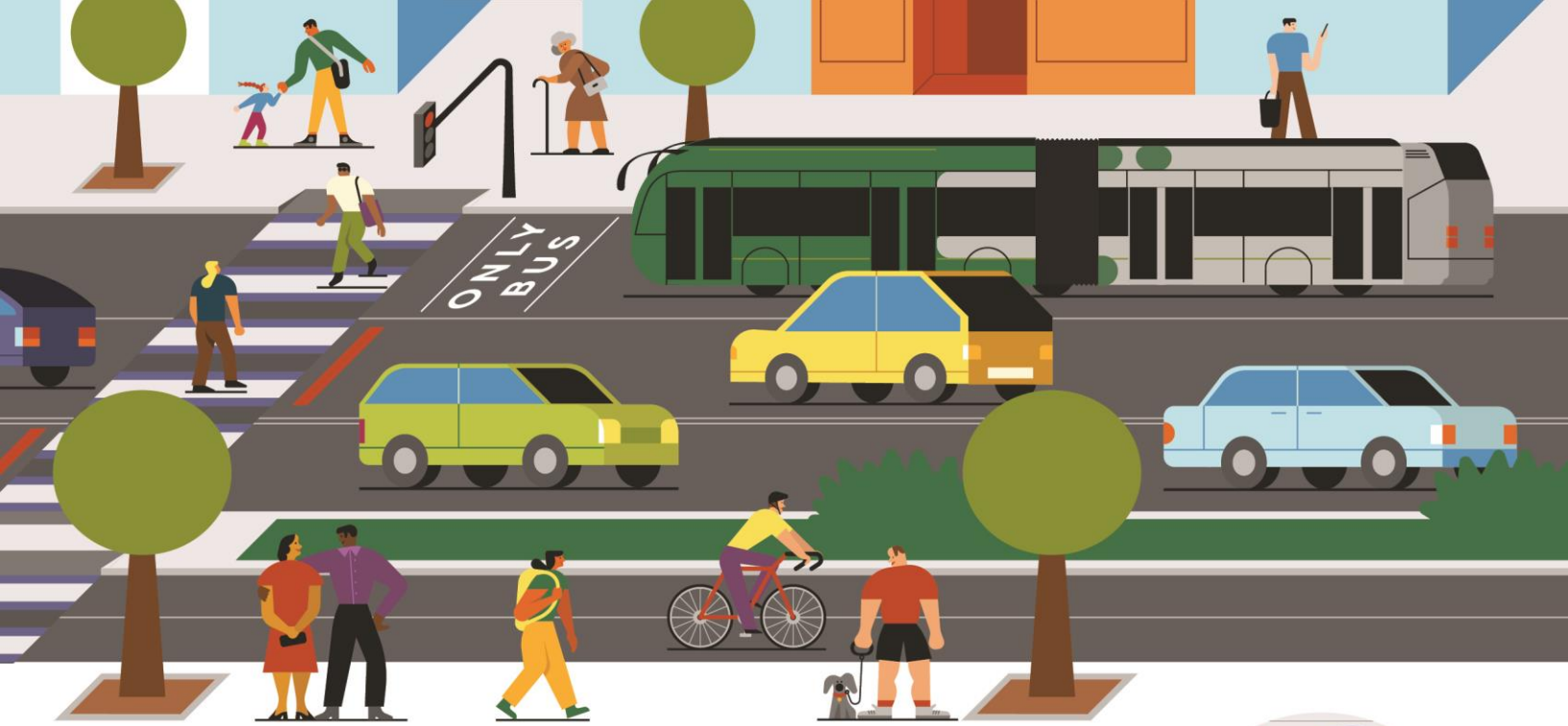

NATURAL RESOURCES REPORT

ADVANCED RAPID TRANSIT (ART) EAST/WEST CORRIDOR PROJECT

May 2025
(Version 4)

VIA RAPID

EXECUTIVE SUMMARY

VIA Metropolitan Transit (VIA) prepared this Natural Resources Report for the Advanced Rapid Transit (ART) East/West Corridor Project (the Project). The Project is an approximately 7.3-mile bus rapid transit line within the city of San Antonio, Texas. The Project corridor extends from General McMullen Drive in the west, through Downtown, to Coca Cola Place in the east, along the following roadways: Commerce Street, Buena Vista Street, Dolorosa Street, Market Street, Cherry Street, and East Houston Street (see Appendix A). The Project includes transit signal priority and is proposed to operate in a mixture of center dedicated lanes, curbside dedicated Business Access and Transit (BAT) lanes, and in mixed traffic. Based on the conceptual design, approximately 5.10 miles (70%) of the route would feature dedicated lanes, including 2.15 miles (30%) of center dedicated lanes and 2.95 miles (40%) of curbside dedicated BAT lanes. The remaining 2.20 miles (30%) would operate in mixed traffic. The Project includes 18 new or modified station areas. Stations are planned to include amenities such as off-board fare collection, real-time arrival information, security cameras, lighting, and platforms for level boarding.

This report addresses the potential environmental effects/impacts on natural resources, including water and biological resources, in accordance with the National Environmental Policy Act (NEPA) requirements, which are administered by the Federal Transit Administration (FTA). The scope of analyses was developed to support a Categorical Exclusion (CE) for the Project. This Natural Resources Report describes regulatory requirements, existing conditions, potential impacts, and mitigation measures as related to the natural (water and biological) resources within the Project area, which is defined as a 500-foot buffer around the Project corridor.

