypress (*Taxodium distichum*) or red mangrove (*Rhizophora mangle*); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.

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

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

FISH

alligator gar *Atractosteus spatula*

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.

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

american eel *Anguilla rostrata*

Originally found in all river systems from the Red River to the Rio Grande. Aquatic habitats include large rivers, streams, tributaries, coastal watersheds, estuaries, bays, and oceans. Spawns in Sargasso Sea, larva move to coastal waters, metamorphose, and begin upstream movements. Females tend to move further upstream than males (who are often found in brackish estuaries). American Eel are habitat generalists and may be found in a broad range of habitat conditions including slow- and fast-flowing waters over many substrate types. Extirpation in upstream drainages attributed to reservoirs that impede upstream migration.

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

Mexican goby *Ctenogobius claytonii*

Southern coastal area; brackish and freshwater coastal streams; tidal freshwater associated with silty sandbars and grass beds.

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

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CAMERON COUNTY

FISH

oceanic whitetip shark *Carcharhinus longimanus*

Habitat description is not available at this time.

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

opossum pipefish *Microphis brachyurus*

Adults are only found in low salinity waters of estuaries or freshwater tributaries within 30 miles of the coast (Gilmore 1992), where they also give birth. Young move or are carried into more saline waters off the coast after birth. Newly released larvae must have conditions near 18 ppt salinity for at least two weeks after birth to survive, indicating a physiology adapted for downstream transport to estuarine and marine environments (Frias-Torres 2002). Juvenile migration toward the ocean depends on water flow regimes, salinity, and vegetation for cover and capturing prey (Frias-Torres 2002). Seawalls, docks, and riprap construction destroy habitat and poor water quality and alteration of flow regimes may prevent migration (NMFS 2009).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S3N

Rio Grande shiner *Notropis jemezanus*

Rio Grande drainage. Occurs over substrate of rubble, gravel and sand, often overlain with silt

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1

river goby *Awaous banana*

Formerly occupied the mainstream of the Rio Grande in Texas (northern most portion of their range). Generally occupies clear, well oxygenated streams and rivers with slow to moderate current (dependent on flowing water), sandy, muddy, or hard bottom, and little or no vegetation; also enters brackish and marine waters. Shaded areas of streams/rivers may be preferred. Spawning takes place in freshwater and eggs drift downstream to brackish or salt water where they hatch. Larvae migrate back into streams as they develop, but have a higher salinity tolerance than adults. Feeds mainly on filamentous algae.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1

shortfin mako shark *Isurus oxyrinchus*

Habitat description is not available at this time.

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

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CAMERON COUNTY

FISH

smalltooth sawfish

Pristis pectinata

Different life history stages have different patterns of habitat use: young of year, Age 1, and Age 2 are dependent upon shallow (<1m), euraquatic waters with red mangrove lined shoreline (Norton et al. 2012). These age classes are often found very close to shore over muddy and sandy bottoms in sheltered bays, on shallow banks, and in estuaries or river mouths. These age classes can tolerate a wide range of salinities, but will move in and out of protected areas (estuaries) due to changes in flow and salinity (Poulakis and Seitz 2011). Larger juveniles may occupy greater depth strata in areas further from shore as they consistently occupy marine waters. Adult sawfish are encountered in various habitat types (mangrove, oyster reef, seagrass, and coral), in varying salinity regimes and temperatures, and at various water depths, feed on a variety of fish species. Adult female sawfish return to protected estuarine areas to give birth.

Federal Status: LE

State Status: E

SGCN: Y

Endemic: N

Global Rank: G1G3

State Rank: SNR

snook

Centropomus undecimalis

Juvenile common snook are generally restricted to the protection of riverine, salt marshes, seagrass beds, and estuary environments. These environments offer shallow water and an overhanging vegetative shoreline. Juvenile common snook can survive in waters with lower oxygen levels than adults. Adult common snook inhabit many fresh, estuarine, and marine environments including mangrove forests, beaches, river mouths, nearshore reefs, salt marshes, sea grass meadows, and near structure (pilings, artificial reefs, etc.). Adult common snook appear to be less sensitive to cold water temperatures than larvae or small juveniles. The lower lethal limit of water temperature is 48.2°-57.2° F (9°-14° C) for juveniles and 42.8°-53.6° F (6°-12° C) for adults (Hill 2005, Press 2010).

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S3?

southern flounder

Paralichthys lethostigma

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.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S5

INSECTS

American bumblebee

Bombus pensylvanicus

Habitat description is not available at this time.

Federal Status:

State Status:

SGCN: Y

Endemic:

Global Rank: G3G4

State Rank: SNR

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CAMERON COUNTY

INSECTS

Boca Chica flea beetle *Chaetocnema rileyi*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: GNR State Rank: S3

Brownsville meadow katydid *Conocephalus resacensis*

Habitat description is not available at this time.

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

gladiator short-winged katydid *Dichopetala gladiator*

Habitat description is not available at this time.

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

Manfreda giant-skipper *Stallingsia maculosus*

Most skippers are small and stout-bodied; name derives from fast, erratic flight; at rest most skippers hold front and hind wings at different angles; skipper larvae are smooth, with the head and neck constricted; skipper larvae usually feed inside a leaf shelter and pupate in a cocoon made of leaves fastened together with silk

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G1 State Rank: S1

neojuvenile tiger beetle *Cicindela obsoleta neojuvenilis*

Bare or sparsely vegetated, dry, hard-packed soil; typically in previously disturbed areas; peak adult activity in Jul

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G5T1 State Rank: SH

No accepted common name *Dichopetala catinata*

Habitat description is not available at this time.

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

No accepted common name *Heliastus subroseus*

Sand dunes with sparse vegetation in back of the beach along the Texas coast.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2?

No accepted common name *Cisthene conjuncta*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

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CAMERON COUNTY

INSECTS

Endemic: Global Rank: G1Q State Rank: S1

No accepted common name *Sphingicampa blanchardi*

Woodland - hardwood; Tamaulipan thornscrub with caterpillars host plant, Texas Ebony (*Pitheocellobium flexicaule*) an important element

Federal Status: State Status: SGCN: Y

Endemic: P Global Rank: G1 State Rank: S1

No accepted common name *Pachyschelus fisheri*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: GNR State Rank: S1

No accepted common name *Disonycha barberi*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Disonycha stenosticha*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Conotrachelus rubescens*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Ptinus tumidus*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Trichodesma pulchella*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: S1

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CAMERON COUNTY

INSECTS

No accepted common name	<i>Trichodesma sordida</i>		
Habitat description is not available at this time.			
Federal Status:	State Status:	SGCN:	Y
Endemic:	Global Rank: GNR	State Rank:	SNR
No accepted common name	<i>Ormiscus albofasciatus</i>		
Habitat description is not available at this time.			
Federal Status:	State Status:	SGCN:	Y
Endemic:	Global Rank: GNR	State Rank:	S2
No accepted common name	<i>Ormiscus irroratus</i>		
Habitat description is not available at this time.			
Federal Status:	State Status:	SGCN:	Y
Endemic:	Global Rank: GNR	State Rank:	S1
No accepted common name	<i>Trigonogya reticulaticollis</i>		
Habitat description is not available at this time.			
Federal Status:	State Status:	SGCN:	Y
Endemic: Y	Global Rank: GNR	State Rank:	S1
No accepted common name	<i>Chalcodermus semicostatus</i>		
Habitat description is not available at this time.			
Federal Status:	State Status:	SGCN:	Y
Endemic:	Global Rank: GNR	State Rank:	SNR
No accepted common name	<i>Platyomus flexicaulis</i>		
Habitat description is not available at this time.			
Federal Status:	State Status:	SGCN:	Y
Endemic:	Global Rank: GNR	State Rank:	SNR
No accepted common name	<i>Hyperaspis rotunda</i>		
Habitat description is not available at this time.			
Federal Status:	State Status:	SGCN:	Y
Endemic:	Global Rank: GNR	State Rank:	SNR

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CAMERON COUNTY

INSECTS

No accepted common name *Cenophengus pallidus*

Habitat description is not available at this time.

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

No accepted common name *Lachnodactyla texana*

Habitat description is not available at this time.

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

No accepted common name *Dacoderus steineri*

Habitat description is not available at this time.

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

No accepted common name *Diomus pseudotaedatus*

Habitat description is not available at this time.

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

No accepted common name *Talanus mecoscelis*

Habitat description is not available at this time.

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

No accepted common name *Loberus ornatus*

Habitat description is not available at this time.

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

No accepted common name *Toramus chamaeropsis*

Habitat description is not available at this time.

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

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CAMERON COUNTY

INSECTS

No accepted common name *Heterobrenthus texanus*

Habitat description is not available at this time.

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

No accepted common name *Cacostola lineata*

Habitat description is not available at this time.

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

No accepted common name *Callipogonius cornutus*

Habitat description is not available at this time.

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

No accepted common name *Brucita marmorata*

Habitat description is not available at this time.

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

No accepted common name *Megascelis texana*

Habitat description is not available at this time.

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

No accepted common name *Pachybrachis duryi*

Habitat description is not available at this time.

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

No accepted common name *Perdita tricineta*

Habitat description is not available at this time.

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

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CAMERON COUNTY

INSECTS

No accepted common name *Spectralia prosternalis*

Habitat description is not available at this time.

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

subtropical black sky tiger beetle *Cicindela nigrocoerulea subtropica*

Most tiger beetles are active, usually brightly colored, and found in open, sunny areas; adult tiger beetles are predaceous and feed on a variety of small insects; larvae of tiger beetles are also predaceous and live in vertical burrows in soil of dry paths, fields, or sandy beaches

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G5T2	State Rank: SH

Tamaulipan agapema *Agapema galbina*

Tamaulipan thornscrub with adequate densities of the caterpillar foodplant *Condalia hookeri hookeri* (= *obovata*); adults occur Sep - Oct; eggs hatch within two weeks and larvae mature rapidly

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1	State Rank: SH

Tamaulipan clubtail dragonfly *Gomphus gonzalezi*

Rivers, muddy to clear and rocky, should be watched for in substantial creeks as well. This species is considered rare and has a very restricted range in the Rio Grande Valley and southward in eastern Mexico. Abundance information is lacking (Ware et al 2016; Abbott 2005).

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G2	State Rank: S2

thumb-bearing short-winged katydid *Dichopetala pollicifera*

Habitat description is not available at this time.

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

MAMMALS

barrier island Texas pocket gopher *Geomys personatus personatus*

Limited information available. Likely found in sandy soils.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G4TNR	State Rank: SNR

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CAMERON COUNTY

MAMMALS

blue whale *Balaenoptera musculus*

Inhabits tropical, subtropical, temperate, and subpolar waters worldwide, but are infrequently sighted in the Gulf of Mexico. They migrate seasonally between summer feeding grounds and winter breeding grounds, but specifics vary. Commonly observed at the surface in open ocean.

Federal Status: LE State Status: E SGCN: Y
Endemic: N Global Rank: G3G4 State Rank: SH

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) 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.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S2S3

Coues' rice rat *Oryzomys couesi aquaticus*

Cattail-bulrush marsh with shallower zone of aquatic grasses near the shoreline; shade trees around the shoreline are important features; prefers salt and freshwater, as well as grassy areas near water; breeds April-August

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5T2T4 State Rank: S2

eastern red bat *Lasiurus borealis*

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

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

eastern spotted skunk *Spilogale putorius*

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

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

Gulf of Mexico Bryde's whale *Balaenoptera ricei*

Habitat description is not available at this time.

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

hoary bat *Lasiurus cinereus*

DISCLAIMER

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CAMERON COUNTY

MAMMALS

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

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

humpback whale *Megaptera novaeangliae*

Inhabits tropical, subtropical, temperate, and subpolar waters world wide. Migrate up to 5,000 miles between colder water (feeding grounds) and warmer water (calving grounds) each year. They will use both open ocean and coastal waters, sometimes including inshore areas such as bays, and are often found near the surface; however, this species is rare in the Gulf of Mexico. The northwest Atlantic/Gulf of Mexico distinct population segment is not considered at risk of extinction and is not listed as Endangered on the Endangered Species Act.

Federal Status: LE	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SNR

long-tailed weasel *Mustela frenata*

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

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

mountain lion *Puma concolor*

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

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

North Atlantic right whale *Eubalaena glacialis*

Inhabits subtropical and temperate waters in the northern Atlantic. Commonly found in coastal waters or close to the continental shelf near the surface. They migrate from feeding grounds in cooler waters (Canada and New England) to warmer waters of the southeast US (South Carolina, Georgia, and Florida) to give birth in the fall/winter - both areas are identified as critical habitat by NOAA-NMFS. Nursery areas are in shallow, coastal waters. This species is very rare in the Gulf of Mexico and the few reported sightings are likely vagrants (Ward-Geiger et al 2011).

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

northern yellow bat *Lasiurus intermedius*

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.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

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CAMERON COUNTY

MAMMALS

ocelot

Leopardus pardalis

Restricted to mesquite-thorn scrub and live-oak mottes; avoids open areas. Dense mixed brush below four feet; thorny shrublands; dense chaparral thickets; breeds and raises young June-November.

Federal Status: LE

State Status: E

SGCN: Y

Endemic: N

Global Rank: G4

State Rank: S1

sei whale

Balaenoptera borealis

Habitat description is not available at this time.

Federal Status: LE

State Status: E

SGCN: N

Endemic: N

Global Rank: G5?

State Rank: SNR

southern yellow bat

Lasiurus ega

Relict palm grove is only known Texas habitat. Neotropical species roosting in palms, forages over water; insectivorous; breeding in late winter. Roosts in dead palm fronds in ornamental palms in urban areas.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S3S4

sperm whale

Physeter macrocephalus

Inhabits tropical, subtropical, and temperate waters world wide, avoiding icy waters. Distribution is highly dependent on their food source (squids, sharks, skates, and fish), breeding, and composition of the pod. In general, this species migrates from north to south in the winter and south to north in the summer; however, individuals in tropical and temperate waters don't seem to migrate at all. Routinely dive to catch their prey (2,000-10,000 feet) and generally occupies water at least 3,300 feet deep near ocean trenches.

Federal Status: LE

State Status: E

SGCN: Y

Endemic: N

Global Rank: G3G4

State Rank: S1

tricolored bat

Perimyotis subflavus

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

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G3G4

State Rank: S2

West Indian manatee

Trichechus manatus

Large rivers, brackish water bays, coastal waters. Warm waters of the tropics, in rivers and brackish bays but may also survive in salt water habitats. Very sensitive to cold water temperatures. Rarely occurring as far north as Texas. Gulf and bay system; opportunistic, aquatic herbivore.

Federal Status: LT

State Status: T

SGCN: Y

Endemic: N

Global Rank: G2G3

State Rank: S1

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CAMERON COUNTY

MAMMALS

western hog-nosed skunk *Conepatus leuconotus*

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

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

white-nosed coati *Nasua narica*

Woodlands, riparian corridors and canyons. Most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1

MOLLUSKS

Mexican fawnsfoot *Truncilla cognata*

Occurs in large rivers but may also be found in medium-sized streams. Is commonly found in habitats with some flowing water, often in protected near shore areas such as banks and backwaters but also at the head of riffles; the latter more often supporting both sub-adults and adults. Typically occurs in substrates of mixed sand and gravel as well as soft unconsolidated sediments. Considered intolerant of reservoirs (Randklev et al. 2017b; Randklev et al. forthcoming). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

No accepted common name *Praticolella candida*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Salina mucket *Potamilus metnecktayi*

Occurs in medium to large rivers, where it may be found in substrates composed of various combinations of mud, sand, gravel, and cobble, as well as under rocks. It occurs in areas with slow to moderate current, most often in stable littoral habitats dominated by boulder or bedrock habitat; not known from reservoirs (Randklev et al. 2017b; Randklev et al. forthcoming). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

Texas hornshell *Popenaias popeii*

Occurs in small streams to large rivers in slow to moderate current, often residing in rock crevices, travertine shelves, and under large boulders, where small-grained material, such as clay, silt, or sand gathers. Can also occur in riffles that are clean swept of soft silt; not known from reservoirs (Carman 2007; Inoue et al. 2014; Randklev et al. 2017b; Randklev et al. forthcoming). [Mussels of Texas 2019]

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

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CAMERON COUNTY

REPTILES

Atlantic hawksbill sea turtle *Eretmochelys imbricata*

Inhabit tropical and subtropical waters worldwide, in the Gulf of Mexico, especially Texas. Hatchling and juveniles are found in open, pelagic ocean and closely associated with floating algae/seagrass mats. Juveniles then migrate to shallower, coastal areas, mainly coral reefs and rocky areas, but also in bays and estuaries near mangroves when reefs are absent; seldom in water more than 65 feet deep. They feed on sponges, jellyfish, sea urchins, molluscs, and crustaceans. Nesting occurs from April to November high up on the beach where there is vegetation for cover and little or no sand. Some migrate, but others stay close to foraging areas - females are philopatric.

Federal Status: LE State Status: E SGCN: Y
Endemic: N Global Rank: G3 State Rank: S2

black-striped snake *Coniophanes imperialis*

Terrestrial: Occurs in native thorn scrub and woodlands as well as modified urban areas. Prefers warm, moist microhabitats, and sandy soils.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S2S3

eastern box turtle *Terrapene carolina*

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

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

green sea turtle *Chelonia mydas*

Inhabits tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico. Adults and juveniles occupy inshore and nearshore areas, including bays and lagoons with reefs and seagrass. They migrate from feeding grounds (open ocean) to nesting grounds (beaches/barrier islands) and some nesting does occur in Texas (April to September). Adults are herbivorous feeding on sea grass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on sea grasses and seaweeds.

Federal Status: LT State Status: T SGCN: Y
Endemic: N Global Rank: G3 State Rank: S3B,S3N

Kemp's Ridley sea turtle *Lepidochelys kempii*

Inhabits tropical, subtropical, and temperate waters of the northwestern Atlantic Ocean and Gulf of Mexico. Adults are found in coastal waters with muddy or sandy bottoms. Some males migrate between feeding grounds and breeding grounds, but some don't. Females migrate between feeding and nesting areas, often returning to the same destinations. Nesting in Texas occurs on a smaller scale compared to other areas (i.e. Mexico). Hatchlings are quickly swept out to open water and are rarely found nearshore. Similarly, juveniles often congregate near floating algae/seagrass mats offshore, and move into nearshore, coastal, neritic areas after 1-2 years and remain until they reach maturity. They feed primarily on crabs, but also snails, clams, other crustaceans and plants, juveniles feed on sargassum and its associated fauna; nests April through August.

Federal Status: LE State Status: E SGCN: Y
Endemic: N Global Rank: G1 State Rank: S3

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CAMERON COUNTY

REPTILES

leatherback sea turtle *Dermochelys coriacea*

Inhabit tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico. Nesting is not common in Texas (March to July). Most pelagic of the seaturtles with the longest migration (>10,000 miles) between nesting and foraging sites. Are able to dive to depths of 4,000 feet. They are omnivorous, showing a preference for jellyfish.

Federal Status: LE State Status: E SGCN: Y
Endemic: N Global Rank: G2 State Rank: S1S2

loggerhead sea turtle *Caretta caretta*

Inhabits tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico. They migrate from feeding grounds to nesting beaches/barrier islands and some nesting does occur in Texas (April to September). Beaches that are narrow, steeply sloped, with coarse-grain sand are preferred for nesting. Newly hatched individuals depend on floating algae/seaweed for protection and foraging, which eventually transport them offshore and into open ocean. Juveniles and young adults spend their lives in open ocean, offshore before migrating to coastal areas to breed and nest. Foraging areas for adults include shallow continental shelf waters.

Federal Status: LT State Status: T SGCN: Y
Endemic: N Global Rank: G3 State Rank: S4

Mexican hog-nosed snake *Heterodon kennerlyi*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: N
Endemic: Global Rank: G4 State Rank: SNR

northern cat-eyed snake *Leptodeira septentrionalis septentrionalis*

Terrestrial: Thorn scrub and deciduous woodland; dense thickets bordering ponds and streams.

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

Rio Grande river cooter *Pseudemys gorzugi*

Aquatic: Habitat includes rivers and their more permanent spring-fed tributary streams, beaver ponds, and stock tanks (Garrett and Barker 1987). Occupied waters may have a muddy, sandy, or rocky bottom, and may or may not contain aquatic vegetation (Degenhardt et al. 1996).

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

slender glass lizard *Ophisaurus attenuatus*

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

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

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CAMERON COUNTY

REPTILES

speckled racer

Drymobius margaritiferus

Terrestrial: Dense thickets near water, palm groves, riparian woodlands; often in areas with much vegetation litter on ground.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S1

Texas horned lizard

Phrynosoma cornutum

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

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

Texas indigo snake

Drymarchon melanurus erebennus

Terrestrial: Thornbush-chaparral woodland of south Texas, in particular dense riparian corridors. Can do well in suburban and irrigated croplands. Requires moist microhabitats, such as rodent burrows, for shelter.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5T4 State Rank: S4

Texas tortoise

Gopherus berlandieri

Terrestrial: Open scrub woods, arid brush, lomas, grass-cactus association; often in areas with sandy well-drained soils. When inactive occupies shallow depressions dug at base of bush or cactus; sometimes in underground burrow or under object. Eggs are laid in nests dug in soil near or under bushes.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4 State Rank: S2

western box turtle

Terrapene ornata

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.

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

western hognose snake

Heterodon nasicus

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.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S4

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CAMERON COUNTY

REPTILES

western massasauga *Sistrurus tergeminus*

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.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3

PLANTS

Bailey's ballmoss *Tillandsia baileyi*

Epiphytic on various trees and tall shrubs, perhaps most common in mottes of Live oak on vegetated dunes and flats in coastal portions of the South Texas Sand Sheet, but also on evergreen sub-tropical woodlands along resacas in the Lower Rio Grande Valley; flowering (February-)April-May, but conspicuous throughout the year

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2

Buckley's spiderwort *Tradescantia buckleyi*

Occurs on sandy loam or clay soils in grasslands or shrublands underlain by the Beaumont Formation.

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

dune dalea *Dalea austrotexana*

Restricted to deep loose sands of active and somewhat stabilized dunes in South Texas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Green Island echeandia *Echeandia texensis*

On somewhat saline clays of lomas along the Gulf Coast near the mouth of Rio Grande, a habitat shared with *E. chandleri*; both species grow in areas dominated by herbaceous species with scattered brush and stunted trees, or in grassy openings in subtropical thorn shrublands; flowers April, June, and November, and likely in other months, as well

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Greenman's bluet *Houstonia parviflora*

Grass pastures. Feb- Apr. (Correll and Johnston 1970).

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

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CAMERON COUNTY

PLANTS

Jones's rainlily

Cooperia jonesii

Hardpan swales and other seasonally moist low areas (Jones 1977). Flowering mid summer--early fall (Jul--Oct) (Flagg, Smith & Flory 2002).

Federal Status:

State Status:

SGCN: Y

Endemic: Y

Global Rank: G3Q

State Rank: S3

large selenia

Selenia grandis

Occurs in seasonally wet clayey soils in open areas; Annual; Flowering Jan-April; Fruiting Feb-April

Federal Status:

State Status:

SGCN: Y

Endemic: Y

Global Rank: G3

State Rank: S3

lila de los Llanos

Echeandia chandleri

Most commonly encountered among shrubs or in grassy openings in subtropical thorn shrublands on somewhat saline clays of lomas along Gulf Coast near mouth of Rio Grande; also observed in a few upland coastal prairie remnants on clay soils over the Beaumont Formation at inland sites well to the north and along railroad right-of-ways and cemeteries; flowering (May-) September-December, fruiting October-December

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G2G3

State Rank: S2S3

marsh-elder dodder

Cuscuta attenuata

Parasitizes a particular sumpweed (*Iva annua*) almost exclusively as well as ragweed and heath aster. Host plants typically found in open, disturbed habitats like fallow fields and creek bottomlands; Annual; Flowering late summer through October

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G1G3

State Rank: S2

Mexican mud-plantain

Heteranthera mexicana

Wet clayey soils of resacas and ephemeral wetlands in South Texas and along margins of playas in the Panhandle; flowering June-December, only after sufficient rainfall

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G2G3

State Rank: S1

plains gumweed

Grindelia oolepis

Coastal prairies on heavy clay (blackland) soils, often in depressional areas, sometimes persisting in areas where management (mowing) may maintain or mimic natural prairie disturbance regimes; crawfish lands; on nearly level Victoria clay, Edroy clay, claypan, possibly Greta within Orelia fine sandy loam over the Beaumont Formation, and Harlingen clay; roadsides, railroad rights-of-ways, vacant lots in urban areas, cemeteries; flowering April-December

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G2

State Rank: S2

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CAMERON COUNTY

PLANTS

Runyon's cory cactus *Coryphantha macromeris var. runyonii*

Gravelly to sandy or clayey, calcareous, sometimes gypsiferous or saline soils, often over the Catahoula and Frio formations, on gentle hills and slopes to the flats between, at elevations ranging from 10 to 150 m (30 to 500 ft); ?late spring or early summer, November, fruit has been collected in August

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5T2T3	State Rank: S2S3

Runyon's water-willow *Justicia runyonii*

Margins of and openings within subtropical woodlands or thorn shrublands on calcareous, alluvial, silty or clayey soils derived from Holocene silt and sand floodplain deposits of the Rio Grande Delta; can be common in narrow openings such as those provided by trails through dense ebony woodlands and is sometimes restricted to microdepressions; flowering (July-) September-November

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

Shinner's rocket *Thelypodopsis shinnerii*

Mostly along margins of Tamaulipan thornscrub on clay soils of the Rio Grande Delta, including lomas near the mouth of the river; Tamaulipas, Mexico specimens are from mountains, with no further detail; flowering mostly March-April, with one collection in December

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2

Siler's huaco *Manfreda sileri*

Rare in a variety of grasslands and shrublands on dry sites; Perennial; Flowering April-July; Fruiting June-July

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

Small's rainlily *Zephyranthes smallii*

Open low fields, swales and ditches on sandy loam. Flowering early fall (Sep--Oct) (Flagg, Smith & Flory 2002).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2Q	State Rank: S1

South Texas ambrosia *Ambrosia cheiranthifolia*

Grasslands and mesquite-dominated shrublands on various soils ranging from heavy clays to lighter textured sandy loams, mostly over the Beaumont Formation on the Coastal Plain; in modified unplowed sites such as railroad and highway right-of-ways, cemeteries, mowed fields, erosional areas along small creeks; Perennial; Flowering July-November

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S1

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CAMERON COUNTY

PLANTS

South Texas spikesedge

Eleocharis austrotexana

Occurring in miscellaneous wetlands at scattered locations on the coastal plain; Perennial; Flowering/Fruiting Sept

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

St. Joseph's staff

Manfreda longiflora

Thorn shrublands on clays and loams with various concentrations of salt, caliche, sand, and gravel; rosettes are often obscured by low shrubs; flowering September-October

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

star cactus

Astrophytum asterias

Gravelly clays or loams, possibly of the Catarina Series (deep, droughty, saline clays), over the Catahoula and Frio formations, on gentle slopes and flats in sparsely vegetated openings between shrub thickets within mesquite grasslands or mesquite-blackbrush thorn shrublands; plants sink into or below ground during dry periods; flowering from mid March-May, may also flower in warmer months after sufficient rainfall, flowers most reliably in early April; fruiting mid April-June

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

Texas ayenia

Ayenia limitaris

Subtropical thorn woodland or tall shrubland on loamy soils of the Rio Grande Delta; known site soils include well-drained, calcareous, sandy clay loam (Hidalgo Series) and neutral to moderately alkaline, fine sandy loam (Willacy Series); also under or among taller shrubs in thorn woodland/thorn shrubland; flowering throughout the year with sufficient rainfall

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S1

Texas milk vetch

Astragalus reflexus

Grasslands, prairies, and roadsides on calcareous and clay substrates; Annual; Flowering Feb-June; Fruiting April-June

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

Texas stonecrop

Lenophyllum texanum

Found in shrublands on clay dunes (lomas) at the mouth of the Rio Grande and on xeric calcareous rock outcrops at scattered inland sites; Perennial; Flowering/Fruiting Nov-Feb

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

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CAMERON COUNTY

PLANTS

Texas willkommia

Willkommia texana var. *texana*

Mostly in sparsely vegetated shortgrass patches within taller prairies on alkaline or saline soils on the Coastal Plain (Carr 2015).

Federal Status:

State Status:

SGCN: Y

Endemic: Y

Global Rank: G3G4T3

State Rank: S3

Vasey's adelia

Adelia vaseyi

Mostly subtropical evergreen/deciduous woodlands on loamy soils of Rio Grande Delta, but occasionally in shrublands on more xeric sandy to gravelly upland sites; Perennial; Flowering January-June

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G3

State Rank: S3

Wright's trichocoronis

Trichocoronis wrightii var. *wrightii*

Most records from Texas are historical, perhaps indicating a decline as a result of alteration of wetland habitats; Annual; Flowering Feb-Oct; Fruiting Feb-Sept

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G4T3

State Rank: S2

yellow-flowered alicocha

Echinocereus papillosus

Under shrubs or in open areas on various substrates; Perennial; Flowering Jan-April.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G3

State Rank: S3

DISCLAIMER

The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the application website for further information.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Texas Coastal Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
Phone: (281) 286-8282 Fax: (281) 488-5882

In Reply Refer To:
Project Code: 2023-0118827
Project Name: RGV Solar- Donna

August 18, 2023

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

To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Corpus Christi, and Alamo, Texas, have combined administratively to form the Texas Coastal Ecological Services Field Office. All project related correspondence should be sent to the field office address listed below responsible for the county in which your project occurs:

Project Leader; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058

Angelina, Austin, Brazoria, Brazos, Chambers, Colorado, Fayette, Fort Bend, Freestone, Galveston, Grimes, Hardin, Harris, Houston, Jasper, Jefferson, Leon, Liberty, Limestone, Madison, Matagorda, Montgomery, Newton, Orange, Polk, Robertson, Sabine, San Augustine, San Jacinto, Trinity, Tyler, Walker, Waller, and Wharton.

Assistant Field Supervisor, U.S. Fish and Wildlife Service; 4444 Corona Drive, Ste 215; Corpus Christi, Texas 78411

Aransas, Atascosa, Bee, Brooks, Calhoun, De Witt, Dimmit, Duval, Frio, Goliad, Gonzales, Hidalgo, Jackson, Jim Hogg, Jim Wells, Karnes, Kenedy, Kleberg, La Salle, Lavaca, Live Oak, Maverick, McMullen, Nueces, Refugio, San Patricio, Victoria, and Wilson.

U.S. Fish and Wildlife Service; Santa Ana National Wildlife Refuge; Attn: Texas Ecological Services Sub-Office; 3325 Green Jay Road, Alamo, Texas 78516

Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata.

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

amended (16 U.S.C. 1531 *et seq.*).

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

Non-Federal entities may consult under Sections 9 and 10 of the Act. Section 9 and Federal regulations prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR § 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR § 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Should the proposed project

have the potential to take listed species, the Service recommends that the applicant develop a Habitat Conservation Plan and obtain a section 10(a)(1)(B) permit. The Habitat Conservation Planning Handbook is available at: <https://www.fws.gov/library/collections/habitat-conservation-planning-handbook>.

Migratory Birds:

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

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

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat.

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

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether

any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Texas Coastal Ecological Services Field Office

17629 El Camino Real, Suite 211

Houston, TX 77058-3051

(281) 286-8282

PROJECT SUMMARY

Project Code: 2023-0118827
Project Name: RGV Solar- Donna
Project Type: Power Gen - Solar
Project Description: Solar arrays
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@26.20056125,-98.05706511242127,14z>



Counties: Hidalgo County, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gulf Coast Jaguarundi <i>Puma yagouaroundi cacomitli</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3945	Endangered
Ocelot <i>Leopardus (=Felis) pardalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4474	Endangered

BIRDS

NAME	STATUS
Northern Aplomado Falcon <i>Falco femoralis septentrionalis</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Endangered
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Wind related projects within migratory route. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Wind Related Projects Within Migratory Route Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

CLAMS

NAME	STATUS
Mexican Fawnsfoot <i>Truncilla cognata</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/7870	Proposed Endangered
Salina Mucket <i>Potamilus metnecktayi</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/8753	Proposed Endangered

INSECTS

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

FLOWERING PLANTS

NAME	STATUS
Star Cactus <i>Astrophytum asterias</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7913	Endangered
Texas Ayenia <i>Ayenia limitaris</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4942	Endangered
Walker's Manioc <i>Manihot walkerae</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1892	Endangered

CRITICAL HABITATS

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

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

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your

migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
<p>American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Chestnut-collared Longspur <i>Calcarius ornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Mar 15 to Aug 25
<p>Eastern Meadowlark <i>Sturnella magna</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Apr 25 to Aug 31
<p>Gull-billed Tern <i>Gelochelidon nilotica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501</p>	Breeds May 1 to Jul 31
<p>Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5511</p>	Breeds elsewhere
<p>Painted Bunting <i>Passerina ciris</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Apr 25 to Aug 15
<p>Sprague's Pipit <i>Anthus spragueii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8964</p>	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

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

Probability of Presence (■)

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

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

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

Breeding Season (■)

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

Survey Effort (|)

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

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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



Additional information can be found using the following links:

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

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point

within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no

data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- [R5UBFx](#)
 - [R4SBCx](#)
-

IPAC USER CONTACT INFORMATION

Agency: IES
Name: Ryan Galovich
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Address Line 2: Ste 101
City: McKinney
State: TX
Zip: 75069
Email: rgalovich@intenvsol.com
Phone: 5412078114

Last Update: 1/4/2023

HIDALGO COUNTY

AMPHIBIANS

black-spotted newt

Notophthalmus meridionalis

Terrestrial and aquatic: Terrestrial habitats used by adults are typically poorly drained clay soils that allow for the formation of ephemeral wetlands. A wide variety of vegetation associations are known to be used, such as thorn scrub and pasture. Aquatic habitats used for reproduction are a variety of ephemeral and permanent water bodies.

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

Mexican burrowing toad

Rhinophrynus dorsalis

Terrestrial and aquatic: Low, rolling hills of sand, gravel or thin soil drained by ravines and gullies. Prefers moderate to dense vegetation cover of cactus and thornscrub. Roadside ditches, temporary ponds, arroyos, or wherever loose friable soils are present in which to burrow.

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

Mexican treefrog

Smilisca baudinii

Terrestrial and aquatic: Terrestrial habitats used include forested and brush around water bodies. Aquatic habitats used can any any body of water but preferred breeding sites are small, ephemeral wetlands.

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

sheep frog

Hypopachus variolosus

Terrestrial and aquatic: Predominantly grassland and savanna; largely fossorial in areas with moist microclimates.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

South Texas siren (Large Form)

Siren sp. 1

Aquatic: Mainly found in bodies of quiet water, permanent or temporary, with or without submergent vegetation. Wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain.

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

white-lipped frog

Leptodactylus fragilis

Terrestrial and aquatic: Lowlands, grasslands, cultivated fields, roadside ditches, and a wide variety of other habitats; often hides under rocks or in burrows under clumps of grass.

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

DISCLAIMER

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HIDALGO COUNTY

AMPHIBIANS

Woodhouse's toad *Anaxyrus woodhousii*

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

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

ARACHNIDS

No accepted common name *Diplocentrus diablo*

Like all species of *Diplocentrus*, *D. diablo* is an obligate burrower but may be found under large surface objects in rocky areas of the Rio Grande Valley (Stockwell & Nilsson 1987).

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

BIRDS

cactus ferruginous pygmy-owl *Glaucidium brasilianum cactorum*

Riparian trees, brush, palm, and mesquite thickets; during day also roosts in small caves and recesses on slopes of low hills; breeding April to June

Federal Status: State Status: T SGCN: N
Endemic: N Global Rank: G5T2 State Rank: S2?

common black-hawk *Buteogallus anthracinus*

Cottonwood-lined rivers and streams; willow tree groves on the lower Rio Grande floodplain; formerly bred in south Texas

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S2B

Franklin's gull *Leucophaeus pipixcan*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

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

gray hawk *Buteo plagiatus*

Locally and irregularly along U.S.-Mexico border; mature riparian woodlands and nearby semiarid mesquite and scrub grasslands; breeding range formerly extended north to southernmost Rio Grande floodplain of Texas

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S2B

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HIDALGO COUNTY

BIRDS

hook-billed kite

Chondrohierax uncinatus

Dense tropical and subtropical forests, but does occur in open woodlands; uncommon to rare in most of range; accidental in south Texas

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G4

State Rank: S1

lark bunting

Calamospiza melanocorys

Overall, it's a generalist in most short grassland settings including ones with some brushy component plus certain agricultural lands that include grain sorghum. Short grasses include sideoats and blue gramas, sand dropseed, prairie junegrass (Koeleria), buffalograss also with patches of bluestem and other mid-grass species. This bunting will frequent smaller patches of grasses or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. This species avoids urban areas and cotton fields.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S4B

mountain plover

Charadrius montanus

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G3

State Rank: S2

northern beardless-tyrannulet

Camptostoma imberbe

Mesquite woodlands; also cottonwood, willow, elm, and tepeguaje near the Rio Grande. Breeding April to July

Federal Status:

State Status: T

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S3B

piping plover

Charadrius melodus

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

Federal Status: LT

State Status: T

SGCN: Y

Endemic: N

Global Rank: G3

State Rank: S2N

red-crowned parrot

Amazona viridigenalis

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HIDALGO COUNTY

BIRDS

Starting in the late 1980s to early 1990s, this species has increased in numbers in urban settings in Cameron and Hidalgo counties. This cavity-nesting species prefers dead palm trees, including non-native Washingtonian palms, with abandoned cavities excavated by Golden-fronted Woodpeckers. Grooming of palms (i.e., trimming the dead, drooping fronds) does not appear to directly impact this species; however removal of dead palms with or without cavities should be avoided.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

rose-throated becard *Pachyramphus aglaiae*

Riparian corridors; trees, woodlands, open forest, scrub, and mangroves; breeding April to July.

Federal Status:	State Status: T	SGCN: N
Endemic: N	Global Rank: G4G5	State Rank: SNA

Sprague's pipit *Anthus spragueii*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Habitat during migration and in winter consists of pastures and weedy fields (AOU 1983), including grasslands with dense herbaceous vegetation or grassy agricultural fields.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3N

swallow-tailed kite *Elanoides forficatus*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B

tropical parula *Setophaga pitiayumi*

Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.

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

western burrowing owl *Athene cunicularia hypugaea*

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

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

white-faced ibis *Plegadis chihi*

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HIDALGO COUNTY

BIRDS

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

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

white-tailed hawk *Buteo albicaudatus*

Near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S4B

wood stork *Mycteria americana*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers to nest in large tracts of baldcypress (*Taxodium distichum*) or red mangrove (*Rhizophora mangle*); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.

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

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

CRUSTACEANS

acacia fairy shrimp *Dendrocephalus acacioidea*

Playa, roadside pools in Brooks, Hidalgo, Kleberg Cos., Texas (Jass and Klausmeier, 2000). Occurs in turbid, warm water temporary pools and playas.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

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HIDALGO COUNTY

FISH

alligator gar *Atractosteus spatula*

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.

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

Rio Grande shiner *Notropis jemezanus*

Rio Grande drainage. Occurs over substrate of rubble, gravel and sand, often overlain with silt

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1

river goby *Awaous banana*

Formerly occupied the mainstream of the Rio Grande in Texas (northern most portion of their range). Generally occupies clear, well oxygenated streams and rivers with slow to moderate current (dependent on flowing water), sandy, muddy, or hard bottom, and little or no vegetation; also enters brackish and marine waters. Shaded areas of streams/rivers may be preferred. Spawning takes place in freshwater and eggs drift downstream to brackish or salt water where they hatch. Larvae migrate back into streams as they develop, but have a higher salinity tolerance than adults. Feeds mainly on filamentous algae.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1

speckled chub *Macrhybopsis aestivalis*

Found throughout the Rio Grande and lower Pecos River but occurs most frequently between the Río Conchos confluence and the Pecos River. Flowing water over coarse sand and fine gravel substrates in streams; typically found in raceways and runs.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S1S2

Tamaulipas shiner *Notropis braytoni*

Restricted to the Rio Grande basin in Texas including the lower Pecos River. Typically found in large rivers and creeks associated with a variety of flowing-water habitats such as runs and riffles over gravel, cobble, and sand.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1S2

INSECTS

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

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

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HIDALGO COUNTY

INSECTS

Manfreda giant-skipper *Stallingsia maculosus*

Most skippers are small and stout-bodied; name derives from fast, erratic flight; at rest most skippers hold front and hind wings at different angles; skipper larvae are smooth, with the head and neck constricted; skipper larvae usually feed inside a leaf shelter and pupate in a cocoon made of leaves fastened together with silk

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G1 State Rank: S1

neojuvenile tiger beetle *Cicindela obsoleta neojuvenilis*

Bare or sparsely vegetated, dry, hard-packed soil; typically in previously disturbed areas; peak adult activity in Jul

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G5T1 State Rank: SH

No accepted common name *Disonycha barberi*

Habitat description is not available at this time.

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

No accepted common name *Disonycha stenosticha*

Habitat description is not available at this time.

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

No accepted common name *Trichodesma pulchella*

Habitat description is not available at this time.

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

No accepted common name *Ormiscus albofasciatus*

Habitat description is not available at this time.

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

No accepted common name *Trigonogya reticulaticollis*

Habitat description is not available at this time.

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

No accepted common name *Lachnodactyla texana*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

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HIDALGO COUNTY

INSECTS

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Dacoderus steineri*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Diomus pseudotaedatus*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Heterobrenthus texanus*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: S1

No accepted common name *Callipogonius cornutus*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Perdita tricineta*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Bombus variabilis*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: G1G2 State Rank: SNR

No accepted common name *Spectralia prosternalis*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: GNR State Rank: S2

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HIDALGO COUNTY

INSECTS

No accepted common name *Sphingicampa blanchardi*

Woodland - hardwood; Tamaulipan thornscrub with caterpillars host plant, Texas Ebony (*Pitheocellobium flexicaule*) an important element

Federal Status: State Status: SGCN: Y
Endemic: P Global Rank: G1 State Rank: S1

subtropical black sky tiger beetle *Cicindela nigrocoerulea subtropica*

Most tiger beetles are active, usually brightly colored, and found in open, sunny areas; adult tiger beetles are predaceous and feed on a variety of small insects; larvae of tiger beetles are also predaceous and live in vertical burrows in soil of dry paths, fields, or sandy beaches

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G5T2 State Rank: SH

Tamaulipan agapema *Agapema galbina*

Tamaulipan thornscrub with adequate densities of the caterpillar foodplant *Condalia hookeri hookeri* (= *obovata*); adults occur Sep - Oct; eggs hatch within two weeks and larvae mature rapidly

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G1 State Rank: SH

Tamaulipan clubtail dragonfly *Gomphus gonzalezi*

Rivers, muddy to clear and rocky, should be watched for in substantial creeks as well. This species is considered rare and has a very restricted range in the Rio Grande Valley and southward in eastern Mexico. Abundance information is lacking (Ware et al 2016; Abbott 2005).

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G2 State Rank: S2

Texas angle-wing katydid *Microcentrum minus*

Habitat description is not available at this time.