To determine if the Project would impact any water or biological resources protected by federal, state, and local regulations, a thorough desktop review was performed using various online resources from U.S. Fish and Wildlife Service (USFWS), Texas Parks and Wildlife Department (TPWD), U.S. Geological Survey (USGS), Texas Commission on Environmental Quality (TCEQ), U.S. Department of Agriculture (USDA), Federal Emergency Management Agency (FEMA), and more. To supplement the desktop review, a field survey of water and biological resources was conducted on January 16, 2025. Field survey data, desktop review data, and the Project’s design were all used in conjunction to determine the impacts to water and biological resources.

Water Resources

The assessment of water resources within the Project area determined that long-term operational activities of the Project would not result in significant impacts to or encroachment of water resources. Therefore, no long-term mitigation measures are recommended. There is potential for the short-term construction activities of the Project to temporarily impact water quality of the eight stream segments which cross the Project area. To mitigate this, a Stormwater Pollution Prevention Plan (SWP3) will be implemented during the construction phase. The SWP3 measures may include, but are not limited to, silt fences, sediment traps, and/or erosion control logs. No other mitigation measures besides those in the SWP3 are recommended.

Biological Resources

The Project is not anticipated to affect/impact any federally listed or state-listed endangered or threatened species. However, the long-term operational activities and the short-term construction activities of the Project are anticipated to potentially impact the following biological resources:

- Twelve species designated by TPWD as species of greatest conservation need (SGCNs)
- Over 300 migratory birds protected by the Migratory Bird Treaty Act (MBTA)
- Native plant species
- Significant and/or heritage trees as defined by the City of San Antonio (COSA)

To mitigate impacts to the biological resources listed above, the Project will implement the following mitigation measures:

- Seeds for native grasses should be spread on maintained grassy areas within Project area to help restore them in this region.
- More native trees should be added to the landscaped areas within the Project area.
- Tree removal or damage, especially removal/damage of oak trees, palm trees, native trees, and significant/heritage trees within the Project area, should be avoided to the extent practicable for construction and during maintenance.
- Disturbance (beyond regular mowing and maintenance of grassy areas) should be limited to those areas where paving and construction of the Project is required.
- Avoiding removal or destruction of active bird nests during construction and maintenance of the Project (except through federal or state approved options).

- Avoiding construction activities during bird breeding season if possible.
- Using measures to prevent or discourage birds from building nests on man-made structures within portions of the Project area planned for construction.
- Minimizing Project creep by clearly delineating and maintaining Project boundaries (including staging areas).
- Maximizing use of disturbed land for all Project activities (i.e., siting, lay-down areas, and construction).
- Implementing standard soil erosion and dust control measures. This may include:
  - Establishing vegetation cover to stabilize soil
  - Using erosion blankets to prevent soil loss
  - Watering bare soil to prevent wind erosion and dust issues
- Prior to removal of an inactive nest, ensuring that the nest is not protected under the Endangered Species Act (ESA) or the Bald and Golden Eagle Protection Act (BGEPA). Nests protected under ESA or BGEPA cannot be removed without a valid permit.
- Avoiding collection of birds (live or dead) or their parts (e.g., feathers) or nests without a valid permit.
- Providing enclosed solid waste receptacles throughout the Project corridor.
- Reporting any incidental take of a migratory bird to the local USFWS Office of Law Enforcement.

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APPENDICES

1. INTRODUCTION

The Federal Transit Administration (FTA) has initiated National Environmental Policy Act (NEPA) compliance for VIA Metropolitan Transit's (VIA) Advanced Rapid Transit (ART) East/West Corridor Project (the Project). On August 13, 2024, FTA determined that NEPA class of action of the Project is a Categorical Exclusion (CE).

The Project is an approximately 7.3-mile bus rapid transit line within the City of San Antonio (COSA), Texas. The Project corridor extends from General McMullen Drive in the west, through Downtown, to Coca Cola Place in the east, along the following roadways: Commerce Street, Buena Vista Street, Dolorosa Street, Market Street, Cherry Street, and East Houston Street (see **Project Location Map** in **Appendix A**). The 7.3-mile segment defines the Project's capital limits, which represent the area where construction activities are planned. While the capital limits cover this 7.3-mile segment, bus rapid transit service is planned to extend beyond these limits. To the west, service would connect to the Kel-Lac Transit Center, and to the east, it would link to the future Eastside Transit Center. No construction activities are anticipated outside of the 7.3-mile capital limits. NEPA compliance would apply exclusively to this 7.3-mile segment defined by the capital limits.

The Project includes transit signal priority and is proposed to operate in a mixture of center dedicated lanes, curbside dedicated Business Access and Transit (BAT) lanes, and in mixed traffic. Based on the conceptual design, approximately 5.10 miles (70%) of the route would feature dedicated lanes, including 2.15 miles (30%) of center dedicated lanes and 2.95 miles (40%) of curbside dedicated BAT lanes. The remaining 2.20 miles (30%) would operate in mixed traffic.

Within the capital limits, the Project includes 18 new or modified station areas. Stations are planned to include amenities such as off-board fare collection, real-time arrival information, security cameras, lighting, and platforms for level boarding. In general, VIA plans to minimize significant ground disturbance or construction impacts in the downtown area by including stops with limited amenities. Sidewalk improvements are planned to provide pedestrian and Americans with Disabilities Act access to the transit stations.

This Natural Resources Report describes regulatory requirements, existing conditions, and potential impacts to natural resources including water and biological resources.

2. WATER RESOURCES

2.1 Regulatory Requirements

NEPA requires analysis and consideration of the effects of a proposed Project on water resources, such as floodplains, wetlands, and waters of the United States (WOTUS), water quality, and navigable waterways. Consideration of impacts to water resources applies to projects with a federal nexus, or those projects that make use of federal funding.