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

MAMMALS

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) 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.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S2S3

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HIDALGO COUNTY

MAMMALS

Coues' rice rat *Oryzomys couesi aquaticus*

Cattail-bulrush marsh with shallower zone of aquatic grasses near the shoreline; shade trees around the shoreline are important features; prefers salt and freshwater, as well as grassy areas near water; breeds April-August

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5T2T4 State Rank: S2

eastern red bat *Lasiurus borealis*

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

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

eastern spotted skunk *Spilogale putorius*

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

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

hoary bat *Lasiurus cinereus*

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

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

long-tailed weasel *Mustela frenata*

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

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

mountain lion *Puma concolor*

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

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

northern yellow bat *Lasiurus intermedius*

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.

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HIDALGO COUNTY

MAMMALS

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S4

ocelot *Leopardus pardalis*

Restricted to mesquite-thorn scrub and live-oak mottes; avoids open areas. Dense mixed brush below four feet; thorny shrublands; dense chaparral thickets; breeds and raises young June-November.

Federal Status: LE State Status: E SGCN: Y
Endemic: N Global Rank: G4 State Rank: S1

southern yellow bat *Lasiurus ega*

Relict palm grove is only known Texas habitat. Neotropical species roosting in palms, forages over water; insectivorous; breeding in late winter. Roosts in dead palm fronds in ornamental palms in urban areas.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S3S4

tricolored bat *Perimyotis subflavus*

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

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

western hog-nosed skunk *Conepatus leuconotus*

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

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

white-nosed coati *Nasua narica*

Woodlands, riparian corridors and canyons. Most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S1

MOLLUSKS

Mexican fawnsfoot *Truncilla cognata*

Occurs in large rivers but may also be found in medium-sized streams. Is commonly found in habitats with some flowing water, often in protected near shore areas such as banks and backwaters but also at the head of riffles; the latter more often supporting both sub-adults and adults. Typically occurs in substrates of mixed sand and gravel as well as soft unconsolidated sediments. Considered intolerant of reservoirs (Randklev et al. 2017b; Randklev et al. forthcoming). [Mussels of Texas 2019]

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G1 State Rank: S1

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HIDALGO COUNTY

MOLLUSKS

No accepted common name *Praticolella trimatris*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Salina mucket *Potamilus metnecktayi*

Occurs in medium to large rivers, where it may be found in substrates composed of various combinations of mud, sand, gravel, and cobble, as well as under rocks. It occurs in areas with slow to moderate current, most often in stable littoral habitats dominated by boulder or bedrock habitat; not known from reservoirs (Randklev et al. 2017b; Randklev et al. forthcoming). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

Texas hornshell *Popenaias popeii*

Occurs in small streams to large rivers in slow to moderate current, often residing in rock crevices, travertine shelves, and under large boulders, where small-grained material, such as clay, silt, or sand gathers. Can also occur in riffles that are clean swept of soft silt; not known from reservoirs (Carman 2007; Inoue et al. 2014; Randklev et al. 2017b; Randklev et al. forthcoming). [Mussels of Texas 2019]

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

REPTILES

black-striped snake *Coniophanes imperialis*

Terrestrial: Occurs in native thorn scrub and woodlands as well as modified urban areas. Prefers warm, moist microhabitats, and sandy soils.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S2S3

eastern box turtle *Terrapene carolina*

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

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

Mexican hog-nosed snake *Heterodon kennerlyi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G4	State Rank: SNR

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HIDALGO COUNTY

REPTILES

northern cat-eyed snake *Leptodeira septentrionalis septentrionalis*

Terrestrial: Thorn scrub and deciduous woodland; dense thickets bordering ponds and streams.

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

reticulate collared lizard *Crotaphytus reticulatus*

Terrestrial: Requires open brush-grasslands; thorn-scrub vegetation, usually on well-drained rolling terrain of shallow gravel, caliche, or sandy soils; often on scattered flat rocks below escarpments or isolated rock outcrops among scattered clumps of prickly pear and mesquite

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G3 State Rank: S4

Rio Grande river cooter *Pseudemys gorzugi*

Aquatic: Habitat includes rivers and their more permanent spring-fed tributary streams, beaver ponds, and stock tanks (Garrett and Barker 1987). Occupied waters may have a muddy, sandy, or rocky bottom, and may or may not contain aquatic vegetation (Degenhardt et al. 1996).

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

slender glass lizard *Ophisaurus attenuatus*

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

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

speckled racer *Drymobius margaritiferus*

Terrestrial: Dense thickets near water, palm groves, riparian woodlands; often in areas with much vegetation litter on ground.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S1

Texas horned lizard *Phrynosoma cornutum*

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

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

Texas indigo snake *Drymarchon melanurus erebennus*

Terrestrial: Thornbush-chaparral woodland of south Texas, in particular dense riparian corridors. Can do well in suburban and irrigated croplands. Requires moist microhabitats, such as rodent burrows, for shelter.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5T4 State Rank: S4

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HIDALGO COUNTY

REPTILES

Texas tortoise *Gopherus berlandieri*

Terrestrial: Open scrub woods, arid brush, lomas, grass-cactus association; often in areas with sandy well-drained soils. When inactive occupies shallow depressions dug at base of bush or cactus; sometimes in underground burrow or under object. Eggs are laid in nests dug in soil near or under bushes.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4 State Rank: S2

western box turtle *Terrapene ornata*

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.

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

western hognose snake *Heterodon nasicus*

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.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S4

western massasauga *Sistrurus tergeminus*

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.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G3G4 State Rank: S3

PLANTS

Amelia's sand-verbena *Abronia ameliae*

Endemic to South Texas; Occurs on deep, well-drained sandy soils of the South Texas Sand Sheet in grassy and/or herbaceous dominated openings within coastal live oak woodlands or mesquite-coastal live oak woodlands. Perennial; Flowering Mar-June

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

arrowleaf milkvine *Matelea sagittifolia*

Most consistently encountered in thornscrub in South Texas; Perennial; Flowering March-July; Fruiting April-July and Dec?

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

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HIDALGO COUNTY

PLANTS

Bailey's ballmoss

Tillandsia baileyi

Epiphytic on various trees and tall shrubs, perhaps most common in mottes of Live oak on vegetated dunes and flats in coastal portions of the South Texas Sand Sheet, but also on evergreen sub-tropical woodlands along resacas in the Lower Rio Grande Valley; flowering (February-)April-May, but conspicuous throughout the year

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2

Buckley's spiderwort

Tradescantia buckleyi

Occurs on sandy loam or clay soils in grasslands or shrublands underlain by the Beaumont Formation.

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

Chihuahua balloon-vine

Cardiospermum dissectum

Thorn shrublands or low woodlands on well to excessively well drained, calcareous, sandy to gravelly soils in drier uplands of the Lower Rio Grande Valley, in areas underlain by the Goliad formation, Catahoula and Frio formations undivided, Jackson Group, and other Eocene formations; during drought conditions the normally inconspicuous slender twining vine turns a more conspicuous deep reddish-purple; flowering (April-) July-September, probably throughout the growing season in response to rainfall.

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

Cory's croton

Croton coryi

Grasslands and woodland openings on barrier islands and coastal sands of South Texas, inland on South Texas Sand Sheet; Annual; Flowering July-Oct; Fruiting July-Nov

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

Croft's bluet

Houstonia croftiae

Occurs in sparsely vegetated areas in grasslands or among shrubs (Carr 2015).

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

Falfurrias milkvine

Matelea radiata

Uncertain, only two known specimens; one from clay soil on dry gravel hills at altitude of approximately 45 m (150 ft); other from Falfurrias, no habitat description; probably flowering May-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

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HIDALGO COUNTY

PLANTS

Gregg's wild-buckwheat *Eriogonum greggii*

Sparingly vegetated openings in thorn shrublands in shallow soils on xeric ridges along the Rio Grande; also on excessively drained, sandy soil over caliche and calcareous sandstone of the Goliad Formation and over sandstone or fossiliferous layers of the Jackson Group; flowering February-July, probably opportunistically during the growing season

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G2 State Rank: S1

Jones' nailwort *Paronychia jonesii*

Occurs in early successional open areas on deep well-drained sand; Biennial Annual; Flowering March-Nov; Fruiting April-Nov

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G3G4 State Rank: S3S4

large selenia *Selenia grandis*

Occurs in seasonally wet clayey soils in open areas; Annual; Flowering Jan-April; Fruiting Feb-April

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

Mexican mud-plantain *Heteranthera mexicana*

Wet clayey soils of resacas and ephemeral wetlands in South Texas and along margins of playas in the Panhandle; flowering June-December, only after sufficient rainfall

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

Runyon's cory cactus *Coryphantha macromeris var. runyonii*

Gravelly to sandy or clayey, calcareous, sometimes gypsiferous or saline soils, often over the Catahoula and Frio formations, on gentle hills and slopes to the flats between, at elevations ranging from 10 to 150 m (30 to 500 ft); ?late spring or early summer, November, fruit has been collected in August

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5T2T3 State Rank: S2S3

Runyon's water-willow *Justicia runyonii*

Margins of and openings within subtropical woodlands or thorn shrublands on calcareous, alluvial, silty or clayey soils derived from Holocene silt and sand floodplain deposits of the Rio Grande Delta; can be common in narrow openings such as those provided by trails through dense ebony woodlands and is sometimes restricted to microdepressions; flowering (July-) September-November

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G2 State Rank: S2

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HIDALGO COUNTY

PLANTS

sand Brazos mint	<i>Brazoria arenaria</i>		
Sandy areas in South Texas; Annual; Flowering/Fruiting March-April			
Federal Status:	State Status:	SGCN:	Y
Endemic: Y	Global Rank: G3	State Rank:	S3
sand sheet leaf-flower	<i>Phyllanthus abnormis</i> var. <i>riograndensis</i>		
Semi-desert scrub of deep South Texas; Annual; Flowering Feb-July; Fruiting Oct-March			
Federal Status:	State Status:	SGCN:	Y
Endemic: Y	Global Rank: G5T3	State Rank:	S3
shortcrown milkvine	<i>Matelea brevicoronata</i>		
Primarily in grasslands on tight sandy or silty substrates; Perennial; Flowering March-Sept; Fruiting May-Sept			
Federal Status:	State Status:	SGCN:	Y
Endemic: Y	Global Rank: G3	State Rank:	S3
Siler's huaco	<i>Manfreda sileri</i>		
Rare in a variety of grasslands and shrublands on dry sites; Perennial; Flowering April-July; Fruiting June-July			
Federal Status:	State Status:	SGCN:	Y
Endemic: N	Global Rank: G3	State Rank:	S3
small-leaved yellow velvet-leaf	<i>Wissadula parvifolia</i>		
Occurs on sandy loams or clays in shrublands or woodlands on gently undulating terrain of the Holocene sand sheet over the Goliad Formation.			
Federal Status:	State Status:	SGCN:	Y
Endemic: Y	Global Rank: G1	State Rank:	S1
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.			
Federal Status:	State Status:	SGCN:	Y
Endemic: N	Global Rank: G3	State Rank:	S3
South Texas yellow clammyweed	<i>Polanisia erosa</i> ssp. <i>breviglandulosa</i>		
Sand plains of south Texas (Iltis 1958). Flowering early spring-mid fall.			
Federal Status:	State Status:	SGCN:	Y
Endemic: Y	Global Rank: G5T3T4	State Rank:	S3S4

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HIDALGO COUNTY

PLANTS

St. Joseph's staff

Manfreda longiflora

Thorn shrublands on clays and loams with various concentrations of salt, caliche, sand, and gravel; rosettes are often obscured by low shrubs; flowering September-October

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

star cactus

Astrophytum asterias

Gravelly clays or loams, possibly of the Catarina Series (deep, droughty, saline clays), over the Catahoula and Frio formations, on gentle slopes and flats in sparsely vegetated openings between shrub thickets within mesquite grasslands or mesquite-blackbrush thorn shrublands; plants sink into or below ground during dry periods; flowering from mid March-May, may also flower in warmer months after sufficient rainfall, flowers most reliably in early April; fruiting mid April-June

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

stinking rushpea

Pomaria austrotexana

In open areas on deep well drained sands; Perennial; Flowering Feb-Oct; Fruiting April-Oct

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

Texas ayenia

Ayenia limitaris

Subtropical thorn woodland or tall shrubland on loamy soils of the Rio Grande Delta; known site soils include well-drained, calcareous, sandy clay loam (Hidalgo Series) and neutral to moderately alkaline, fine sandy loam (Willacy Series); also under or among taller shrubs in thorn woodland/thorn shrubland; flowering throughout the year with sufficient rainfall

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S1

Texas peachbush

Prunus texana

Occurs at scattered sites in various well drained sandy situations; deep sand, plains and sand hills, grasslands, oak woods, 0-200 m elevation; Perennial; Flowering Feb-Mar; Fruiting Apr-Jun

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Texas stonecrop

Lenophyllum texanum

Found in shrublands on clay dunes (lomas) at the mouth of the Rio Grande and on xeric calcareous rock outcrops at scattered inland sites; Perennial; Flowering/Fruiting Nov-Feb

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

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HIDALGO COUNTY

PLANTS

Vasey's adelia

Adelia vaseyi

Mostly subtropical evergreen/deciduous woodlands on loamy soils of Rio Grande Delta, but occasionally in shrublands on more xeric sandy to gravelly upland sites; Perennial; Flowering January-June

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G3

State Rank: S3

Walker's manioc

Manihot walkerae

Periphery of native brush in sandy loam; also on caliche cuestras?; flowering April-September (following rains?)

Federal Status: LE

State Status: E

SGCN: Y

Endemic: N

Global Rank: G2

State Rank: S1

Wright's trichocoronis

Trichocoronis wrightii var. *wrightii*

Most records from Texas are historical, perhaps indicating a decline as a result of alteration of wetland habitats; Annual; Flowering Feb-Oct; Fruiting Feb-Sept

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G4T3

State Rank: S2

yellow-flowered alicoche

Echinocereus papillosus

Under shrubs or in open areas on various substrates; Perennial; Flowering Jan-April.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G3

State Rank: S3

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
Texas Coastal Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
Phone: (281) 286-8282 Fax: (281) 488-5882

In Reply Refer To:
Project Code: 2023-0118842
Project Name: RGV Solar- Harlingen

August 18, 2023

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

To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Corpus Christi, and Alamo, Texas, have combined administratively to form the Texas Coastal Ecological Services Field Office. All project related correspondence should be sent to the field office address listed below responsible for the county in which your project occurs:

Project Leader; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058

Angelina, Austin, Brazoria, Brazos, Chambers, Colorado, Fayette, Fort Bend, Freestone, Galveston, Grimes, Hardin, Harris, Houston, Jasper, Jefferson, Leon, Liberty, Limestone, Madison, Matagorda, Montgomery, Newton, Orange, Polk, Robertson, Sabine, San Augustine, San Jacinto, Trinity, Tyler, Walker, Waller, and Wharton.

Assistant Field Supervisor, U.S. Fish and Wildlife Service; 4444 Corona Drive, Ste 215; Corpus Christi, Texas 78411

Aransas, Atascosa, Bee, Brooks, Calhoun, De Witt, Dimmit, Duval, Frio, Goliad, Gonzales, Hidalgo, Jackson, Jim Hogg, Jim Wells, Karnes, Kenedy, Kleberg, La Salle, Lavaca, Live Oak, Maverick, McMullen, Nueces, Refugio, San Patricio, Victoria, and Wilson.

U.S. Fish and Wildlife Service; Santa Ana National Wildlife Refuge; Attn: Texas Ecological Services Sub-Office; 3325 Green Jay Road, Alamo, Texas 78516

Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata.

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

amended (16 U.S.C. 1531 *et seq.*).

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

Non-Federal entities may consult under Sections 9 and 10 of the Act. Section 9 and Federal regulations prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR § 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR § 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Should the proposed project

have the potential to take listed species, the Service recommends that the applicant develop a Habitat Conservation Plan and obtain a section 10(a)(1)(B) permit. The Habitat Conservation Planning Handbook is available at: <https://www.fws.gov/library/collections/habitat-conservation-planning-handbook>.

Migratory Birds:

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

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

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat.

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

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether

any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Texas Coastal Ecological Services Field Office

17629 El Camino Real, Suite 211

Houston, TX 77058-3051

(281) 286-8282

PROJECT SUMMARY

Project Code: 2023-0118842
Project Name: RGV Solar- Harlingen
Project Type: Power Gen - Solar
Project Description: Solar arrays
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@26.217185,-97.73287295,14z>



Counties: Cameron County, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 16 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gulf Coast Jaguarundi <i>Puma yagouaroundi cacomitli</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3945	Endangered
Ocelot <i>Leopardus (=Felis) pardalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4474	Endangered

BIRDS

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Northern Aplomado Falcon <i>Falco femoralis septentrionalis</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Endangered
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

REPTILES

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: North Atlantic DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Kemp's Ridley Sea Turtle <i>Lepidochelys kempii</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/5523	Endangered
Leatherback Sea Turtle <i>Dermochelys coriacea</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle <i>Caretta caretta</i> Population: Northwest Atlantic Ocean DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

CLAMS

NAME	STATUS
Mexican Fawnsfoot <i>Truncilla cognata</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/7870	Proposed Endangered
Salina Mucket <i>Potamilus metnecktayi</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/8753	Proposed Endangered

INSECTS

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

FLOWERING PLANTS

NAME	STATUS
South Texas Ambrosia <i>Ambrosia cheiranthifolia</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3331	Endangered
Texas Ayenia <i>Ayenia limitaris</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4942	Endangered

CRITICAL HABITATS

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

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

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Meadowlark <i>Sturnella magna</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 31
Gull-billed Tern <i>Gelochelidon nilotica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Orchard Oriole <i>Icterus spurius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jun 10 to Aug 15

NAME	BREEDING SEASON
Sprague's Pipit <i>Anthus spragueii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8964	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

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

Probability of Presence (■)

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

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

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

Breeding Season (■)

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

Survey Effort (|)

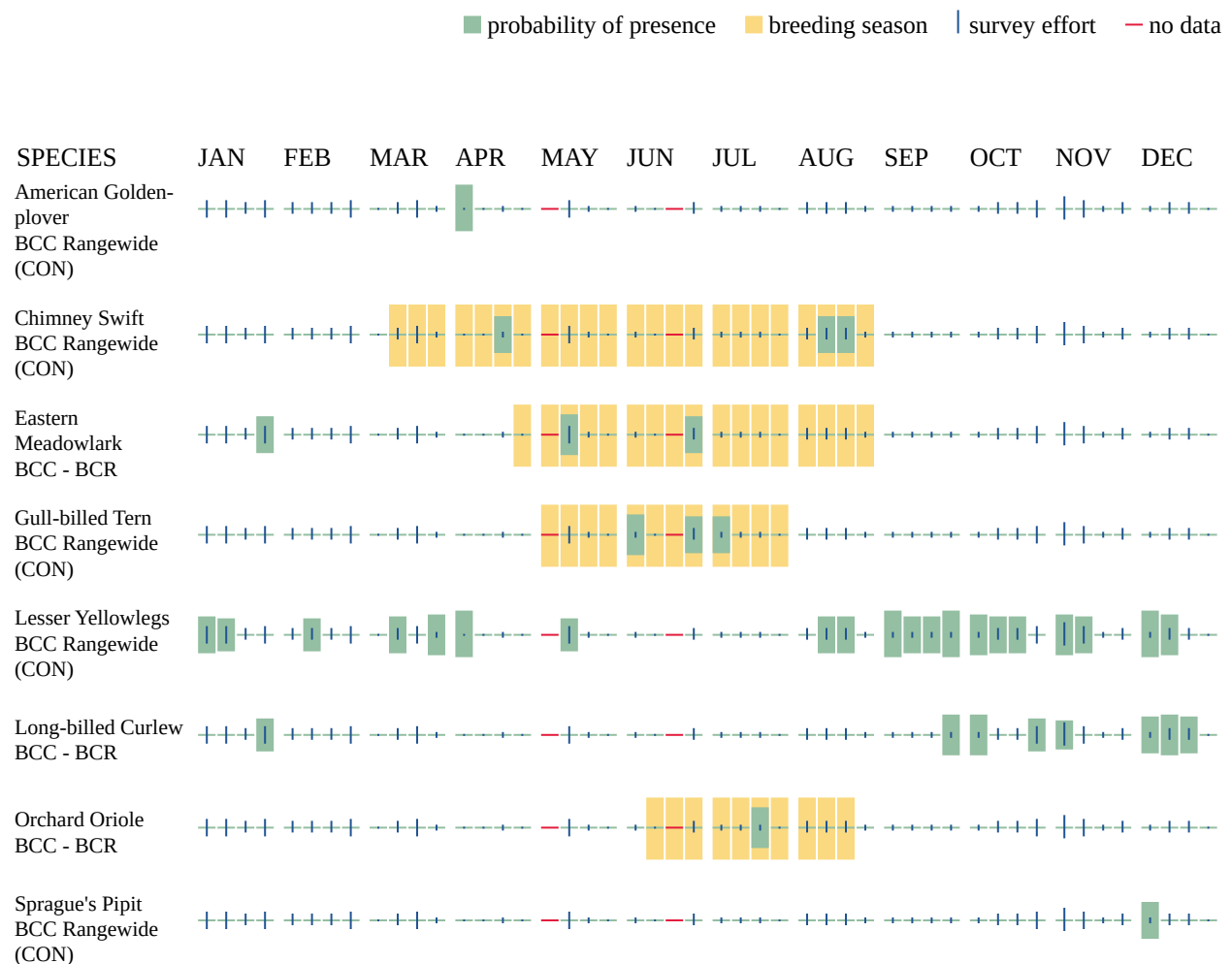
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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



Additional information can be found using the following links:

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

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point

within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no

data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: IES
Name: Ryan Galovich
Address: 301 Eldorado Parkway
Address Line 2: Ste 101
City: McKinney
State: TX
Zip: 75069
Email: rgalovich@intenvsol.com
Phone: 5412078114

Last Update: 1/4/2023

CAMERON COUNTY

AMPHIBIANS

black-spotted newt

Notophthalmus meridionalis

Terrestrial and aquatic: Terrestrial habitats used by adults are typically poorly drained clay soils that allow for the formation of ephemeral wetlands. A wide variety of vegetation associations are known to be used, such as thorn scrub and pasture. Aquatic habitats used for reproduction are a variety of ephemeral and permanent water bodies.