Water resources and Project action were assessed for this FTA-funded Project to determine if the Project complies with the various NEPA regulations including the following:

- Clean Water Act (CWA) of 1972, which regulates activities that discharge into WOTUS and activities within impaired waters;
- Rivers and Harbors Act of 1899, which regulates impacts to federal flood control projects;
- Executive Order (EO) 11990 – Protection of Wetlands (signed in 1977), which provides guidance for projects with significant impacts to wetlands;
- EO 11988 – Floodplain Management (signed in 1977), which provides guidance for projects that encroach on floodplains;
- Edwards Aquifer Rules (30 Texas Administrative Code [TAC] 213; established in 1996), which provides guidance on requirements for activities within the Edwards Aquifer; and
- Texas Water Code (established in 1971), which regulates water quality impacts.

The methods for analysis, potential impacts, and recommended mitigation measures are documented in this report.

2.2 Methods

To determine the potential impacts on water resources, a desktop survey and field survey were conducted. The United States Geological Survey (USGS) topographic maps, USGS National Hydrography Dataset (NHD) map, Federal Emergency Management Agency (FEMA) floodplains data, Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) tool, United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), and the proposed plans for the Project were reviewed as part of the desktop survey. The information gathered through the desktop survey was then verified during the site visit by walking and windshield surveying important parts of the Project area. The Project area for review of water

resources includes a 500-foot buffer of the Project corridor within the Project limits. The site visit for the field survey occurred on January 16, 2025 (see **Natural Resources Photolog** in **Appendix A**).

2.3 Description of Existing Conditions

According to NHD, there are seven stream segments area that belong to the San Antonio River Basin which cross the Project (see **Topographic Map** in **Appendix A** and **NHD and Base Floodplain Map** in **Appendix B**). The basin starts in the Texas Hill Country in Kerr and Medina counties and extends all the way down to the Gulf of Mexico. This basin drains most waters in Bexar, Wilson, and Karnes counties. The San Antonio River, which crosses the Project area at one location, is the most important river within the basin and flows 240 miles from Bexar County southwards to Refugio County (San Antonio River Authority [SARA], 2025). The river is fed by spring waters from the Edwards Aquifer. Additional stream features which cross the Project area are Apache Creek, Alazan Creek, San Pedro Creek, and four unnamed tributaries to the San Antonio River. The immediate watershed of the San Antonio River is also well known for a multitude of springs. Rainfall events, weather conditions, and human activities impact the streams in this basin very quickly and highlight the strong link between groundwater and surface water in this area (SARA, 2025).

During the site survey, the locations of the seven NHD stream segments and one unlisted stream segment within the Project area were verified:

- Apache Creek (perennial) crosses West Commerce Street just west of Northwest 26th Street.
- Alazan Creek (perennial) crosses Buena Vista Street and West Commerce Street just west of Smith Street.
- San Pedro Creek (perennial) crosses Dolorosa Street and West Commerce Street just east of South Laredo Street through an existing channel.
- The San Antonio River (perennial) crosses Market Street and East Commerce Street just west-northwest of South St. Mary’s Street through an existing channel as part of the River Walk Park.
- Two unnamed perennial tributaries to the San Antonio River that are part of the River Walk Park cross Market Street and East Commerce Street just west-northwest of Losoya Street through existing channels.

- Two unnamed perennial tributaries to the San Antonio River that are part of the River Walk Park cross Market Street and East Commerce Street just west-northwest of Bowie Stret through existing channels. One stream channel segment terminates at Henry B Gonzalez Convention Center south of Market Street respectively, with downstream connection to the River Walk Park. A second stream channel segment not listed within the NHD database terminates at the River Center shopping mall north of East Commerce Street, with downstream connection to the River Walk park as well.

The NWI data depicted riverine wetland types at all water crossings within the Project area (see **NWI Map** in **Appendix B**). However, no wetlands were observed within the Project area during the field survey, and there are also no hydric soils within the Project area (see **USDA NRCS Soil Resource Report** in **Appendix B**).

FEMA floodplains data showed that there are base (100-year) floodplains that cross the Project area (see **NHD and Floodplains Map** in **Appendix B**).

2.4 Potential Impacts

2.4.1 Long-term Operational Impacts

There are no anticipated impacts to any of these streams within the Project area because there would be no work proposed in the water crossings. The NWI data depicted riverine wetland types at all water crossings within the Project area (see **NWI Map** in **Appendix B**). However, during field survey, there were no wetlands observed within the Project area. As a result, the proposed Project is not anticipated to impact any wetlands.

Since the Project would not involve any regulated activities within any WOTUS, including wetlands, it would not require a permit from the United States Army Corps of Engineers (USACE) under Section 404 of the CWA. Furthermore, since this Project would not require a permit under Section 404 of CWA, it is not required to comply with Texas Commission for Environmental Quality's (TCEQ) Water Quality Certification Project established under Section 401 of the CWA.

The Project would not involve constructing any obstacles in any port, harbor, canal, navigable water, or other U.S. waters located outside fixed harbor lines or in areas where no harbor line exists. There would be no construction, expansion, alteration, or modification of bridges or any other USACE Civil Works as part of the Project. Thus, the Project would not require any authorization or permitting under the Rivers and Harbors Act of 1899.

Since there are 100-year floodplains which cross the Project area (see **NHD and Floodplains Map** in **Appendix B**), the Project is subject to Executive Order 11988 on Floodplain Management. However, the proposed Project would not involve a significant encroachment of the floodplains. In other words, the proposed Project does not have a significant potential to interrupt or terminate transportation facilities; it also does not have a significant risk to or significant adverse impact on natural and beneficial floodplain values. Overall, it is not anticipated to increase the potential for property loss or increase the potential for hazard to life within the floodplain. This is due to proposed Project activities mostly involving restriping efforts with minimal construction taking place on already highly disturbed or paved areas within the floodplain.