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

Mexican treefrog

Smilisca baudinii

Terrestrial and aquatic: Terrestrial habitats used include forested and brush around water bodies. Aquatic habitat used can any any body of water but preferred breeding sites are small, ephemeral wetlands.

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

sheep frog

Hypopachus variolosus

Terrestrial and aquatic: Predominantly grassland and savanna; largely fossorial in areas with moist microclimates.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S4

South Texas siren (Large Form)

Siren sp. 1

Aquatic: Mainly found in bodies of quiet water, permanent or temporary, with or without submergent vegetation. Wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain.

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

Strecker's chorus frog

Pseudacris streckeri

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

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

white-lipped frog

Leptodactylus fragilis

Terrestrial and aquatic: Lowlands, grasslands, cultivated fields, roadside ditches, and a wide variety of other habitats; often hides under rocks or in burrows under clumps of grass.

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

DISCLAIMER

The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the application website for further information.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Texas Coastal Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
Phone: (281) 286-8282 Fax: (281) 488-5882

In Reply Refer To:
Project Code: 2023-0118839
Project Name: RGV Solar- Raymondville

August 18, 2023

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

To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Corpus Christi, and Alamo, Texas, have combined administratively to form the Texas Coastal Ecological Services Field Office. All project related correspondence should be sent to the field office address listed below responsible for the county in which your project occurs:

Project Leader; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058

Angelina, Austin, Brazoria, Brazos, Chambers, Colorado, Fayette, Fort Bend, Freestone, Galveston, Grimes, Hardin, Harris, Houston, Jasper, Jefferson, Leon, Liberty, Limestone, Madison, Matagorda, Montgomery, Newton, Orange, Polk, Robertson, Sabine, San Augustine, San Jacinto, Trinity, Tyler, Walker, Waller, and Wharton.

Assistant Field Supervisor, U.S. Fish and Wildlife Service; 4444 Corona Drive, Ste 215; Corpus Christi, Texas 78411

Aransas, Atascosa, Bee, Brooks, Calhoun, De Witt, Dimmit, Duval, Frio, Goliad, Gonzales, Hidalgo, Jackson, Jim Hogg, Jim Wells, Karnes, Kenedy, Kleberg, La Salle, Lavaca, Live Oak, Maverick, McMullen, Nueces, Refugio, San Patricio, Victoria, and Wilson.

U.S. Fish and Wildlife Service; Santa Ana National Wildlife Refuge; Attn: Texas Ecological Services Sub-Office; 3325 Green Jay Road, Alamo, Texas 78516

Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata.

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

amended (16 U.S.C. 1531 *et seq.*).

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

Non-Federal entities may consult under Sections 9 and 10 of the Act. Section 9 and Federal regulations prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR § 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR § 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Should the proposed project

have the potential to take listed species, the Service recommends that the applicant develop a Habitat Conservation Plan and obtain a section 10(a)(1)(B) permit. The Habitat Conservation Planning Handbook is available at: <https://www.fws.gov/library/collections/habitat-conservation-planning-handbook>.

Migratory Birds:

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

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

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat.

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

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether

any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Texas Coastal Ecological Services Field Office

17629 El Camino Real, Suite 211

Houston, TX 77058-3051

(281) 286-8282

PROJECT SUMMARY

Project Code: 2023-0118839
Project Name: RGV Solar- Raymondville
Project Type: Power Gen - Solar
Project Description: Solar arrays
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@26.46929565,-97.84475330242688,14z>



Counties: Willacy County, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 15 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gulf Coast Jaguarundi <i>Puma yagouaroundi cacomitli</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3945	Endangered
Ocelot <i>Leopardus (=Felis) pardalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4474	Endangered

BIRDS

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Northern Aplomado Falcon <i>Falco femoralis septentrionalis</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Endangered
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

REPTILES

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: North Atlantic DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Kemp's Ridley Sea Turtle <i>Lepidochelys kempii</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/5523	Endangered
Leatherback Sea Turtle <i>Dermochelys coriacea</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle <i>Caretta caretta</i> Population: Northwest Atlantic Ocean DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

CLAMS

NAME	STATUS
Mexican Fawnsfoot <i>Truncilla cognata</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/7870	Proposed Endangered
Salina Mucket <i>Potamilus metnecktayi</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/8753	Proposed Endangered

INSECTS

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

FLOWERING PLANTS

NAME	STATUS
Texas Ayenia <i>Ayenia limitaris</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4942	Endangered

CRITICAL HABITATS

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

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

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your

project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Meadowlark <i>Sturnella magna</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 31
Gull-billed Tern <i>Gelochelidon nilotica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Orchard Oriole <i>Icterus spurius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jun 10 to Aug 15
Painted Bunting <i>Passerina ciris</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 15

NAME	BREEDING SEASON
Sprague's Pipit <i>Anthus spragueii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8964	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

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

Probability of Presence (■)

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

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

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

Breeding Season (■)

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

Survey Effort (|)

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

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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



Additional information can be found using the following links:

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

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point

within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no

data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

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Last Update: 1/4/2023

WILLACY COUNTY

AMPHIBIANS

black-spotted newt

Notophthalmus meridionalis

Terrestrial and aquatic: Terrestrial habitats used by adults are typically poorly drained clay soils that allow for the formation of ephemeral wetlands. A wide variety of vegetation associations are known to be used, such as thorn scrub and pasture. Aquatic habitats used for reproduction are a variety of ephemeral and permanent water bodies.

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

Mexican treefrog

Smilisca baudinii

Terrestrial and aquatic: Terrestrial habitats used include forested and brush around water bodies. Aquatic habitats used can any any body of water but preferred breeding sites are small, ephemeral wetlands.

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

sheep frog

Hypopachus variolosus

Terrestrial and aquatic: Predominantly grassland and savanna; largely fossorial in areas with moist microclimates.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S4

South Texas siren (Large Form)

Siren sp. 1

Aquatic: Mainly found in bodies of quiet water, permanent or temporary, with or without submergent vegetation. Wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain.

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

Strecker's chorus frog

Pseudacris streckeri

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

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

Woodhouse's toad

Anaxyrus woodhousii

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

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

BIRDS

black skimmer

Rynchops niger

Habitat description is not available at this time.

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WILLACY COUNTY

BIRDS

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S2B

Botteri's sparrow *Peucaea botterii*

Two allopatric subspecies occur in Texas. The arizonae subspecies found in the Trans Pecos is considered to be a vagrant because there is just one record from Presidio County in 1997. The other subspecies, texana, can be found regularly in sacahuista habitat (or cordgrass flats) in counties that along the lower coastline like Kenedy, Willacy, and Cameron counties, but also rarely in Kleberg and Brooks counties. This migratory species does not overwinter in Texas. Breeding birds return in spring and sit fairly visibly on (low) commanding perches like fence posts or mesquite limbs where males sing vigorously throughout summer.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4 State Rank: S3B

cactus ferruginous pygmy-owl *Glaucidium brasilianum cactorum*

Riparian trees, brush, palm, and mesquite thickets; during day also roosts in small caves and recesses on slopes of low hills; breeding April to June

Federal Status: State Status: T SGCN: N
Endemic: N Global Rank: G5T2 State Rank: S2?

Franklin's gull *Leucophaeus pipixcan*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

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

gray hawk *Buteo plagiatus*

Locally and irregularly along U.S.-Mexico border; mature riparian woodlands and nearby semiarid mesquite and scrub grasslands; breeding range formerly extended north to southernmost Rio Grande floodplain of Texas

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5 State Rank: S2B

lark bunting *Calamospiza melanocorys*

Overall, it's a generalist in most short grassland settings including ones with some brushy component plus certain agricultural lands that include grain sorghum. Short grasses include sideoats and blue grammas, sand dropseed, prairie junegrass (Koeleria), buffalograss also with patches of bluestem and other mid-grass species. This bunting will frequent smaller patches of grasses or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. This species avoids urban areas and cotton fields.

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

mountain plover *Charadrius montanus*

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WILLACY COUNTY

BIRDS

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous.

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

northern aplomado falcon *Falco femoralis septentrionalis*

Open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G4T2T3	State Rank: S1

northern beardless-tyrannulet *Camptostoma imberbe*

Mesquite woodlands; also cottonwood, willow, elm, and tepeguaje near the Rio Grande. Breeding April to July

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

piping plover *Charadrius melodus*

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

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

reddish egret *Egretta rufescens*

Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S2B

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WILLACY COUNTY

BIRDS

rufa red knot *Calidris canutus rufa*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes.

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

sooty tern *Onychoprion fuscatus*

Primarily an offshore bird; does nest on sandy beaches and islands, breeding April-July.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1B

Sprague's pipit *Anthus spragueii*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Habitat during migration and in winter consists of pastures and weedy fields (AOU 1983), including grasslands with dense herbaceous vegetation or grassy agricultural fields.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3N

swallow-tailed kite *Elanoides forficatus*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B

Texas Botteri's sparrow *Peucaea botterii texana*

Grassland and short-grass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground of low clump of grasses

Federal Status:	State Status: T	SGCN: N
Endemic: N	Global Rank: G4T4	State Rank: S3B

tropical parula *Setophaga pitiayumi*

Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.

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

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WILLACY COUNTY

BIRDS

western burrowing owl *Athene cunicularia hypugaea*

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

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

white-faced ibis *Plegadis chihi*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

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

white-tailed hawk *Buteo albicaudatus*

Near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S4B

wood stork *Mycteria americana*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Prefers to nest in large tracts of baldcypress (*Taxodium distichum*) or red mangrove (*Rhizophora mangle*); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.

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

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain country, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4 State Rank: S3B

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WILLACY COUNTY

FISH

oceanic whitetip shark *Carcharhinus longimanus*

Habitat description is not available at this time.

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

opossum pipefish *Microphis brachyurus*

Adults are only found in low salinity waters of estuaries or freshwater tributaries within 30 miles of the coast (Gilmore 1992), where they also give birth. Young move or are carried into more saline waters off the coast after birth. Newly released larvae must have conditions near 18 ppt salinity for at least two weeks after birth to survive, indicating a physiology adapted for downstream transport to estuarine and marine environments (Frias-Torres 2002). Juvenile migration toward the ocean depends on water flow regimes, salinity, and vegetation for cover and capturing prey (Frias-Torres 2002). Seawalls, docks, and riprap construction destroy habitat and poor water quality and alteration of flow regimes may prevent migration (NMFS 2009).

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S3N

shortfin mako shark *Isurus oxyrinchus*

Habitat description is not available at this time.

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

southern flounder *Paralichthys lethostigma*

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.

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

INSECTS

gladiator short-winged katydid *Dichopetala gladiator*

Habitat description is not available at this time.

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

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WILLACY COUNTY

INSECTS

Los Olmos tiger beetle *Cicindela nevadica olmosa*

Most tiger beetles are active, usually brightly colored, and found in open, sunny areas; adult tiger beetles are predaceous and feed on a variety of small insects; larvae of tiger beetles are also predaceous and live in vertical burrows in soil of dry paths, fields, or sandy beaches

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G5T2 State Rank: S2

No accepted common name *Arethaea phantasma*

Habitat description is not available at this time.

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

MAMMALS

barrier island Texas pocket gopher *Geomys personatus personatus*

Limited information available. Likely found in sandy soils.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G4TNR State Rank: SNR

blue whale *Balaenoptera musculus*

Inhabits tropical, subtropical, temperate, and subpolar waters worldwide, but are infrequently sighted in the Gulf of Mexico. They migrate seasonally between summer feeding grounds and winter breeding grounds, but specifics vary. Commonly observed at the surface in open ocean.

Federal Status: LE State Status: E SGCN: Y
Endemic: N Global Rank: G3G4 State Rank: SH

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) 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.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S2S3

Coues' rice rat *Oryzomys couesi aquaticus*

Cattail-bulrush marsh with shallower zone of aquatic grasses near the shoreline; shade trees around the shoreline are important features; prefers salt and freshwater, as well as grassy areas near water; breeds April-August

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G5T2T4 State Rank: S2

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WILLACY COUNTY

MAMMALS

eastern red bat

Lasiurus borealis

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

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

eastern spotted skunk

Spilogale putorius

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

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

Gulf of Mexico Bryde's whale

Balaenoptera ricei

Habitat description is not available at this time.

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

hoary bat

Lasiurus cinereus

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

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

humpback whale

Megaptera novaeangliae

Inhabits tropical, subtropical, temperate, and subpolar waters world wide. Migrate up to 5,000 miles between colder water (feeding grounds) and warmer water (calving grounds) each year. They will use both open ocean and coastal waters, sometimes including inshore areas such as bays, and are often found near the surface; however, this species is rare in the Gulf of Mexico. The northwest Atlantic/Gulf of Mexico distinct population segment is not considered at risk of extinction and is not listed as Endangered on the Endangered Species Act.

Federal Status: LE	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SNR

long-tailed weasel

Mustela frenata

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

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

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WILLACY COUNTY

MAMMALS

mountain lion

Puma concolor

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

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S2S3

North Atlantic right whale

Eubalaena glacialis

Inhabits subtropical and temperate waters in the northern Atlantic. Commonly found in coastal waters or close to the continental shelf near the surface. They migrate from feeding grounds in cooler waters (Canada and New England) to warmer waters of the southeast US (South Carolina, Georgia, and Florida) to give birth in the fall/winter - both areas are identified as critical habitat by NOAA-NMFS. Nursery areas are in shallow, coastal waters. This species is very rare in the Gulf of Mexico and the few reported sightings are likely vagrants (Ward-Geiger et al 2011).

Federal Status: LE

State Status: E

SGCN: Y

Endemic: N

Global Rank: G1

State Rank: S1

northern yellow bat

Lasiurus intermedius

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.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S4

ocelot

Leopardus pardalis

Restricted to mesquite-thorn scrub and live-oak mottes; avoids open areas. Dense mixed brush below four feet; thorny shrublands; dense chaparral thickets; breeds and raises young June-November.

Federal Status: LE

State Status: E

SGCN: Y

Endemic: N

Global Rank: G4

State Rank: S1

sei whale

Balaenoptera borealis

Habitat description is not available at this time.

Federal Status: LE

State Status: E

SGCN: N

Endemic: N

Global Rank: G5?

State Rank: SNR

southern yellow bat

Lasiurus ega

Relict palm grove is only known Texas habitat. Neotropical species roosting in palms, forages over water; insectivorous; breeding in late winter. Roosts in dead palm fronds in ornamental palms in urban areas.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S3S4

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WILLACY COUNTY

MAMMALS

sperm whale

Physeter macrocephalus

Inhabits tropical, subtropical, and temperate waters world wide, avoiding icy waters. Distribution is highly dependent on their food source (squids, sharks, skates, and fish), breeding, and composition of the pod. In general, this species migrates from north to south in the winter and south to north in the summer; however, individuals in tropical and temperate waters don't seem to migrate at all. Routinely dive to catch their prey (2,000-10,000 feet) and generally occupies water at least 3,300 feet deep near ocean trenches.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S1

tricolored bat

Perimyotis subflavus

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

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

West Indian manatee

Trichechus manatus

Large rivers, brackish water bays, coastal waters. Warm waters of the tropics, in rivers and brackish bays but may also survive in salt water habitats. Very sensitive to cold water temperatures. Rarely occurring as far north as Texas. Gulf and bay system; opportunistic, aquatic herbivore.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S1

western hog-nosed skunk

Conepatus leuconotus

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

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

white-nosed coati

Nasua narica

Woodlands, riparian corridors and canyons. Most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1

REPTILES

Atlantic hawksbill sea turtle

Eretmochelys imbricata

Inhabit tropical and subtropical waters worldwide, in the Gulf of Mexico, especially Texas. Hatchling and juveniles are found in open, pelagic ocean and closely associated with floating lgae/seagrass mats. Juveniles then migrate to shallower, coastal areas, mainly coral reefs and rocky areas, but also in bays and estuaries near mangroves when reefs are absent; seldom in water more than 65 feet deep. They feed on sponges, jellyfish, sea urchins, molluscs, and crustaceans. Nesting occurs from April to November high up on the beach where there is vegetation for cover and little or no sand. Some migrate, but others stay close to foraging areas - females are philopatric.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

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WILLACY COUNTY

REPTILES

black-striped snake *Coniophanes imperialis*

Terrestrial: Occurs in native thorn scrub and woodlands as well as modified urban areas. Prefers warm, moist microhabitats, and sandy soils.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S2S3

green sea turtle *Chelonia mydas*

Inhabits tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico. Adults and juveniles occupy inshore and nearshore areas, including bays and lagoons with reefs and seagrass. They migrate from feeding grounds (open ocean) to nesting grounds (beaches/barrier islands) and some nesting does occur in Texas (April to September). Adults are herbivorous feeding on sea grass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on sea grasses and seaweeds.

Federal Status: LT State Status: T SGCN: Y
Endemic: N Global Rank: G3 State Rank: S3B,S3N

Kemp's Ridley sea turtle *Lepidochelys kempii*

Inhabits tropical, subtropical, and temperate waters of the northwestern Atlantic Ocean and Gulf of Mexico. Adults are found in coastal waters with muddy or sandy bottoms. Some males migrate between feeding grounds and breeding grounds, but some don't. Females migrate between feeding and nesting areas, often returning to the same destinations. Nesting in Texas occurs on a smaller scale compared to other areas (i.e. Mexico). Hatchlings are quickly swept out to open water and are rarely found nearshore. Similarly, juveniles often congregate near floating algae/seagrass mats offshore, and move into nearshore, coastal, neritic areas after 1-2 years and remain until they reach maturity. They feed primarily on crabs, but also snails, clams, other crustaceans and plants, juveniles feed on sargassum and its associated fauna; nests April through August.

Federal Status: LE State Status: E SGCN: Y
Endemic: N Global Rank: G1 State Rank: S3

loggerhead sea turtle *Caretta caretta*

Inhabits tropical, subtropical, and temperate waters worldwide, including the Gulf of Mexico. They migrate from feeding grounds to nesting beaches/barrier islands and some nesting does occur in Texas (April to September). Beaches that are narrow, steeply sloped, with coarse-grain sand are preferred for nesting. Newly hatched individuals depend on floating algae/seaweed for protection and foraging, which eventually transport them offshore and into open ocean. Juveniles and young adults spend their lives in open ocean, offshore before migrating to coastal areas to breed and nest. Foraging areas for adults include shallow continental shelf waters.

Federal Status: LT State Status: T SGCN: Y
Endemic: N Global Rank: G3 State Rank: S4

northern cat-eyed snake *Leptodeira septentrionalis septentrionalis*

Terrestrial: Thorn scrub and deciduous woodland; dense thickets bordering ponds and streams.

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

slender glass lizard *Ophisaurus attenuatus*

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

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

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WILLACY COUNTY

REPTILES

Texas horned lizard *Phrynosoma cornutum*

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

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

Texas indigo snake *Drymarchon melanurus erebennus*

Terrestrial: Thornbush-chaparral woodland of south Texas, in particular dense riparian corridors. Can do well in suburban and irrigated croplands. Requires moist microhabitats, such as rodent burrows, for shelter.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5T4 State Rank: S4

Texas tortoise *Gopherus berlandieri*

Terrestrial: Open scrub woods, arid brush, lomas, grass-cactus association; often in areas with sandy well-drained soils. When inactive occupies shallow depressions dug at base of bush or cactus; sometimes in underground burrow or under object. Eggs are laid in nests dug in soil near or under bushes.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4 State Rank: S2

western box turtle *Terrapene ornata*

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.