Given the minimally disruptive nature of proposed Project activities within floodplains and around water crossings, groundwater and overall water quality are also not anticipated to be significantly impacted.

2.4.2 Short-term Construction Impacts

The proposed Project activities would mostly involve ART station upgrades and new installations, lane widening, drainage improvements, and restriping efforts with minimal construction taking place on previously disturbed or paved areas outside of the existing water crossings. There is a small potential for these construction activities to temporarily impact water quality. However, mitigation measures, described in **Section 2.5.2**, would be implemented to minimize and avoid such temporary impacts.

2.5 Recommended Mitigation Measures

2.5.1 Long-term Operational Mitigation Measures

Since no significant impacts or encroachment of water resources are anticipated in the long-term operation of the proposed Project, no mitigation measures are recommended.

2.5.2 Short-term Construction Mitigation Measures

A Stormwater Pollution Prevention Plan (SWP3) would be included in the plans to ensure that the proposed Project would comply with Section 402 of CWA. The mitigation measures given in SWP3 would be implemented during the construction phase. These measures may include, but are not limited to, silt fences, sediment traps, and/or erosion control logs. Since no significant

impacts or encroachment of water resources are anticipated, no other mitigation measures besides those in the SWP3 are recommended.

3. BIOLOGICAL RESOURCES

3.1 Regulatory Requirements

The Project is required to comply with federal, state, and local laws that protect biological resources including species and habitats. Potentially applicable laws are listed as follows:

- The Endangered Species Act (ESA) of 1973 protects all federally listed endangered or threatened species and their critical habitats.
- The Migratory Bird Treaty Act (MBTA) of 1918 prohibits the intentional “taking or killing” of migratory birds, their nests, or their eggs by private entities and federal agencies, unless USFWS authorizes a special permit for such activities. This law goes hand in hand with Texas state law which protects birds as codified in Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds (established in 1975).
- The Bald and Golden Eagle Protection Act (BGEPA) of 1940 prohibits the “taking” of any Bald or Golden Eagles, including their parts, nests, or eggs, unless the Secretary of the Interior authorizes the issuance of a permit for such activities. Take is defined as any number of activities which could cause the species harm including: killing, capturing, selling, trading, transporting, pursuing, shooting, shooting at, poisoning, wounding, trapping, collecting, molesting, or disturbing.
- Texas state law also prohibits the harm to state-listed species as codified in Chapters 67 and 68 (established in 1975) of the Texas Parks and Wildlife Code and Sections 65.171-65.177 (established in 2000) of Title 31 of the TAC.
- EO 13112 – Invasive Species (signed in 1999) directs federal agencies to use any programs and authorities necessary to prevent the introduction of invasive species, provide for the control and restoration of native species and habitat conditions to the extent practicable in any ecosystem which has been invaded.
- The Farmland Protection Policy Act (FPPA) of 1984 requires projects to reduce to the extent practical the conversion of agricultural land (farmland) uses to nonagricultural land uses. Farmland is defined by the absence of urban development and the types of soils according to the FPPA guidelines.

- The COSA Unified Development Code Chapter 35, Section 523 codifies the City's Tree Preservation Ordinance established in 2012. The ordinance provides protection for the City's existing significant and heritage trees.

3.2 Methods

The Project area for review of biological resources includes a 500-foot buffer of the Project corridor within the Project limits. To determine if the Project would impact any biological resources protected by regulations, the following desktop resources were used:

Species

- USFWS's Information for Planning and Consultation (IPaC) system for a list of federally endangered or threatened species that may occur within the Project area and review whether any critical habitats occur within the Project area. The IPaC system and Point Blue Conservation Science's Rapid Avian Information Locator (RAIL) were also used to determine migratory birds' occurrence within the Project area.
- The Texas Parks & Wildlife Department's (TPWD) Rare, Threatened, and Endangered Species of Texas (RTEST) tool for a list of species within Bexar County that are listed as endangered, threatened, or species of greatest conservation need (SGCN) by the state of Texas. For the BGEPA, the TPWD RTEST list was used to determine which eagles had the potential of occurring within the county.
- TPWD's Texas Natural Diversity Database (TxNDD) Information Request Tool (IRT) was used to obtain shapefiles and list of species that have historical records of element occurrences (EOs) within a one-mile buffer of Project area to further assist with habitat analysis.

Habitats, vegetation, ecosystems, and range

- Texas ecoregions map was reviewed from the United States Environmental Protection Agency's (EPA) website to have an overall understanding of the region.
- TPWD's Texas Ecosystem Analytical Mapper (TEAM) tool was used to obtain a map of types of vegetation and ecosystems within a 500-ft buffer of the Project area.
- Google Earth's current and historical aerial imagery was used to better understand the vegetation within the Project area.
- NatureServe was used to gather information on preferred habitat and range of protected species.

- Texas A&M AgriLife Research's Texas Breeding Bird Atlas was used to gather information on breeding seasons for birds.
- The USGS NHD mapper, the USFWS NWI mapper, FEMA floodplains data, the USGS topographic map, the USFWS Karst Zones map, and TCEQ Edwards Aquifer map were used to determine if there are any aquatic or subterranean habitats within the Project area to consider.
- Texas State Historical Association's (TSHA) Handbook of Texas (2020) and the TPWD's Texas Conservation Action Plan (TCAP) Ecoregions (2012) handbook were used to understand where certain species may occur.

Farmland

- The U.S. Census Bureau's TIGERweb mapping tool was used to determine whether the Project area was within or outside of urban development.
- The U.S. Department of Agriculture's (USDA) NRCS Web Soil Survey (WSS) tool was used to obtain a soils report with farmland classifications for the Project area.

Heritage or Significant Trees

- Along with TPWD vegetation data, Google Earth Street View was used to determine if the local tree preservation ordinance could be applied to trees along the corridor.

To supplement the desktop resources, a field survey was conducted on January 16, 2025, within the Project area by walking or driving along the public ROW. The photos (see **Natural Resources Photolog** in **Appendix A**) and notes from the field survey were used in conjunction with data from the desktop resources to determine the impacts to biological resources. To determine the potential effects or impacts on each federally or state-listed species, the vegetation, soils, and waters within the Project area were assessed to determine if they could provide suitable habitat for each species. Then, the proposed Project activities were carefully reviewed to see if they could potentially affect or impact any suitable habitat within the Project Area. TxNDD's records of EOs were also taken into consideration.

For SGCNs, determinations were made with the same considerations of presence of suitable habitat for species, proposed Project activities, and TxNDD records of species. However, invertebrates listed as SGCN that have no common name and/or habitat information were excluded from impact determinations due to lack of sufficient information provided by TPWD on suitable habitat.

Like the effect determination for the species protected under the ESA, the presence of suitable habitat and proposed Project activities were taken into consideration when determining “take” for birds protected by the MBTA and BGEPA federal regulations.

Vegetation, zoning, soils, and urban development data were used to determine the applicability of the other regulations: EO 13112, FPPA, and COSA’s Tree Preservation Ordinance.

3.3 Description of Existing Conditions

The Project area is located within the Level III Texas Blackland Prairies ecoregion (Griffith et al., 2007). More specifically, it is located within the Level IV Northern Blackland Prairie ecoregion of Texas (see **Ecoregions of Texas Map** in **Appendix C**).

The entire limits of COSA fall inside the Northern Blackland Prairie ecoregion. This ecoregion runs from San Antonio, through Austin and Dallas, and up to Sherman. Historically, tallgrass prairie vegetation dominated this ecoregion with a few forested areas near rivers and streams. Frequent fires and bison grazing in the area prevented the growth of most woody species and helped the grass and forbs flourish (Griffith et al., 2007). Grasses like little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), yellow Indiangrass (*Sorghastrum nutans*), and tall dropseed (*Sporobolus asper*) made up most of the vegetation. Due to its easily tillable soils, this area quickly developed into farmland and small towns towards the end of the 19th century. Now, human population density is the highest in this ecoregion compared to other ecoregions of Texas (Texas Almanac, 2021). The urban, suburban, and agricultural areas within the ecoregion have completely transformed the ecoregion. Native grasses have been replaced by cropland and non-native grasses such as Johnson grass (*Sorghum halepense*), Bermuda grass (*Cynodon dactylon*), and King Ranch bluestem (*Bothriochloa ischaemum*). Most vegetation in urban and suburban areas of San Antonio have been paved over or disturbed. Little habitat is left for species like bison, pronghorn, wolves, and greater prairie chickens, which once roamed this ecoregion in large numbers (Griffith et al., 2007).

The Project area is located within a highly urbanized area. The desktop survey showed that almost 100 percent of the Project area could be considered Urban, which means that it is either impermeable paved surfaces with no vegetation or mowed, maintained, and landscaped vegetated areas with some permeability (see **Appendix C** for the **TPWD Vegetation map**). The field survey conducted on January 16, 2025 confirmed very minimal presence of disturbed grassy areas and a few trees with mostly paved surfaces within the Project area.

Soils in the Project area are mostly clay soils with some silt and gravel according to USDA soils data (See **USDA NRCS Soil Resource Report** in **Appendix C).** However, field survey showed that all surface soils were highly disturbed, and the Project area was mostly made of impermeable surfaces. The Project area may include non-native soils as a result.

There are three dominant geologic formations within the Project area: Fluviatile terrace deposits, Navarro Group and Marlbrook Marl, and Uvalde Gravel formations (see **Geologic Map** in **Appendix C**). There is also a fault line which crosses the Project near the intersection of SW 19th Street based on USGS Geologic Features data. Since the entire Project area has been built up with urban improvements, there was no visual evidence of faults within the Project area during field survey. Based upon review of official USFWS zone maps depicting Karst Zones (USFWS, 2024), the Project is located in Karst Zone 4b (see **Karst Zones and Karst Fauna Region Map** in **Appendix C**). A full geologic assessment and karst survey were not needed for the Project as they are not required for projects within Karst Zones 4a and 4b. The Project area is also not within 500-feet of the boundaries of Karst Zones 1, 2, 3a, 3b or any Karst Fauna Regions.

According to TxNDD, there are records of EOs which cross the Project area for Correll's false dragon-head (*Physostegia correllii)*, eastern spotted skunk (*Spilogale putorius*), plains spotted skunk (*Spilogale interrupta*), and western spotted skunk (*Spilogale gracilis*). See **TxNDD Element Occurrences Map** in **Appendix C** for more details on the records of EOs around the Project.

3.3.1 Federal and State-Protected Species

According to USFWS IPaC, there are no critical habitats within the Project area. Critical habitats are areas officially designated by the USFWS as either containing federally listed species (at the time of the species listing) or as being essential to the conservation of federally listed species. There are several federally listed species with potential for occurrence within the Project area, according to the USFWS IPaC. The full **USFWS IPaC List** can be found in **Appendix C**. According to TPWD RTEST list, there are over 100 state-protected species, including SGCNs, with potential for occurrence within Bexar County. The full **TPWD RTEST List** for Bexar County can be found in **Appendix C**.