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

western hognose snake *Heterodon nasicus*

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.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S4

PLANTS

Bailey's ballmoss *Tillandsia baileyi*

Epiphytic on various trees and tall shrubs, perhaps most common in mottes of Live oak on vegetated dunes and flats in coastal portions of the South Texas Sand Sheet, but also on evergreen sub-tropical woodlands along resacas in the Lower Rio Grande Valley; flowering (February-)April-May, but conspicuous throughout the year

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G2G3 State Rank: S2

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WILLACY COUNTY

PLANTS

- bristle nailwort** *Paronychia setacea*
Flowering vascular plant endemic to eastern southcentral Texas, occurring in sandy soils
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G3 State Rank: S2
- Cory's croton** *Croton coryi*
Grasslands and woodland openings on barrier islands and coastal sands of South Texas, inland on South Texas Sand Sheet; Annual; Flowering July-Oct; Fruiting July-Nov
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G3 State Rank: S3
- Elmendorf's onion** *Allium elmendorffii*
Grassland openings in oak woodlands on deep, loose, well-drained sands; in Coastal Bend, on Pleistocene barrier island ridges and Holocene Sand Sheet that support live oak woodlands; to the north it occurs in post oak-black hickory-live oak woodlands over Queen City and similar Eocene formations; one anomalous specimen found on Llano Uplift in wet pockets of granitic loam; Perennial; Flowering March-April, May
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2 State Rank: S2
- lila de los Llanos** *Echeandia chandleri*
Most commonly encountered among shrubs or in grassy openings in subtropical thorn shrublands on somewhat saline clays of lomas along Gulf Coast near mouth of Rio Grande; also observed in a few upland coastal prairie remnants on clay soils over the Beaumont Formation at inland sites well to the north and along railroad right-of-ways and cemeteries; flowering (May-) September-December, fruiting October-December
Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G2G3 State Rank: S2S3
- Runyon's water-willow** *Justicia runyonii*
Margins of and openings within subtropical woodlands or thorn shrublands on calcareous, alluvial, silty or clayey soils derived from Holocene silt and sand floodplain deposits of the Rio Grande Delta; can be common in narrow openings such as those provided by trails through dense ebony woodlands and is sometimes restricted to microdepressions; flowering (July-) September-November
Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G2 State Rank: S2
- small-leaved yellow velvet-leaf** *Wissadula parvifolia*
Occurs on sandy loams or clays in shrublands or woodlands on gently undulating terrain of the Holocene sand sheet over the Goliad Formation.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1 State Rank: S1
- South Texas false cudweed** *Pseudognaphalium austrotexanum*
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.
Federal Status: State Status: SGCN: Y

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WILLACY COUNTY

PLANTS

Endemic: N Global Rank: G3 State Rank: S3

South Texas yellow clammyweed *Polanisia erosa ssp. brevigliandulosa*

Sand plains of south Texas (Iltis 1958). Flowering early spring-mid fall.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G5T3T4 State Rank: S3S4

Texas ayenia *Ayenia limitaris*

Subtropical thorn woodland or tall shrubland on loamy soils of the Rio Grande Delta; known site soils include well-drained, calcareous, sandy clay loam (Hidalgo Series) and neutral to moderately alkaline, fine sandy loam (Willacy Series); also under or among taller shrubs in thorn woodland/thorn shrubland; flowering throughout the year with sufficient rainfall

Federal Status: LE State Status: E SGCN: Y
Endemic: N Global Rank: G2 State Rank: S1

Vasey's adelia *Adelia vaseyi*

Mostly subtropical evergreen/deciduous woodlands on loamy soils of Rio Grande Delta, but occasionally in shrublands on more xeric sandy to gravelly upland sites; Perennial; Flowering January-June

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

velvet spurge *Euphorbia innocua*

Open or brushy areas on coastal sands and the South Texas Sand Sheet; Perennial; Flowering Sept-April; Fruiting Nov-July

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

Wright's trichocoronis *Trichocoronis wrightii var. wrightii*

Most records from Texas are historical, perhaps indicating a decline as a result of alteration of wetland habitats; Annual; Flowering Feb-Oct; Fruiting Feb-Sept

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4T3 State Rank: S2

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ATTACHMENT E
Routine Wetland Determination Data Forms

SOILS

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 3/1	100	-	-	-	-	Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16 (MLRA 72 & 73 of LRR H)) 	<p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1 CM Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.</p>
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<p>Restrictive Layer (if present):</p> <p>Type: <u>--</u></p> <p>Depth (inches): <u>--</u></p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
---	--

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary indicators (minimum of one required; check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9) 		<ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 	<p>Secondary Indicators (minimum of two required)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
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<p>Field Observations:</p> <p>Surface Water Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Water Table Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Saturation Present? (includes capillary fringe) Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Depth (inches): <u>-</u></p> <p>Depth (inches): <u>-</u></p> <p>Depth (inches): <u>-</u></p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Magic Valley Solar Arrays City/County: Harlingen / Cameron Sampling Date: 3/24/2023
 Applicant/Owner: RGV Solar, LLC State: Texas Sampling Point: 2
 Investigator(s): Rafael Gomez Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): - Slope %: 0-1
 Subregion (LRR): J Lat: N Long: W Datum: NAD 1983
 Soil Map Unit Name: Raymondville clay loam NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are vegetation, Soil, Or hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are vegetation, Soil, Or hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <u> Terrace on site named Harligen. </u>			

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Coverage	Dominant Species?	Indicator Status	
1. <u> N/A </u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u> 0 </u> (A) Total Number of Dominant Species Across All Strata: <u> 3 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 0 </u> (A/B)
2. _____				
3. _____				
4. _____				
	<u> 0 </u> = Total Cover			
Sapling/Shrub Stratum (Plot Size: <u> 15' Radius </u>)				
1. <u> Celtis ehrenbergiana </u>	<u> 15 </u>	<u> Y </u>	<u> UPL </u>	Prevalence Index Worksheet: Total % Cover of: _____ Multiply By: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____				
3. _____				
4. _____				
5. _____				
	<u> 15 </u> = Total Cover			
Herb Stratum (Plot Size: <u> 5' Radius </u>)				
1. <u> Bothriochloa ischaemum </u>	<u> 40 </u>	<u> Y </u>	<u> UPL </u>	Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0' _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u> Helianthus annuus </u>	<u> 15 </u>	<u> Y </u>	<u> FACU </u>	
3. <u> Malvastrum americanum </u>	<u> 10 </u>	<u> N </u>	<u> UPL </u>	
4. <u> Verbesina encelioides </u>	<u> 5 </u>	<u> N </u>	<u> FAC </u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	<u> 70 </u> = Total Cover			
Woody Vine Stratum (Plot Size: <u> 15' Radius </u>)				
1. <u> N/A </u>				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____				
	<u> 0 </u> = Total Cover			
% Bare Ground in Herb Stratum <u> 30 </u>				
Remarks:				

SOILS

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 3/1	100	-	-	-	-	Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16 (MLRA 72 & 73 of LRR H) 	<p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1 CM Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.</p>
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<p>Restrictive Layer (if present):</p> <p>Type: <u>--</u></p> <p>Depth (inches): <u>--</u></p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
---	--

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary indicators (minimum of one required; check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9) 		<ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 	<p>Secondary Indicators (minimum of two required)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
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<p>Field Observations:</p> <p>Surface Water Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Water Table Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Saturation Present? (includes capillary fringe) Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Depth (inches): <u>-</u></p> <p>Depth (inches): <u>-</u></p> <p>Depth (inches): <u>-</u></p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Magic Valley Solar Arrays City/County: Raymondville / Willacy Sampling Date: 3/24/2023
 Applicant/Owner: RGV Solar, LLC State: Texas Sampling Point: 3
 Investigator(s): Rafael Gomez Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): None Slope %: 0-1
 Subregion (LRR): J Lat: N Long: W Datum: NAD 1983
 Soil Map Unit Name: Hidalgo sandy clay loam, 0 to 1 percent slopes NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are vegetation, Soil, Or hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are vegetation, Soil, Or hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <u> Active row-crop agriculture on site named Raymondville. </u>			

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Coverage	Dominant Species?	Indicator Status		
1. <u> N/A </u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u> 0 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 0 </u> (A/B)	
2. _____					
3. _____					
4. _____					
	<u> 0 </u>	= Total Cover			
Sapling/Shrub Stratum (Plot Size: <u> 15' Radius </u>)					
1. <u> N/A </u>				Prevalence Index Worksheet: Total % Cover of: _____ Multiply By: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. _____					
3. _____					
4. _____					
5. _____					
	<u> 0 </u>	= Total Cover			
Herb Stratum (Plot Size: <u> 5' Radius </u>)					
1. <u> Zea mays </u>	<u> 60 </u>	<u> Y </u>	<u> UPL </u>		
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
	<u> 60 </u>	= Total Cover			
Woody Vine Stratum (Plot Size: <u> 15' Radius </u>)					
1. <u> N/A </u>					
2. _____					
	<u> 0 </u>	= Total Cover			
% Bare Ground in Herb Stratum <u> 40 </u>					

Remarks:

SOILS

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 4/2	100	-	-	-	-	Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16 (MLRA 72 & 73 of LRR H)) 	<p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1 CM Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.</p>
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<p>Restrictive Layer (if present):</p> <p>Type: <u>--</u></p> <p>Depth (inches): <u>--</u></p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary indicators (minimum of one required; check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9) 		<ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 	<p>Secondary Indicators (minimum of two required)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
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<p>Field Observations:</p> <p>Surface Water Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Water Table Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Saturation Present? (includes capillary fringe) Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Depth (inches): <u>-</u></p> <p>Depth (inches): <u>-</u></p> <p>Depth (inches): <u>-</u></p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Magic Valley Solar Arrays City/County: Donna / Hidalgo Sampling Date: 3/24/2023
 Applicant/Owner: RGV Solar, LLC State: Texas Sampling Point: 4
 Investigator(s): Rafael Gomez Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): - Slope %: 0-1
 Subregion (LRR): J Lat: N Long: W Datum: NAD 1983
 Soil Map Unit Name: Benito clay, ponded NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are vegetation, Soil, Or hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are vegetation, Soil, Or hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <u> Site named Brownsville. </u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot Size: <u> 30' Radius </u>)	Absolute % Coverage	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u> Senegalia berlandieri </u>	<u> 15 </u>	<u> Y </u>	<u> UPL </u>	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u> 0 </u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u> 2 </u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 0 </u> (A/B)	
4. _____	<u> 15 </u> = Total Cover	_____	_____		
Sapling/Shrub Stratum (Plot Size: <u> 15' Radius </u>)				Prevalence Index Worksheet:	
1. <u> N/A </u>	_____	_____	_____	Total % Cover of: _____ Multiply By: _____	
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
	<u> 0 </u> = Total Cover	_____	_____	UPL species _____ x 5 = _____	
Herb Stratum (Plot Size: <u> 5' Radius </u>)				Column Totals: _____ (A) _____ (B)	
1. <u> Bothriochloa ischaemum </u>	<u> 70 </u>	<u> Y </u>	<u> UPL </u>	Prevalence Index = B/A = _____	
2. <u> Bothriochloa laguroides </u>	<u> 10 </u>	<u> N </u>	<u> UPL </u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	<u> 80 </u> = Total Cover	_____	_____		
Woody Vine Stratum (Plot Size: <u> 15' Radius </u>)				Hydrophytic Vegetation Indicators:	
1. <u> N/A </u>	_____	_____	_____	_____ 1 - Rapid Test for Hydrophytic Vegetation	
2. _____	_____	_____	_____	_____ 2 - Dominance Test is > 50%	
	<u> 0 </u> = Total Cover	_____	_____	_____ 3 - Prevalence Index is ≤ 3.0 ¹	
% Bare Ground in Herb Stratum <u> 20 </u>				_____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
Remarks:				_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:

SOILS

Sampling Point: 4 _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 4/2	100	-	-	-	-	Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) <input type="checkbox"/> Depleted below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16 (MLRA 72 & 73 of LRR H) 	<p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1 CM Muck (A9) (LRR I, J) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) <input type="checkbox"/> Dark Surface (S7) (LRR G) <input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.</p>
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<p>Restrictive Layer (if present):</p> <p>Type: -- _____</p> <p>Depth (inches): -- _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary indicators (minimum of one required; check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water Stained Leaves (B9) 		<ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks) 	<p>Secondary Indicators (minimum of two required)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
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<p>Field Observations:</p> <p>Surface Water Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Water Table Present? Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Saturation Present? (includes capillary fringe) Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/></p> <p>Depth (inches): - _____</p> <p>Depth (inches): - _____</p> <p>Depth (inches): - _____</p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ATTACHMENT F
Environmental Risk Assessment

EJScreen Report (Version 2.11)



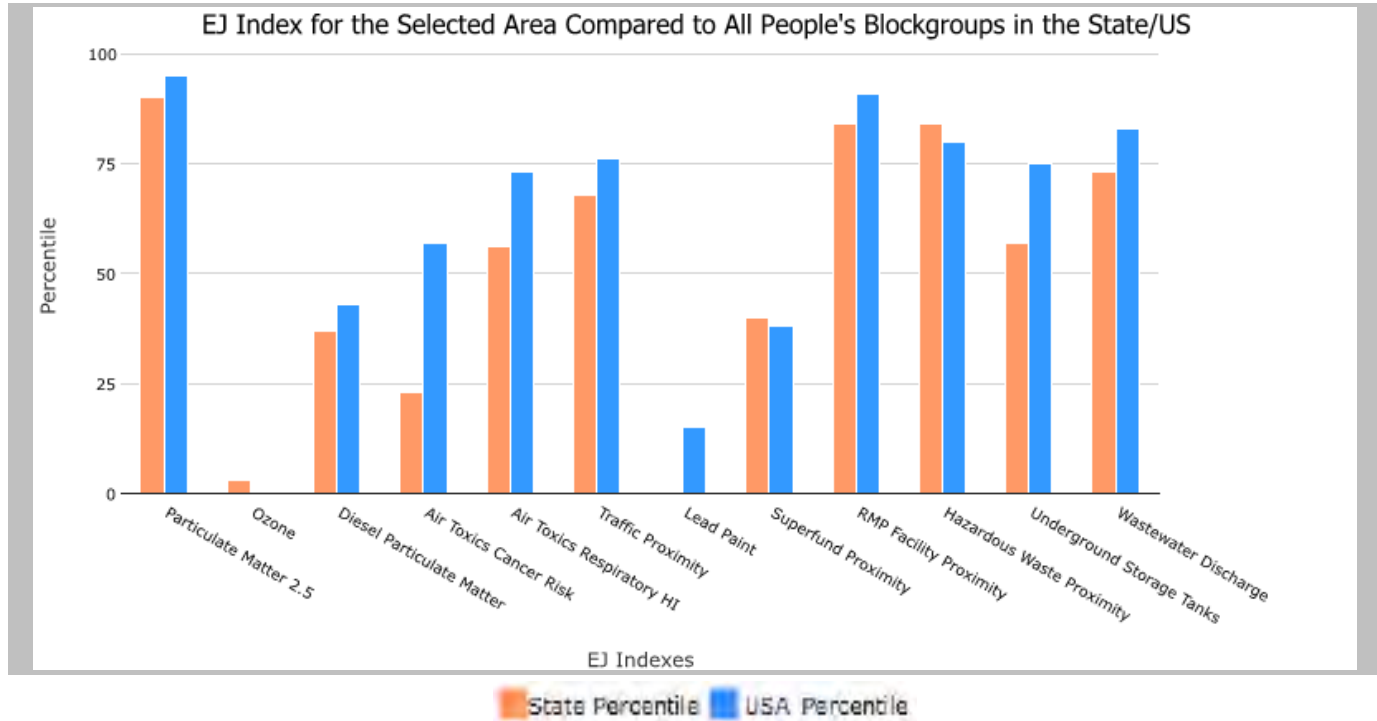
1 mile Ring Centered at 25.956541,-97.449759, TEXAS, EPA Region 6

Approximate Population: 4,123

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
Particulate Matter 2.5 EJ index	90	95
Ozone EJ index	3	0
Diesel Particulate Matter EJ index*	37	43
Air Toxics Cancer Risk EJ index*	23	57
Air Toxics Respiratory HI EJ index*	56	73
Traffic Proximity EJ index	68	76
Lead Paint EJ index	0	15
Superfund Proximity EJ index	40	38
RMP Facility Proximity EJ index	84	91
Hazardous Waste Proximity EJ index	84	80
Underground Storage Tanks EJ index	57	75
Wastewater Discharge EJ index	73	83

EJ Indexes - The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.



*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

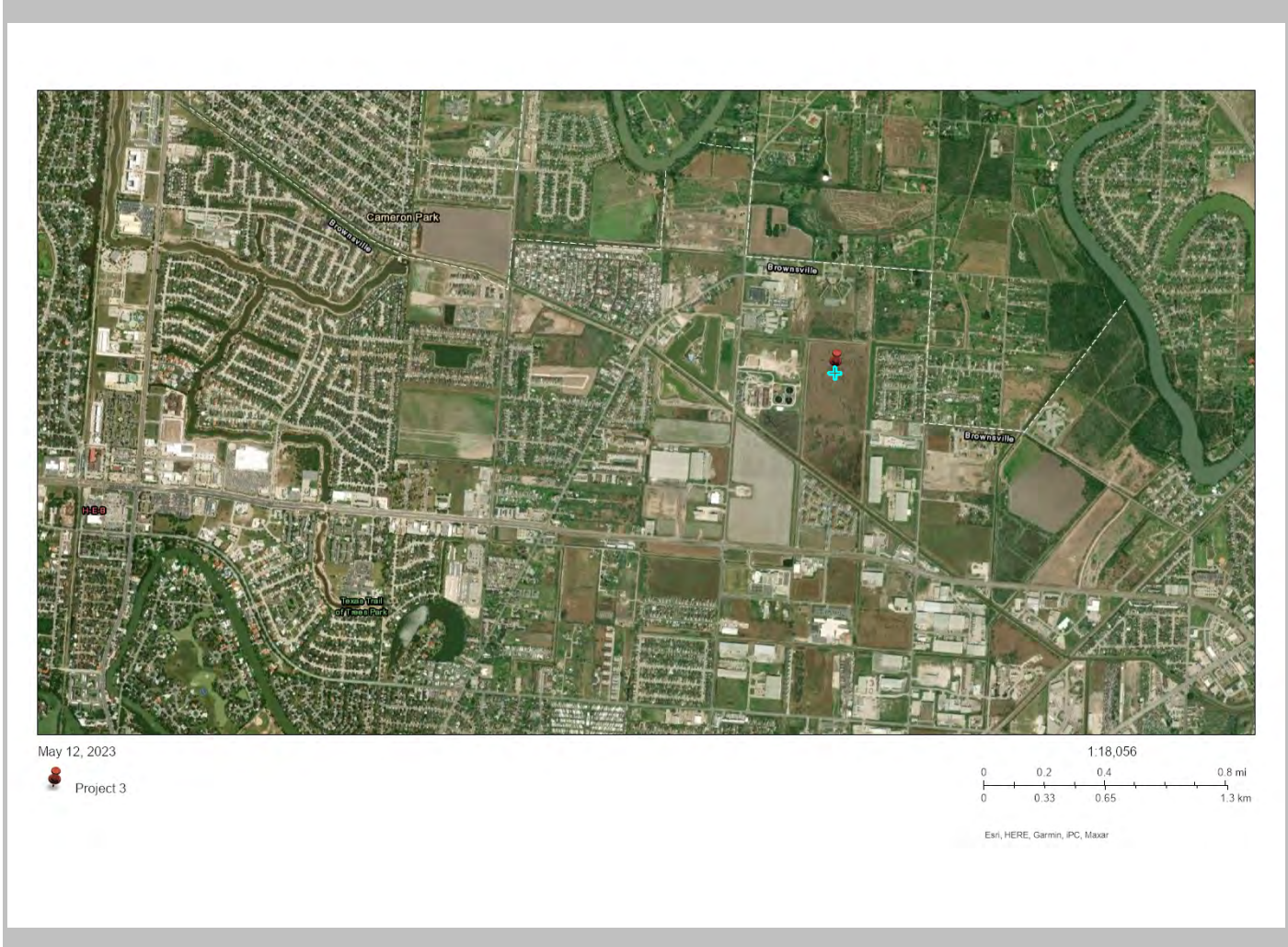
EJScreen Report (Version 2.11)



1 mile Ring Centered at 25.956541,-97.449759, TEXAS, EPA Region 6

Approximate Population: 4,123

Input Area (sq. miles): 3.14



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

EJScreen Report (Version 2.11)



1 mile Ring Centered at 25.956541,-97.449759, TEXAS, EPA Region 6

Approximate Population: 4,123

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	10.5	9.5	88	8.67	89
Ozone (ppb)	25.8	40	1	42.5	0
Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.0983	0.211	17	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	20	31	19	28	<50th
Air Toxics Respiratory HI*	0.3	0.35	45	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	270	570	55	760	53
Lead Paint (% Pre-1960 Housing)	0.0011	0.14	0	0.27	0
Superfund Proximity (site count/km distance)	0.015	0.084	18	0.13	11
RMP Facility Proximity (facility count/km distance)	1.3	0.94	76	0.77	80
Hazardous Waste Proximity (facility count/km distance)	0.77	0.72	72	2.2	51
Underground Storage Tanks (count/km ²)	0.76	2.3	36	3.9	44
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0013	0.38	51	12	51
Socioeconomic Indicators					
Demographic Index	68%	46%	78	35%	88
Supplemental Demographic Index	20%	17%	66	15%	77
People of Color	91%	59%	80	40%	89
Low Income	45%	33%	67	30%	75
Unemployment Rate	5%	5%	57	5%	56
Limited English Speaking Households	8%	7%	68	5%	81
Less Than High School Education	23%	16%	71	12%	85
Under Age 5	11%	7%	81	6%	87
Over Age 64	11%	13%	45	16%	31
Low Life Expectancy	15%	20%	7	20%	12

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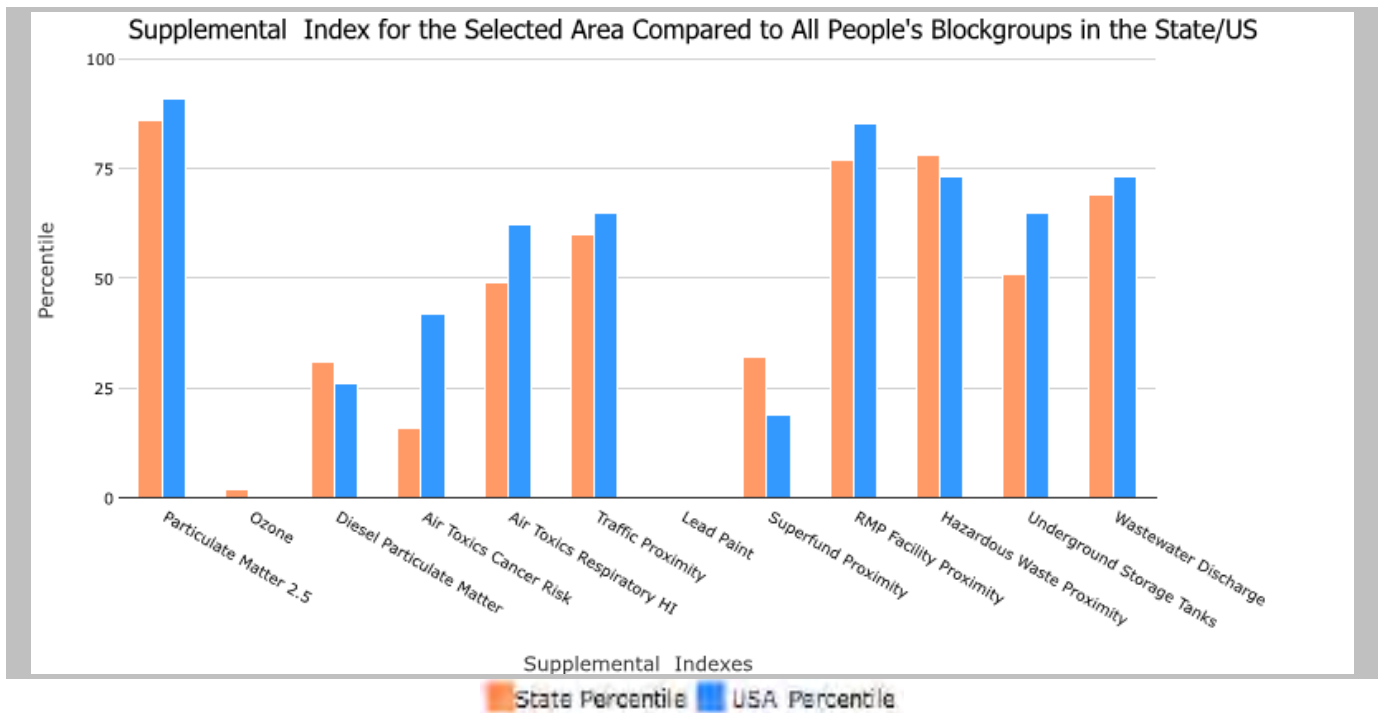
1 mile Ring Centered at 25.956541,-97.449759, TEXAS, EPA Region 6

Approximate Population: 4,123

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Supplemental Indexes		
Particulate Matter 2.5 Supplemental Index	86	91
Ozone Supplemental Index	2	0
Diesel Particulate Matter Supplemental Index*	31	26
Air Toxics Cancer Risk Supplemental Index*	16	42
Air Toxics Respiratory HI Supplemental Index*	49	62
Traffic Proximity Supplemental Index	60	65
Lead Paint Supplemental Index	0	0
Superfund Proximity Supplemental Index	32	19
RMP Facility Proximity Supplemental Index	77	85
Hazardous Waste Proximity Supplemental Index	78	73
Underground Storage Tanks Supplemental Index	51	65
Wastewater Discharge Supplemental Index	69	73

Supplemental Indexes - The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on low-income, limited English speaking, less than high school education, unemployed, and low life expectancy populations with a single environmental indicator.