There was suitable habitat within the Project area for several federally listed and state-listed species as discussed in the **Federal and State Listed Species Analysis Table** found in

Appendix C. Suitable habitat are areas that have physical and biological characteristics that the species may find appealing, which could lead to potential occurrence of the species in the area.

There was also suitable habitat for various SGCNs within the Project area. The **SGCNs Analysis Table** in **Appendix C** discusses this in further detail.

3.3.2 Migratory Birds and Bald Eagles

According to Point Blue Conservation Science's RAIL tool, there are 320 migratory birds that have the potential for occurrence within the Project area. A list of all 320 migratory birds with potential for occurrence within the Project area is provided in **Appendix C** as **RAIL Migratory Birds list.**

According to the TPWD RTEST list for Bexar County, the Bald Eagle has the potential for occurrence within the county. There was no suitable habitat within the Project area for the Bald Eagle. The **BGEPA Species Analysis Table** in **Appendix C** discusses the typical habitats and the explanation for habitat determination within the Project area for the Bald Eagle in more detail.

3.3.3 Invasive Species

Signs of mowing and disturbance were observed through desktop and field surveys. As a result, existing ROW is highly likely to have invasive grasses.

3.3.4 City of San Antonio's Tree Preservation Ordinance

Based on desktop review of the Project area using Google Earth aerial imagery and Street View and field survey conducted on January 16, 2025, there could be a few trees within the Project area that could qualify as significant trees or heritage trees. Please see below for regulatory language defining which trees would count as significant or heritage trees:

- Significant Trees: A significant tree means a tree of six (6) inches or greater DBH for all tree species except the following species are significant with at least one (1) trunk being equal or greater than the respective size (DBH):
  - Ashe Juniper (*Juniperus ashei*) - ten (10) inch DBH;
  - Huisache (*Acacia farnesiana*) - ten (10) inch DBH;
  - Mesquite (*Prosopis glandulosa*) - ten (10) inch DBH;
  - Arizona Ash (*Fraxinus velutina*) - ten (10) inch DBH;
  - Hackberry (*Celtis* spp.) - ten (10) inch DBH;

- Texas persimmon (*Diospyros texana*) - five (5) inch DBH;
- Texas redbud (*Cercis canadensis* var. *texensis*) - five (5) inch DBH;
- Texas Mountain laurel (*Sophora secundiflora*) - five (5) inch DBH;
- Condalia (*Condalia hookeri*) - five (5) inch DBH;
- Possum haw (*Ilex decidua* - in floodplain only) - five (5) inch DBH;
- Hawthorne (*Crataegus texana*) - five (5) inch.

- Heritage Trees. A heritage tree means a tree of twenty-four (24) inches or greater DBH for all tree species except the following species are heritage with at least one (1) trunk being twelve (12) inches or greater DBH (the value of the twelve (12) inches or greater trunk is the value given to these small tree species):
  - Texas persimmon (*Diospyros texana*);
  - Texas redbud (*Cercis canadensis* var. *texensis*);
  - Texas Mountain laurel (*Sophora secundiflora*);
  - Condalia (*Condalia hookeri*);
  - Possum haw (*Ilex decidua* - in floodplain only);
  - Hawthorne (*Crataegus texana*).
- Non-native Trees. Non-native invasive tree species are not protected and will be omitted from the tree survey. Non-native invasive tree species means the following tree species:
  - Chinese Pistache (*Pistacia chinesis*);
  - Chinaberry (*Melia azedarach*);
  - Chinese Tallow (*Sapium sebiferum*);
  - Tree of Heaven (*Ailanthus altissima*);
  - Salt Cedar (*Tamerix species*);
  - Japanese Ligustrum (*Ligustrum japonicum*);
  - Japanese Ligustrum (*Ligustrum japonicum*);
  - Nandina (*Nandina domestica*);
  - Paper Mulberry (*Broussonetia papyrifera*).

3.3.5 Farmland Protection

The Project area is located within a Census Bureau designated “urban area” (see **2020 Census Urban Area Map** in **Appendix C**). According to FPPA guidelines, if the Project area is entirely within a developed urban area, then the FPPA regulations do not apply to the Project.

3.4 Potential Effects/Impacts

3.4.1 Long-term Operational Effects/Impacts

3.4.1.1 Federal and State-Protected Species

Effect and/or impact determinations were made for federal and state-protected species listed in USFWS and TPWD species lists. Based on the species analysis done for each listed species, the proposed Project is not anticipated to affect/impact any federally listed or state-listed species.

Impact determinations were also made for all the species designated by TPWD as SGCNs within Bexar County (see **TPWD RTEST list** in **Appendix C**). The following list includes the 12 SGCNs that had a “may impact” determination:

- Woodhouse's toad (*Anaxyrus woodhousii*)
- Loggerhead Strike (*Lanius ludovicianus*)
- Pyrrhuloxia (*Cardinalis sinuatus*)
- Manfreda giant-skipper (*Stallingsia maculosus*)
- eastern spotted skunk (*Spilogale putorius*)
- plains spotted skunk (*Spilogale interrupta*)
- Osage Plains false foxglove (*Agalinis densiflora*)
- plateau loosestrife (*Lythrum ovalifolium*)
- tree dodder (Cuscuta exaltata)
- Wright's milkvetch (*Astragalus wrightii*)
- plateau spot-tailed earless lizard (*Holbrookia lacerata*)
- Tamaulipan spot-tailed earless lizard (*Holbrookia subcaudalis*)

The complete table with all SGCN determinations can be found in the **SGCNs Analysis Table** found in **Appendix C**.

3.4.1.2 Migratory Birds and Bald Eagles

Given the over 300 migratory birds (see **RAIL Migratory Birds List** in **Appendix C**) with potential for occurrence in the Project area and the varied habitat preferences of these birds, it is highly likely that the habitats within the Project area are suitable for at least some of these

migratory birds. As a result, the Project would implement mitigation measures in the long-term maintenance of the Project to ensure a “no take or kill” determination for all migratory bird species.

The Bald Eagle, which is protected under BGEPA, has no suitable habitat within the Project area. **The BGEPA Species Analysis Table** is provided in **Appendix C**.

3.4.1.3 Invasive Species

The long-term operational activities of the Project may further the spread of invasive grasses.

3.4.1.4 Significant and/or Heritage Trees

The long-term operational activities of the Project may impact significant, or heritage trees protected under the COSA’s Tree Preservation Ordinance due to maintenance activities within ROW that may result in the trees being trimmed, removed, or otherwise accidentally impacted.

3.4.2 Short-term Construction Impacts

3.4.2.1 Federal and State-Protected Species

Species that may be affected or impacted by the long-term operational activities of the Project may also be harmed by construction activities in the short term. The harm may include the unintentional destruction of nest, den, or home, as well as injury or death of an individual of the species. The following SGCN species are included:

- Woodhouse's toad (*Anaxyrus woodhousii*)
- Loggerhead Strike (*Lanius ludovicianus*)
- Pyrrhuloxia (*Cardinalis sinuatus*)
- Manfreda giant-skipper (*Stallingsia maculosus*)
- eastern spotted skunk (*Spilogale putorius*)
- plains spotted skunk (*Spilogale interrupta*)
- Osage Plains false foxglove (*Agalinis densiflora*)
- plateau loosestrife (*Lythrum ovalifolium*)
- tree dodder (Cuscuta exaltata)
- Wright's milkvetch (*Astragalus wrightii*)
- plateau spot-tailed earless lizard (*Holbrookia lacerata*)

- Tamaulipan spot-tailed earless lizard (*Holbrookia subcaudalis*)

3.4.2.2 Migratory Birds and Bald Eagles

Given the over 300 migratory birds (see **RAIL Migratory Birds List** in **Appendix C**) with potential for occurrence in the Project area and the varied habitat preferences of these birds, it is highly likely that the habitats within the Project area are suitable for at least some of the migratory birds. As a result, the Project would implement mitigation measures in the short-term construction of the Project to ensure a "no take or kill" determination for all migratory bird species.

The Bald Eagle, which is protected under BGEPA, has no suitable habitat within the Project area. The **BGEPA Species Analysis Table** is provided in **Appendix C**.

3.4.2.3 Invasive Species

The short-term construction activities of the Project would result in the removal of both native and invasive species to make room for the Project.

3.4.2.4 Significant and/or Heritage Trees

Based on windshield survey, at least one large tree within the Project area meets the DBH requirements for significant trees (6 inches or more) and at least one large tree within the Project area meets the DBH requirements for heritage trees (24 inches or more). As a result, the proposed Project may impact trees protected under the COSA's Tree Preservation Ordinance. To ensure compliance with the local ordinance, the Project will implement mitigation measures during the short-term construction phase.

A closer inspection of trees would be needed after environmental clearance and finalization of design elements to verify the exact species of each tree with qualifying DBH and to determine if they would be impacted by the construction of sidewalks/stations and roadway realignment.

3.5 Recommended Mitigation Measures

3.5.1 Long-term Operational Mitigation Measures

3.5.1.1 Federal and State-Protected Species

General mitigation measures such as the following should be implemented during the long-term maintenance of ROW to enhance species habitats within the Project area:

- Seeds for native grasses should be spread on maintained grassy areas within Project area to help restore them in this region.

- More native trees should be added to the landscaped areas within the Project area.

3.5.1.2 Migratory Birds and Bald Eagles

Given the over 300 migratory birds with potential for occurrence in the Project area, the Project would implement long-term mitigation measures to ensure that all migratory bird species would have a “no take or kill” determination. Long-term mitigation measures would include:

- Avoiding disturbance any birds or active nests, when/if found under bridges or other structures along corridor during long-term maintenance of ROW.
- Prior to removal of an inactive nest, ensuring that the nest is not protected under the ESA or the BGEPA. Nests protected under ESA or BGEPA cannot be removed without a valid permit.
- Avoiding collection of birds (live or dead) or their parts (e.g., feathers) or nests without a valid permit.
- Providing enclosed solid waste receptacles throughout the Project corridor.
- Reporting any incidental take of a migratory bird to the local USFWS Office of Law Enforcement.

Overall, the Project would comply with applicable provisions of the MBTA and Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds.

3.5.1.3 Invasive Species

The general mitigation measures recommended under **Section 3.5.1.1** for the protection and enhancement of species habitats along the corridor would also ensure the Project complies with the EO 13112 on invasive species. The measures would help prevent further spread of invasive species and aid in restoration of native species to the extent practicable in the long-term.

3.5.1.4 Significant and/or Heritage Trees

To the extent practical, VIA would minimize impacts to trees identified as significant and heritage trees under the COSA’s Tree Preservation Ordinance during long-term operational and maintenance activities. VIA will coordinate with COSA and follow all applicable requirements if a tree may be impacted by regular maintenance activities within ROW.