This report shows the values for environmental and demographic indicators, EJScreen indexes, and supplemental indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. For additional information, see: www.epa.gov/environmentaljustice.

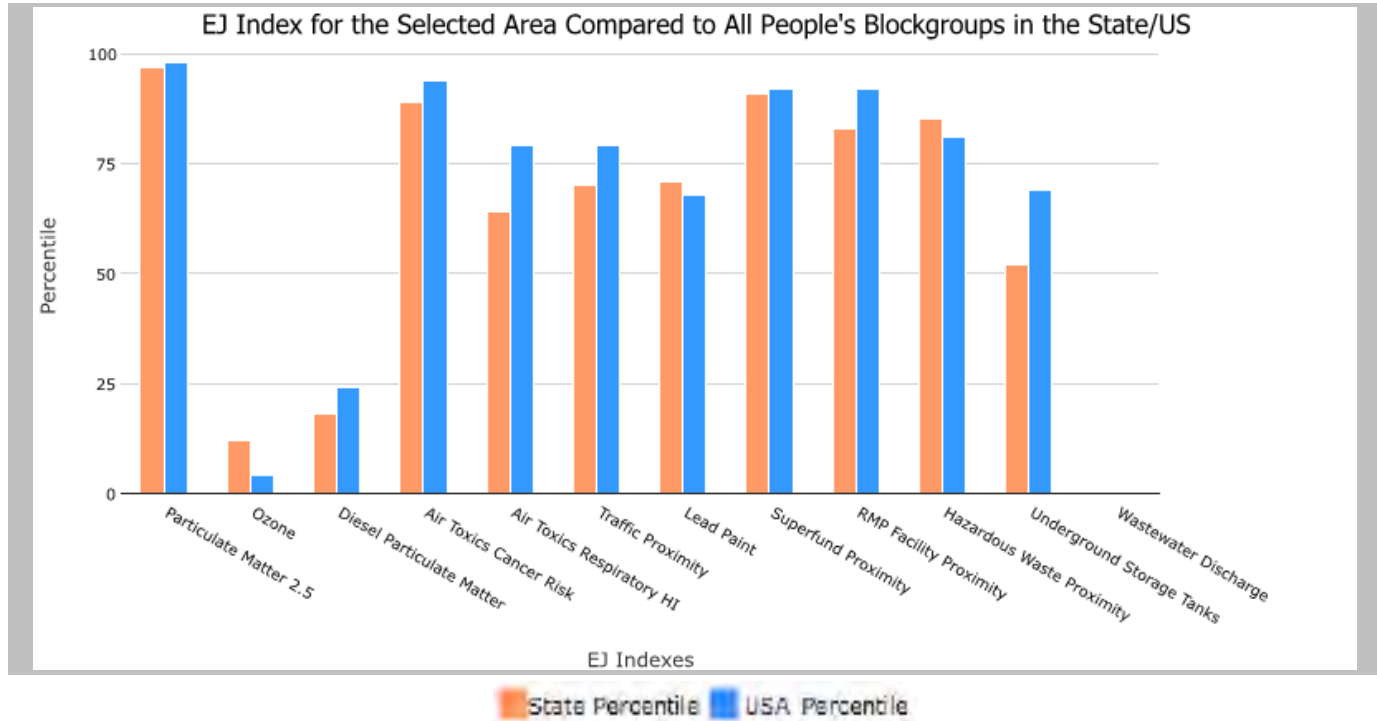
1 mile Ring Centered at 26.200036,-98.056734, TEXAS, EPA Region 6

Approximate Population: 2,700

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
Particulate Matter 2.5 EJ index	97	98
Ozone EJ index	12	4
Diesel Particulate Matter EJ index*	18	24
Air Toxics Cancer Risk EJ index*	89	94
Air Toxics Respiratory HI EJ index*	64	79
Traffic Proximity EJ index	70	79
Lead Paint EJ index	71	68
Superfund Proximity EJ index	91	92
RMP Facility Proximity EJ index	83	92
Hazardous Waste Proximity EJ index	85	81
Underground Storage Tanks EJ index	52	69
Wastewater Discharge EJ index	N/A	N/A

EJ Indexes - The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

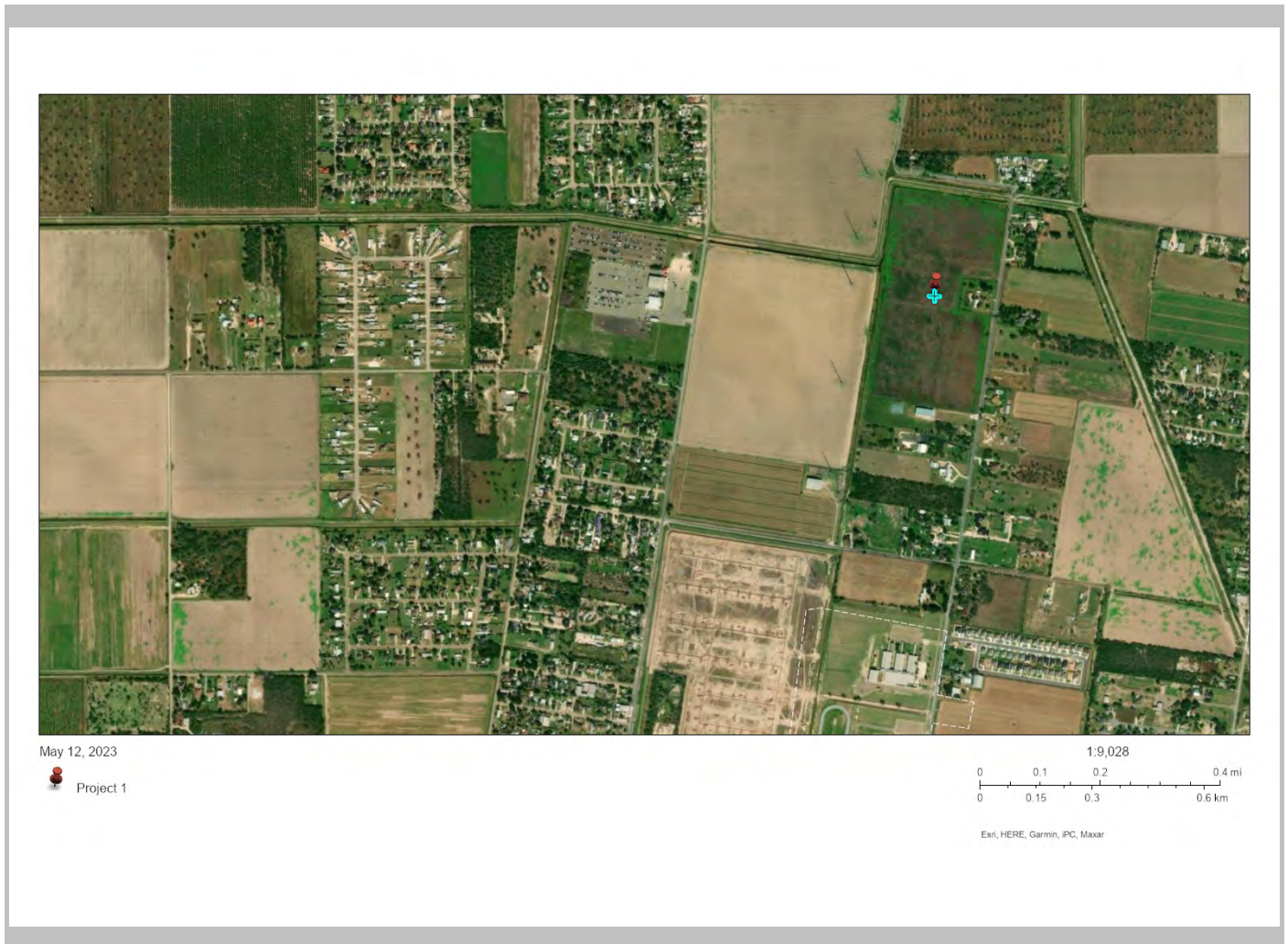


*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

1 mile Ring Centered at 26.200036,-98.056734, TEXAS, EPA Region 6

Approximate Population: 2,700

Input Area (sq. miles): 3.14



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJScreen Report (Version 2.11)



1 mile Ring Centered at 26.200036,-98.056734, TEXAS, EPA Region 6

Approximate Population: 2,700

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	11.1	9.5	98	8.67	92
Ozone (ppb)	28.9	40	5	42.5	1
Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.065	0.211	6	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	30	31	83	28	80-90th
Air Toxics Respiratory HI*	0.3	0.35	45	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	250	570	53	760	51
Lead Paint (% Pre-1960 Housing)	0.08	0.14	54	0.27	31
Superfund Proximity (site count/km distance)	0.098	0.084	76	0.13	66
RMP Facility Proximity (facility count/km distance)	0.85	0.94	64	0.77	71
Hazardous Waste Proximity (facility count/km distance)	0.61	0.72	66	2.2	47
Underground Storage Tanks (count/km ²)	0.85	2.3	38	3.9	45
Wastewater Discharge (toxicity-weighted concentration/m distance)	N/A	0.38	N/A	12	N/A
Socioeconomic Indicators					
Demographic Index	79%	46%	90	35%	95
Supplemental Demographic Index	27%	17%	84	15%	91
People of Color	99%	59%	94	40%	96
Low Income	59%	33%	83	30%	87
Unemployment Rate	6%	5%	68	5%	67
Limited English Speaking Households	13%	7%	78	5%	88
Less Than High School Education	38%	16%	88	12%	95
Under Age 5	5%	7%	43	6%	50
Over Age 64	7%	13%	28	16%	17
Low Life Expectancy	19%	20%	41	20%	47

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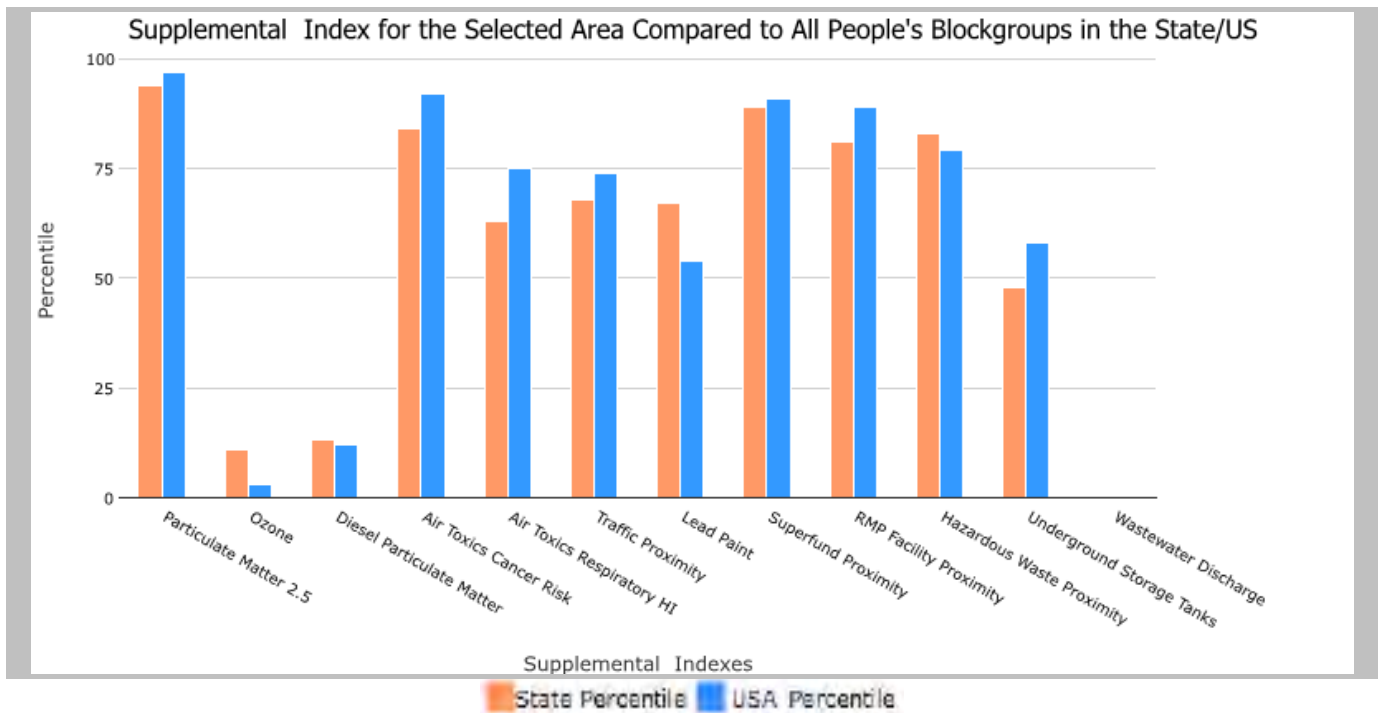
1 mile Ring Centered at 26.200036,-98.056734, TEXAS, EPA Region 6

Approximate Population: 2,700

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Supplemental Indexes		
Particulate Matter 2.5 Supplemental Index	94	97
Ozone Supplemental Index	11	3
Diesel Particulate Matter Supplemental Index*	13	12
Air Toxics Cancer Risk Supplemental Index*	84	92
Air Toxics Respiratory HI Supplemental Index*	63	75
Traffic Proximity Supplemental Index	68	74
Lead Paint Supplemental Index	67	54
Superfund Proximity Supplemental Index	89	91
RMP Facility Proximity Supplemental Index	81	89
Hazardous Waste Proximity Supplemental Index	83	79
Underground Storage Tanks Supplemental Index	48	58
Wastewater Discharge Supplemental Index	N/A	N/A

Supplemental Indexes - The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on low-income, limited English speaking, less than high school education, unemployed, and low life expectancy populations with a single environmental indicator.



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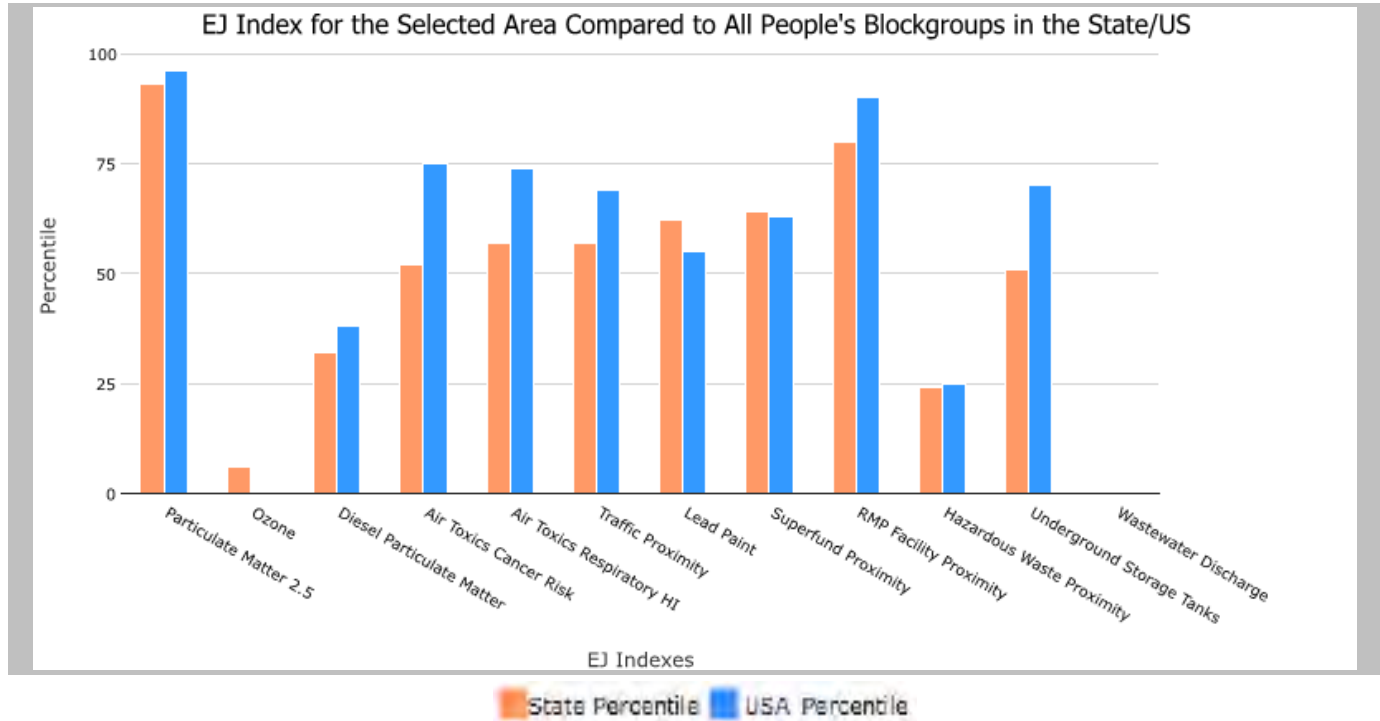
1 mile Ring Centered at 26.217384,-97.732994, TEXAS, EPA Region 6

Approximate Population: 5,262

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
Particulate Matter 2.5 EJ index	93	96
Ozone EJ index	6	0
Diesel Particulate Matter EJ index*	32	38
Air Toxics Cancer Risk EJ index*	52	75
Air Toxics Respiratory HI EJ index*	57	74
Traffic Proximity EJ index	57	69
Lead Paint EJ index	62	55
Superfund Proximity EJ index	64	63
RMP Facility Proximity EJ index	80	90
Hazardous Waste Proximity EJ index	24	25
Underground Storage Tanks EJ index	51	70
Wastewater Discharge EJ index	N/A	N/A

EJ Indexes - The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

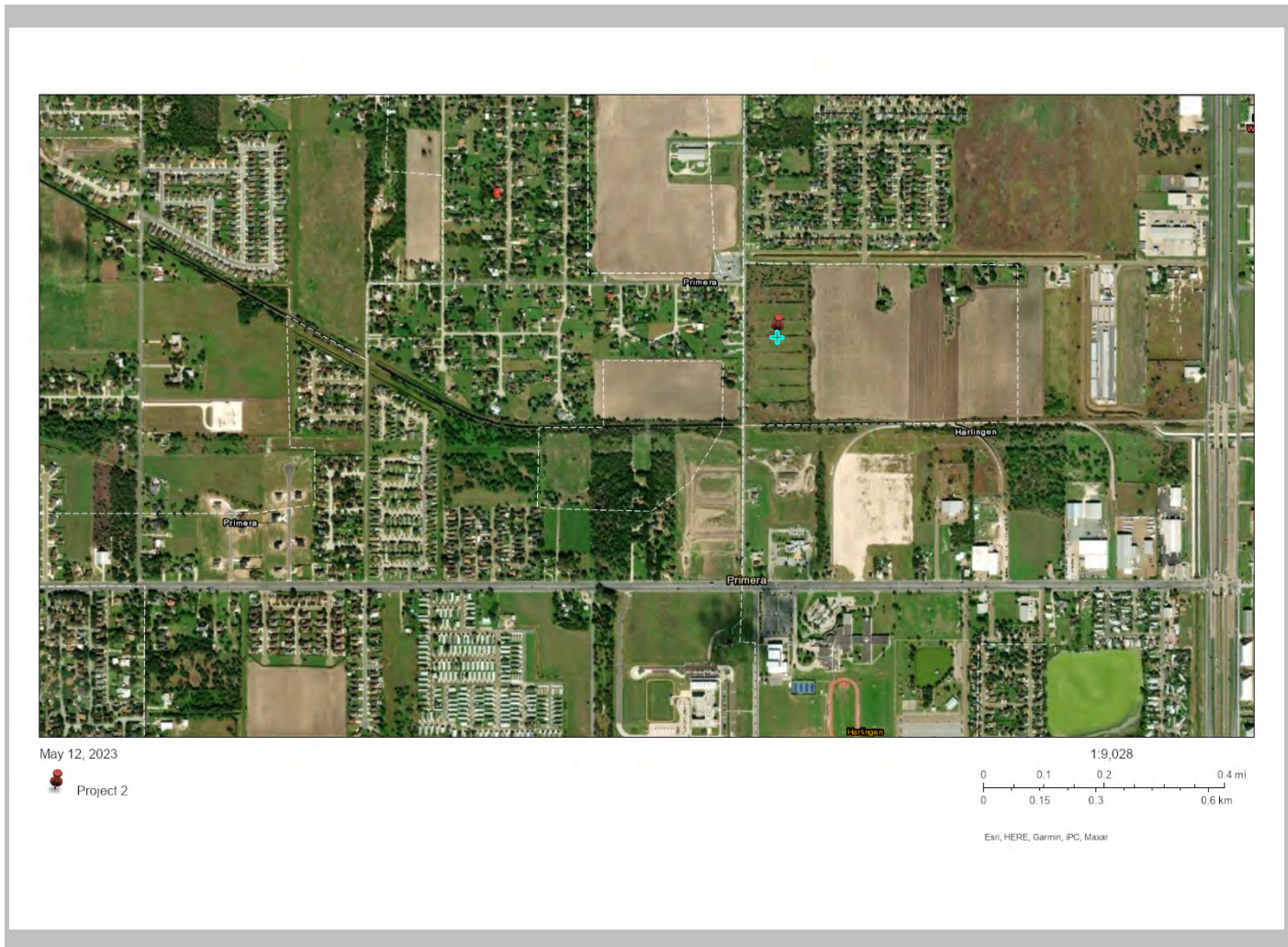


*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

1 mile Ring Centered at 26.217384,-97.732994, TEXAS, EPA Region 6

Approximate Population: 5,262

Input Area (sq. miles): 3.14



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJScreen Report (Version 2.11)



1 mile Ring Centered at 26.217384,-97.732994, TEXAS, EPA Region 6

Approximate Population: 5,262

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	10.8	9.5	96	8.67	91
Ozone (ppb)	27.4	40	3	42.5	0
Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.0876	0.211	13	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	24	31	43	28	50-60th
Air Toxics Respiratory HI*	0.3	0.35	45	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	130	570	37	760	38
Lead Paint (% Pre-1960 Housing)	0.05	0.14	47	0.27	26
Superfund Proximity (site count/km distance)	0.027	0.084	37	0.13	26
RMP Facility Proximity (facility count/km distance)	0.95	0.94	68	0.77	74
Hazardous Waste Proximity (facility count/km distance)	0.037	0.72	10	2.2	6
Underground Storage Tanks (count/km ²)	0.66	2.3	34	3.9	42
Wastewater Discharge (toxicity-weighted concentration/m distance)	N/A	0.38	N/A	12	N/A
Socioeconomic Indicators					
Demographic Index	70%	46%	80	35%	89
Supplemental Demographic Index	21%	17%	71	15%	81
People of Color	93%	59%	83	40%	91
Low Income	47%	33%	69	30%	76
Unemployment Rate	4%	5%	51	5%	49
Limited English Speaking Households	10%	7%	74	5%	85
Less Than High School Education	28%	16%	77	12%	89
Under Age 5	8%	7%	68	6%	76
Over Age 64	8%	13%	30	16%	19
Low Life Expectancy	17%	20%	15	20%	23

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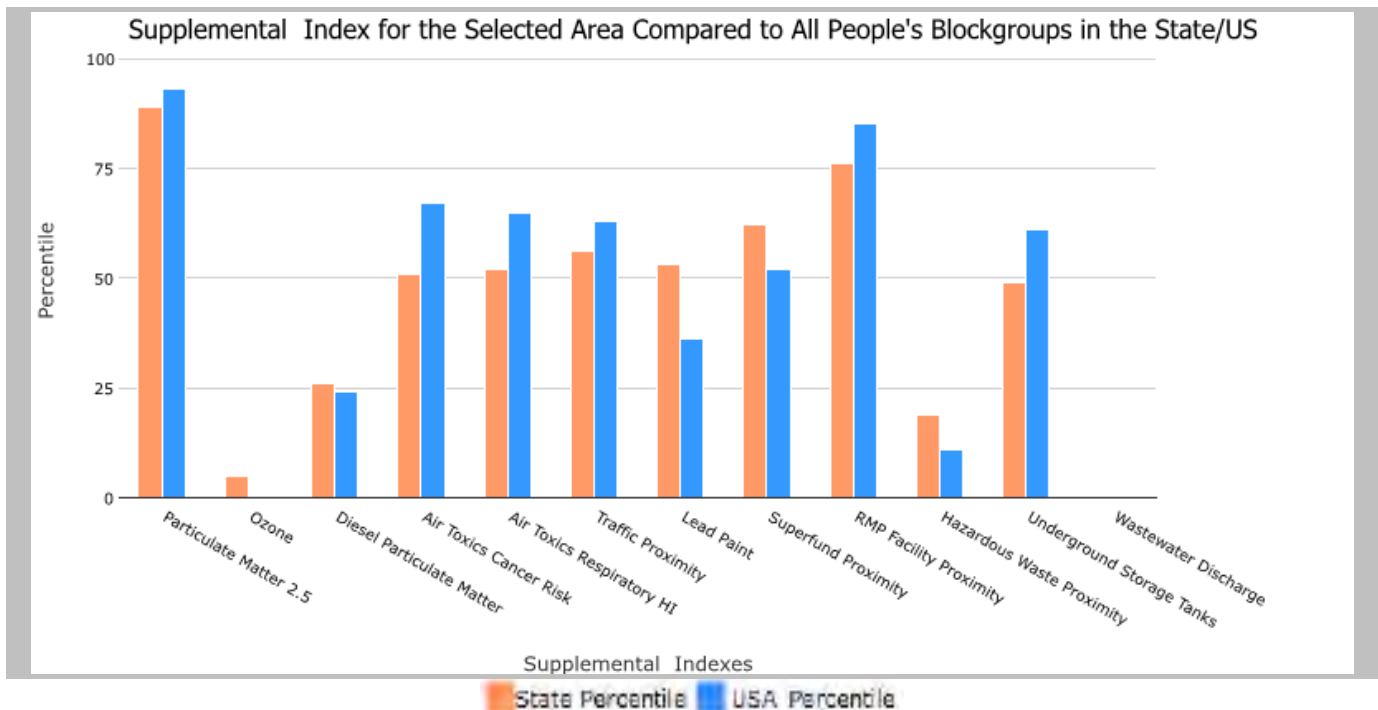
1 mile Ring Centered at 26.217384,-97.732994, TEXAS, EPA Region 6

Approximate Population: 5,262

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Supplemental Indexes		
Particulate Matter 2.5 Supplemental Index	89	93
Ozone Supplemental Index	5	0
Diesel Particulate Matter Supplemental Index*	26	24
Air Toxics Cancer Risk Supplemental Index*	51	67
Air Toxics Respiratory HI Supplemental Index*	52	65
Traffic Proximity Supplemental Index	56	63
Lead Paint Supplemental Index	53	36
Superfund Proximity Supplemental Index	62	52
RMP Facility Proximity Supplemental Index	76	85
Hazardous Waste Proximity Supplemental Index	19	11
Underground Storage Tanks Supplemental Index	49	61
Wastewater Discharge Supplemental Index	N/A	N/A

Supplemental Indexes - The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on low-income, limited English speaking, less than high school education, unemployed, and low life expectancy populations with a single environmental indicator.



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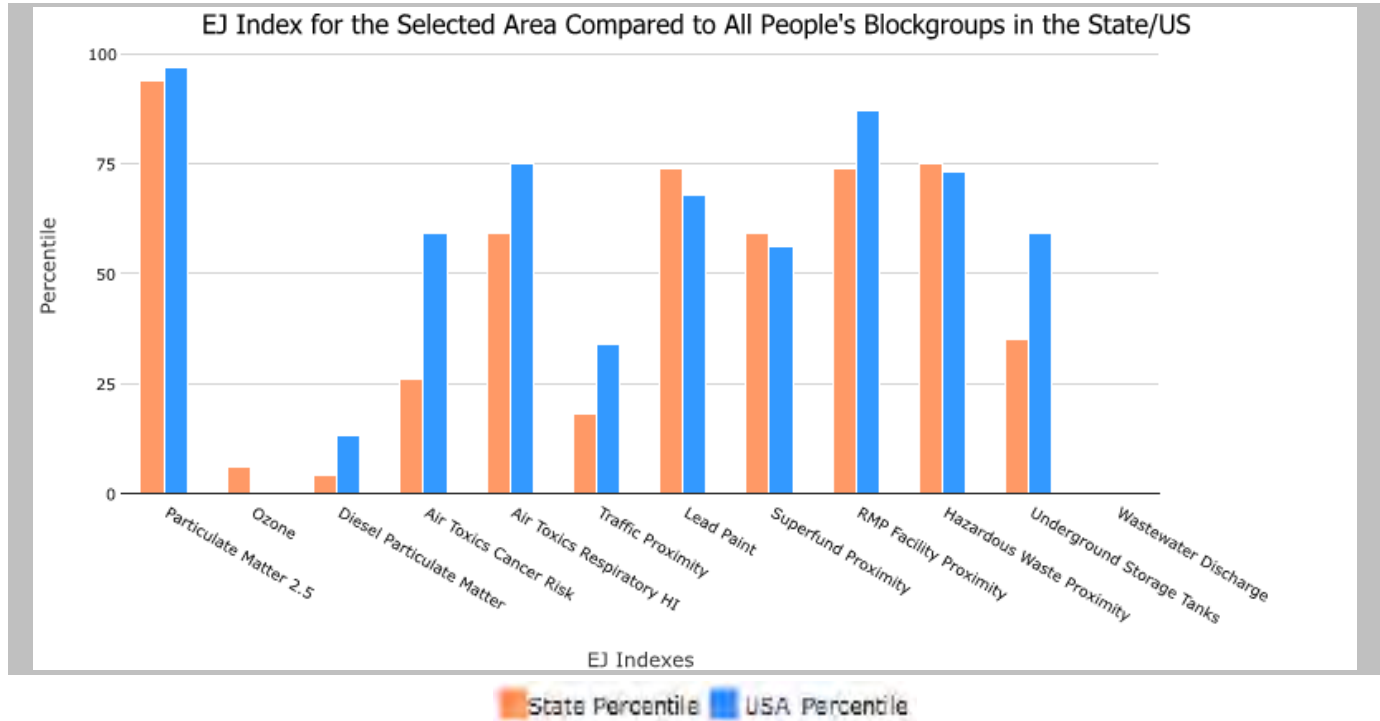
1 mile Ring Centered at 26.469382,-97.844453, TEXAS, EPA Region 6

Approximate Population: 42

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
Particulate Matter 2.5 EJ index	94	97
Ozone EJ index	6	0
Diesel Particulate Matter EJ index*	4	13
Air Toxics Cancer Risk EJ index*	26	59
Air Toxics Respiratory HI EJ index*	59	75
Traffic Proximity EJ index	18	34
Lead Paint EJ index	74	68
Superfund Proximity EJ index	59	56
RMP Facility Proximity EJ index	74	87
Hazardous Waste Proximity EJ index	75	73
Underground Storage Tanks EJ index	35	59
Wastewater Discharge EJ index	N/A	N/A

EJ Indexes - The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

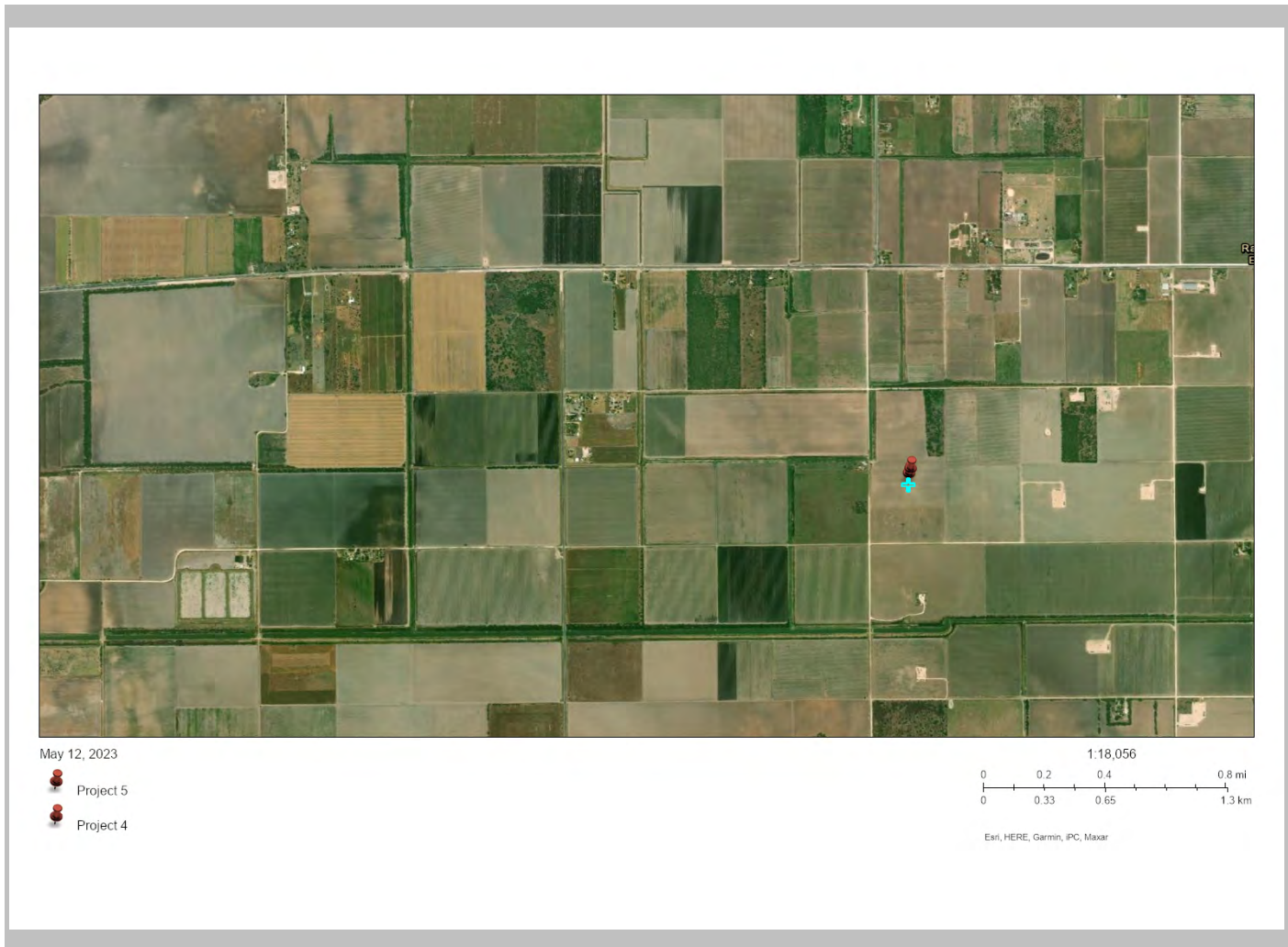


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1 mile Ring Centered at 26.469382,-97.844453, TEXAS, EPA Region 6

Approximate Population: 42

Input Area (sq. miles): 3.14



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJScreen Report (Version 2.11)



1 mile Ring Centered at 26.469382,-97.844453, TEXAS, EPA Region 6

Approximate Population: 42

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	10.6	9.5	96	8.67	90
Ozone (ppb)	27.5	40	3	42.5	0
Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.0456	0.211	2	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	20	31	19	28	<50th
Air Toxics Respiratory HI*	0.3	0.35	45	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	14	570	7	760	11
Lead Paint (% Pre-1960 Housing)	0.06	0.14	50	0.27	28
Superfund Proximity (site count/km distance)	0.021	0.084	30	0.13	19
RMP Facility Proximity (facility count/km distance)	0.6	0.94	54	0.77	63
Hazardous Waste Proximity (facility count/km distance)	0.44	0.72	59	2.2	42
Underground Storage Tanks (count/km ²)	0.086	2.3	18	3.9	27
Wastewater Discharge (toxicity-weighted concentration/m distance)	N/A	0.38	N/A	12	N/A
Socioeconomic Indicators					
Demographic Index	73%	46%	83	35%	91
Supplemental Demographic Index	28%	17%	85	15%	92
People of Color	92%	59%	82	40%	90
Low Income	53%	33%	77	30%	83
Unemployment Rate	7%	5%	71	5%	70
Limited English Speaking Households	16%	7%	82	5%	90
Less Than High School Education	40%	16%	90	12%	96
Under Age 5	10%	7%	77	6%	84
Over Age 64	7%	13%	25	16%	15
Low Life Expectancy	22%	20%	72	20%	72

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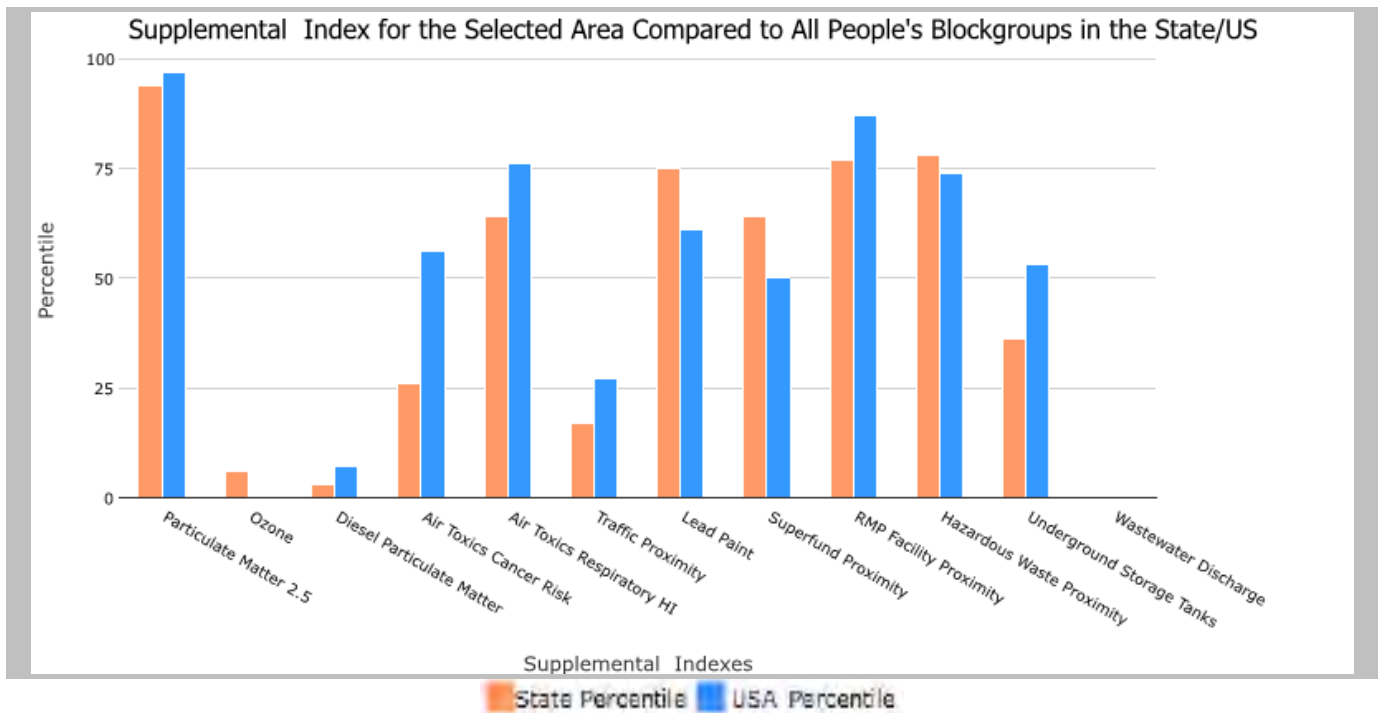
1 mile Ring Centered at 26.469382,-97.844453, TEXAS, EPA Region 6

Approximate Population: 42

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Supplemental Indexes		
Particulate Matter 2.5 Supplemental Index	94	97
Ozone Supplemental Index	6	0
Diesel Particulate Matter Supplemental Index*	3	7
Air Toxics Cancer Risk Supplemental Index*	26	56
Air Toxics Respiratory HI Supplemental Index*	64	76
Traffic Proximity Supplemental Index	17	27
Lead Paint Supplemental Index	75	61
Superfund Proximity Supplemental Index	64	50
RMP Facility Proximity Supplemental Index	77	87
Hazardous Waste Proximity Supplemental Index	78	74
Underground Storage Tanks Supplemental Index	36	53
Wastewater Discharge Supplemental Index	N/A	N/A

Supplemental Indexes - The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on low-income, limited English speaking, less than high school education, unemployed, and low life expectancy populations with a single environmental indicator.



This report shows the values for environmental and demographic indicators, EJScreen indexes, and supplemental indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. For additional information, see: www.epa.gov/environmentaljustice.

NEPAssist Report

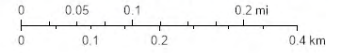
A3 Landscape



October 31, 2023

- + Search Result (point)
- Project 1

1:5,733



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Project Location	25.953735, -97.44781
Within 0.5 miles of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a Federal Land?	no
Within 0.5 miles of an impaired stream?	no
Within 0.5 miles of an impaired waterbody?	no
Within 0.5 miles of a waterbody?	yes
Within 0.5 miles of a stream?	yes
Within 0.5 miles of an NWI wetland?	Available Online
Within 0.5 miles of a Brownfields site?	no
Within 0.5 miles of a Superfund site?	no
Within 0.5 miles of a Toxic Release Inventory (TRI) site?	no
Within 0.5 miles of a water discharger (NPDES)?	yes
Within 0.5 miles of a hazardous waste (RCRA) facility?	no
Within 0.5 miles of an air emission facility?	no
Within 0.5 miles of a school?	no
Within 0.5 miles of an airport?	no

Within 0.5 miles of a hospital?	no
Within 0.5 miles of a designated sole source aquifer?	no
Within 0.5 miles of a historic property on the National Register of Historic Places?	no
Within 0.5 miles of a Toxic Substances Control Act (TSCA) site?	no
Within 0.5 miles of a Land Cession Boundary?	no
Within 0.5 miles of a tribal area (lower 48 states)?	no
Within 0.5 miles of the service area of a mitigation or conservation bank?	no
Within 0.5 miles of the service area of an In-Lieu-Fee Program?	no
Within 0.5 miles of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 0.5 miles of a Munitions Response Site?	no
Within 0.5 miles of an Essential Fish Habitat (EFH)?	no
Within 0.5 miles of a Habitat Area of Particular Concern (HAPC)?	no
Within 0.5 miles of an EFH Area Protected from Fishing (EFHA)?	no
Within 0.5 miles of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 0.5 miles of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 0.5 miles of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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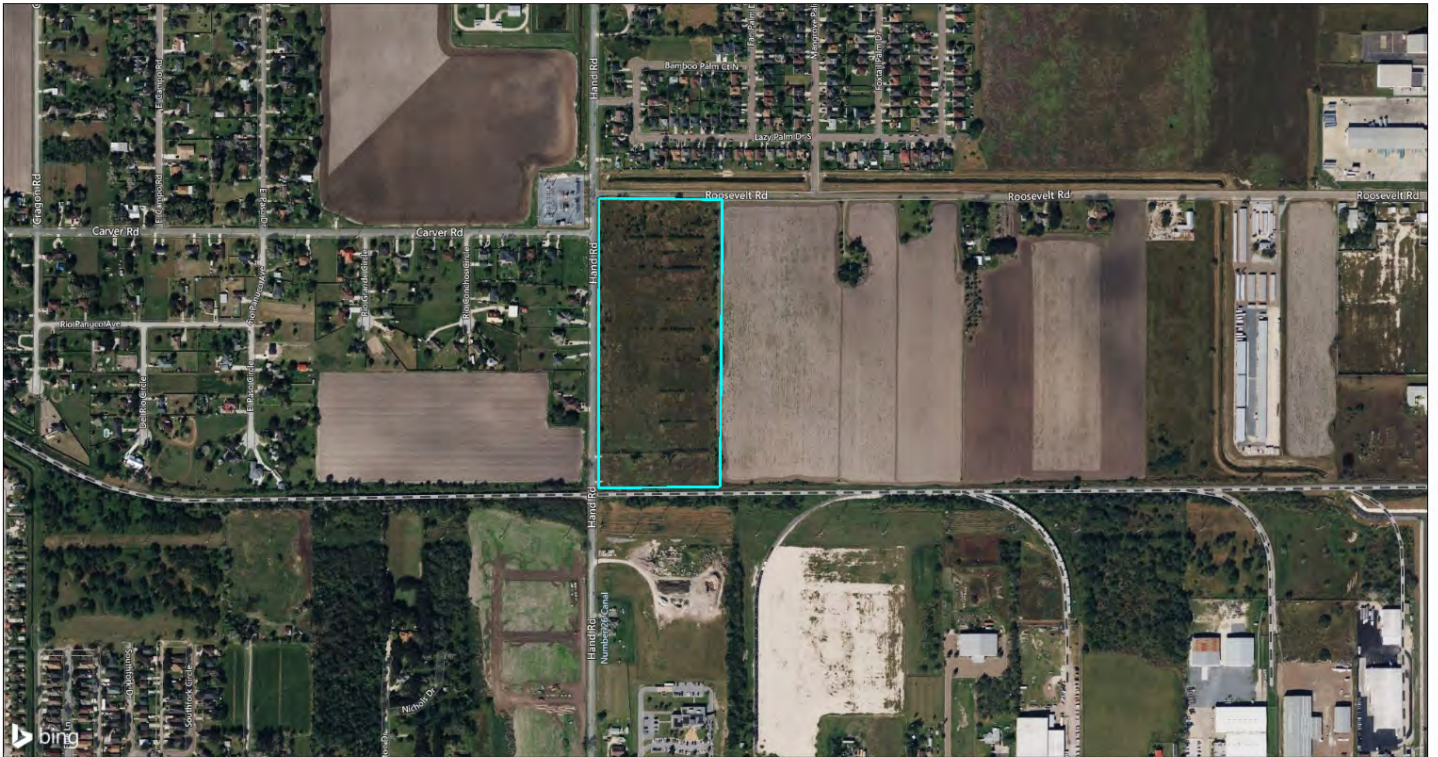
Within 0.5 miles of a school?	no
Within 0.5 miles of an airport?	no
Within 0.5 miles of a hospital?	no
Within 0.5 miles of a designated sole source aquifer?	no
Within 0.5 miles of a historic property on the National Register of Historic Places?	no
Within 0.5 miles of a Toxic Substances Control Act (TSCA) site?	no
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Within 0.5 miles of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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NEPAssist Report

Harlingen Site

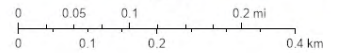
A3 Landscape



October 31, 2023

— Harlingen Site

1:5,733



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Input Coordinates: 26.219109,-97.733783,26.219090,-97.732002,26.215365,-97.732034,26.215346,-97.733793,26.219109,-97.733783

Length of digitized line	0.74 mi
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Within 0.5 miles of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a Federal Land?	no
Within 0.5 miles of an impaired stream?	no
Within 0.5 miles of an impaired waterbody?	no
Within 0.5 miles of a waterbody?	yes
Within 0.5 miles of a stream?	yes
Within 0.5 miles of an NWI wetland?	Available Online
Within 0.5 miles of a Brownfields site?	no
Within 0.5 miles of a Superfund site?	no
Within 0.5 miles of a Toxic Release Inventory (TRI) site?	no
Within 0.5 miles of a water discharger (NPDES)?	yes
Within 0.5 miles of a hazardous waste (RCRA) facility?	yes

Within 0.5 miles of an air emission facility?	no
Within 0.5 miles of a school?	yes
Within 0.5 miles of an airport?	no
Within 0.5 miles of a hospital?	no
Within 0.5 miles of a designated sole source aquifer?	no
Within 0.5 miles of a historic property on the National Register of Historic Places?	no
Within 0.5 miles of a Toxic Substances Control Act (TSCA) site?	no
Within 0.5 miles of a Land Cession Boundary?	no
Within 0.5 miles of a tribal area (lower 48 states)?	no
Within 0.5 miles of the service area of a mitigation or conservation bank?	no
Within 0.5 miles of the service area of an In-Lieu-Fee Program?	no
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Within 0.5 miles of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 0.5 miles of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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NEPAssist Report

Raymondville Site

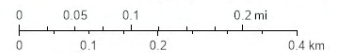
A3 Landscape



October 31, 2023

Raymondville Site

1:5,733



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Input Coordinates: 26.470283,-97.846519,26.468285,-97.846465,26.468343,-97.842592,26.470292,-97.842592,26.470292,-97.846529

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Within 0.5 miles of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
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Within 0.5 miles of an NWI wetland?	Available Online
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Within 0.5 miles of a water discharger (NPDES)?	no
Within 0.5 miles of a hazardous waste (RCRA) facility?	no

Within 0.5 miles of an air emission facility?	no
Within 0.5 miles of a school?	no
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Within 0.5 miles of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

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United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Willacy County, Texas**

Raymondville



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Map Unit Legend.....	8
Map Unit Descriptions.....	8
Willacy County, Texas.....	10
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Rg—Rio sandy clay loam, ponded.....	11
References	13

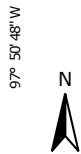
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

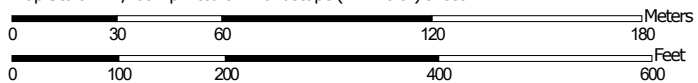
Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.




Map Scale: 1:2,160 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Willacy County, Texas
 Survey Area Data: Version 20, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 21, 2021—Mar 2, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HoA	Hidalgo sandy clay loam, 0 to 1 percent slopes	16.8	78.0%
Rg	Rio sandy clay loam, ponded	4.7	22.0%
Totals for Area of Interest		21.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Willacy County, Texas

HoA—Hidalgo sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxl
Elevation: 20 to 500 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: sandy clay loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

Minor Components

Raymondville

Percent of map unit: 7 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Racombes

Percent of map unit: 6 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Willacy

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY023TX - Sandy Loam
Hydric soil rating: No

Rg—Rio sandy clay loam, ponded

Map Unit Setting

National map unit symbol: djn6
Elevation: 10 to 500 feet
Mean annual precipitation: 18 to 34 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 310 to 350 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Rio and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rio

Setting

Landform: Delta plains
Down-slope shape: Concave
Across-slope shape: Concave

Custom Soil Resource Report

Parent material: Clayey alluvium

Typical profile

H1 - 0 to 10 inches: sandy clay loam

H2 - 10 to 44 inches: clay

H3 - 44 to 65 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: R083DY007TX - Lakebed

Hydric soil rating: Yes

Minor Components

Unnamed

Percent of map unit: 15 percent

Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
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Custom Soil Resource Report for Hidalgo County, Texas

Donna



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map




Map Scale: 1:3,470 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hidalgo County, Texas
 Survey Area Data: Version 21, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 7, 2021—Jan 14, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
28	Hidalgo sandy clay loam, 0 to 1 percent slopes	37.8	97.5%
52	Raymondville clay loam, 0 to 1 percent slopes	1.0	2.5%
Totals for Area of Interest		38.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Hidalgo County, Texas

28—Hidalgo sandy clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sxl
Elevation: 20 to 500 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 72 to 74 degrees F
Frost-free period: 300 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hidalgo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hidalgo

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

Ap - 0 to 17 inches: sandy clay loam
Bk1 - 17 to 28 inches: sandy clay loam
Bk2 - 28 to 38 inches: clay loam
Ck - 38 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

Minor Components

Raymondville

Percent of map unit: 7 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Racombes

Percent of map unit: 6 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Willacy

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R083DY023TX - Sandy Loam
Hydric soil rating: No

52—Raymondville clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: dbm1
Elevation: 20 to 200 feet
Mean annual precipitation: 23 to 33 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 to 340 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Raymondville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raymondville

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear

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Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 15 inches: clay loam

H2 - 15 to 43 inches: clay loam

H3 - 43 to 65 inches: clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 8.0

Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: C

Ecological site: R083DY025TX - Clay Loam

Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 15 percent

Hydric soil rating: No

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Department of
Agriculture

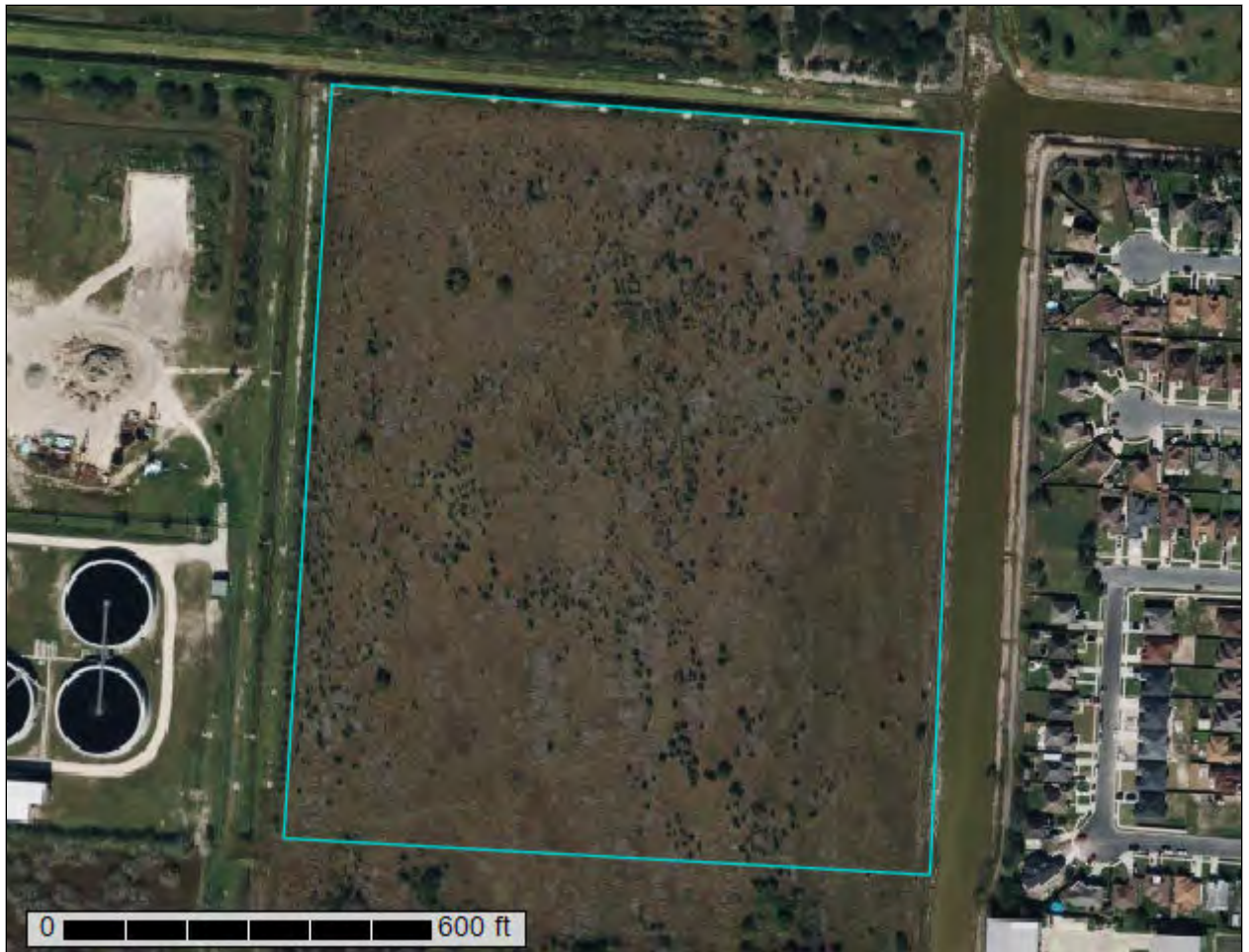
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Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Cameron County, Texas**

Brownsville



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

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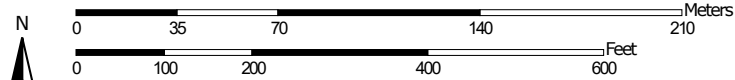
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:2,620 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cameron County, Texas
 Survey Area Data: Version 19, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 21, 2021—Mar 2, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BE	Benito clay, ponded	27.7	94.6%
CH	Chargo silty clay	1.6	5.4%
Totals for Area of Interest		29.3	100.0%

Map Unit Descriptions

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A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

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onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cameron County, Texas

BE—Benito clay, ponded

Map Unit Setting

National map unit symbol: d6cy
Elevation: 30 to 70 feet
Mean annual precipitation: 22 to 31 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 320 to 350 days
Farmland classification: Not prime farmland

Map Unit Composition

Benito and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Benito

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 8 inches: clay
H2 - 8 to 54 inches: clay
H3 - 54 to 63 inches: silty clay
H4 - 63 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R083DY015TX - Saline Clay
Hydric soil rating: Yes

Minor Components

Chargo, silty clay loam

Percent of map unit: 5 percent

Ecological site: R083DY015TX - Saline Clay

Hydric soil rating: No

Harlingen, saline

Percent of map unit: 5 percent

Ecological site: R083DY009TX - Clayey Bottomland

Hydric soil rating: No

Laredo, saline

Percent of map unit: 5 percent

Ecological site: R083BY013TX - Loamy Bottomland

Hydric soil rating: No

CH—Chargo silty clay

Map Unit Setting

National map unit symbol: d6d4

Elevation: 30 to 50 feet

Mean annual precipitation: 25 to 30 inches

Mean annual air temperature: 73 to 75 degrees F

Frost-free period: 330 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Chargo and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chargo

Setting

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Concave

Parent material: Calcareous, saline clayey alluvium

Typical profile

H1 - 0 to 41 inches: silty clay

H2 - 41 to 46 inches: silt loam

H3 - 46 to 63 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Medium

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Moderately saline to strongly saline (8.0 to 20.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: C

Ecological site: R083DY015TX - Saline Clay

Hydric soil rating: No

Minor Components

Benito

Percent of map unit: 5 percent

Landform: Marine terraces

Ecological site: R083DY015TX - Saline Clay

Hydric soil rating: Yes

Harlingen, saline

Percent of map unit: 3 percent

Ecological site: R083DY009TX - Clayey Bottomland

Hydric soil rating: No

Laredo, saline

Percent of map unit: 2 percent

Ecological site: R083BY013TX - Loamy Bottomland

Hydric soil rating: No

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United States
Department of
Agriculture

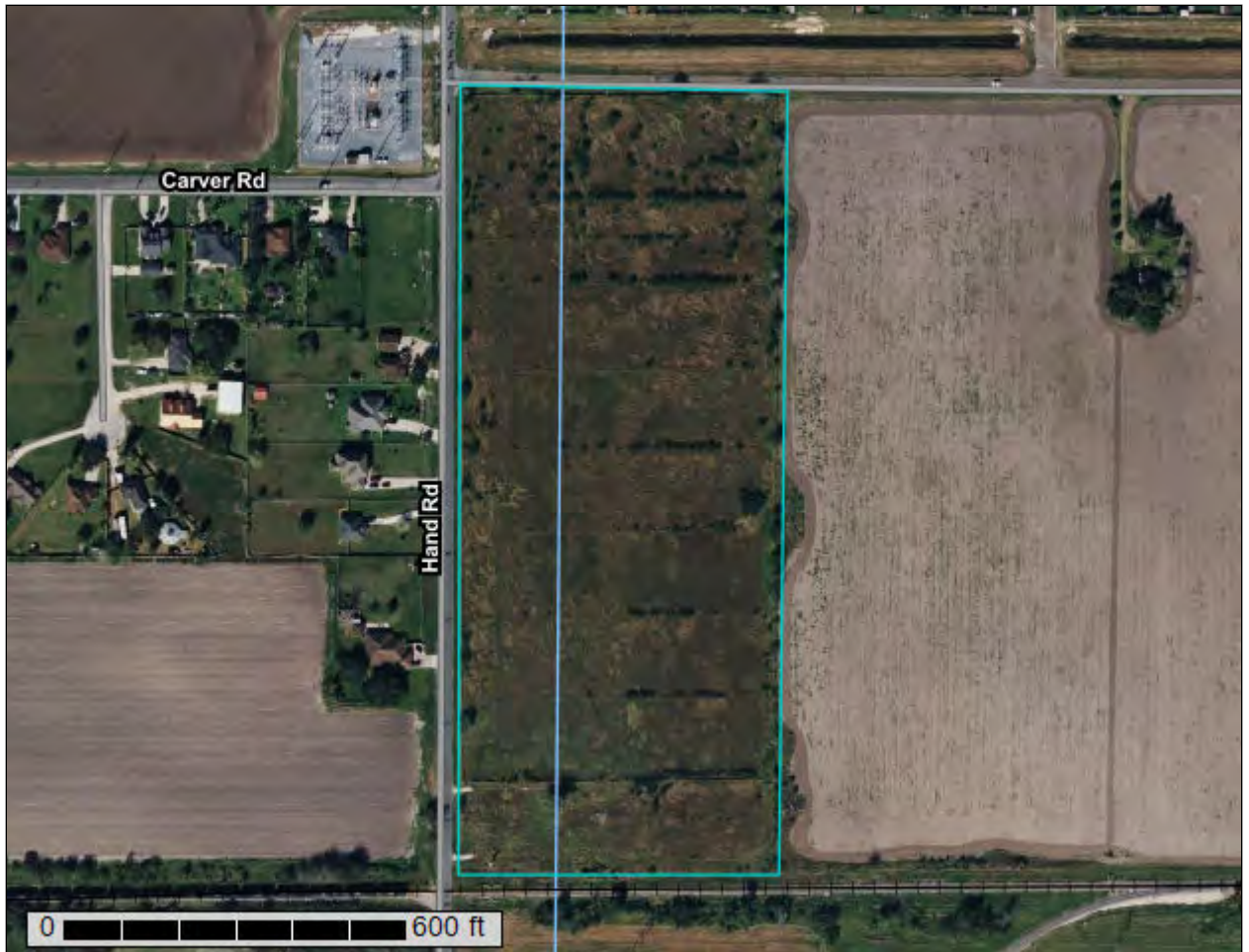
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Cameron County, Texas**

Harlingen



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

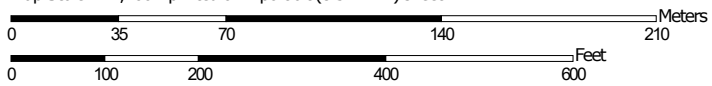
Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.



Map Scale: 1:2,460 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cameron County, Texas
 Survey Area Data: Version 19, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 21, 2021—Mar 2, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RE	Raymondville clay loam	17.9	100.0%
Totals for Area of Interest		17.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cameron County, Texas

RE—Raymondville clay loam

Map Unit Setting

National map unit symbol: d6ff
Elevation: 20 to 200 feet
Mean annual precipitation: 23 to 33 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 to 340 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Raymondville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raymondville

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 14 inches: clay loam
H2 - 14 to 37 inches: clay
H3 - 37 to 78 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 8.0
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Minor Components

Hidalgo

Percent of map unit: 5 percent

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Ecological site: R083DY019TX - Gray Sandy Loam
Hydric soil rating: No

Racombes

Percent of map unit: 5 percent
Ecological site: R083DY025TX - Clay Loam
Hydric soil rating: No

Willacy

Percent of map unit: 5 percent
Ecological site: R083DY023TX - Sandy Loam
Hydric soil rating: No

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