3.5.2 Short-term Construction Mitigation Measures

3.5.2.1 Federal and State-Protected Species

General mitigation measures such as the following should be implemented during construction to protect species:

- Tree removal, especially removal of oak trees, palm trees, and other native trees within the Project area, should be avoided to the extent practicable for construction.
- Disturbance (beyond regular mowing and maintenance of grassy areas) should be limited to those areas where paving and construction of the Project is required.

3.5.2.2 Migratory Birds and Bald Eagles

Given the over 300 migratory birds with potential for occurrence in the Project area, the Project would implement short-term mitigation measures to ensure that all migratory bird species would have a “no take or kill” determination. Short-term mitigation measures would include:

- Avoiding removal or destruction of active bird nests except through federal or state approved options.
- Avoiding construction activities during breeding season if possible.
- Using measures to prevent or discourage birds from building nests on man-made structures within portions of the Project area planned for construction.
- Minimizing Project creep by clearly delineating and maintaining Project boundaries (including staging areas).
- Maximizing use of disturbed land for all Project activities (i.e., siting, lay-down areas, and construction).
- Implementing standard soil erosion and dust control measures. This may include:
- Establishing vegetation cover to stabilize soil
- Using erosion blankets to prevent soil loss
- Watering bare soil to prevent wind erosion and dust issues

Overall, the Project would comply with applicable provisions of the MBTA and Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds.

3.5.2.3 Invasive Species

The general mitigation measures recommended under **Section 3.5.2.1** for the protection of species would also ensure the Project complies with the EO 13112 on invasive species. The measures would help prevent further spread of invasive species and aid in restoration of native species to the extent practicable in the long-term.

3.5.2.4 Significant and/or Heritage Trees

To the extent practical, VIA would refine design to completely avoid and/or minimize impacts to trees identified as significant and heritage trees under COSA's Tree Preservation Ordinance. If the design is unable to avoid impacts to protected trees, VIA will coordinate with COSA and follow all applicable requirements.

4. REFERENCES

Barnes, V.L. (1981). *Geologic Atlas of Texas, San Antonio,* Bureau of Economic Geology. University of Texas at Austin. https://txpub.usgs.gov/txgeology/. Accessed January 2025.

City of San Antonio, Texas. (2023). Unified Development Code Chapter 35, Section 523 (Tree Preservation). https://library.municode.com/tx/san_antonio/codes/unified_development_code?nodeId=ARTVDEST_DIV5NAREPR_S35-523TRPR. Accessed October 2024.

Federal Emergency Management Agency (FEMA). (2011). *Flood Insurance Rate Maps for Bexar County.* https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed January 2025.

Federal Transit Administration. (2019). *Water Resources: SOP No.22*. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/environmental-programs/134196/22-waterresources-oct-2019.pdf. Accessed January 2025.

Google Inc. (2009). Google Earth (Version 5.1.3533.1731) [Software]. Accessed August 2024 – February 2025.

Griffith et al. (2007). *Ecoregions of Texas.* Texas Commission on Environmental Quality and United States Geological Survey through the Unites States Environmental Protection Agency. http://ecologicalregions.info/htm/pubs/TXeco_Jan08_v8_Cmprsd.pdf. Accessed October 2024.

National Wild and Scenic Rivers System. Home Page. https://www.rivers.gov/. Accessed January 2025.

System-wide Map. https://www.rivers.gov/map. Accessed January 2025.

NatureServe. *Search for Species and Ecosystems Tool*. https://explorer.natureserve.org/Search. Accessed January 2025.

Point Blue Conservation Science. *Rapid Avian Information Locator Tool*. https://data.pointblue.org/apps/rail/. Accessed February 2025.

San Antonio River Authority. (2024). *San Antonio River Basin*. https://www.sariverauthority.org/education/san-antonio-river-basin. Accessed January 2025.

Texas Almanac. (2021). *Physical Regions*. https://www.texasalmanac.com/articles/physical-regions. Accessed October 2024.

Texas A&M AgriLife Research. (2007). *Texas Breeding Bird Atlas, Bald Eagle (Haliaeetus leucocephalus)*. https://txtbba.tamu.edu/species-accounts/bald- eagle/. Accessed October 2024.

Texas Constitution and Statutes. (2023). *Parks and Wildlife Code, Title 5, Subtitle B, Chapter 64 (Birds). https://statutes.capitol.texas.gov/Docs/PW/htm/PW.64.htm.* Accessed October 2024.

Parks and Wildlife Code, Title 5, Subtitle B, Chapter 67 (Nongame Species). https://statutes.capitol.texas.gov/Docs/PW/htm/PW.67.htm.Accessed October 2024.

Parks and Wildlife Code, Title 5, Subtitle B, Chapter 68 (Endangered Species). https://statutes.capitol.texas.gov/Docs/PW/htm/PW.68.htm. Accessed October 2024.

Texas Parks and Wildlife Department. (2025). *Rare, Threatened, and Endangered Species of Texas Tool. https://tpwd.texas.gov/gis/rtest/*. Accessed November 2024 and February 2025.

Texas Conservation Action Plan Ecoregions, Texas Blackland Prairies Ecoregion Handbook. (2012) https://tpwd.texas.gov/documents/286/tbpr_tcap_2012_eBgkeEj.pdf Accessed January 2025.

Texas Ecosystem Analytical Mapper. (2023). https://tpwd.texas.gov/gis/team/. Accessed November 2024.

Texas Natural Diversity Database Information Request Tool. (2023) https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/. Accessed January 2025.

Texas Secretary of State. (2021). *Texas Administrative Code: Title 31, Part 2, Chapter 65, Subchapter G (Sections 65.171-65.176: Threatened and Endangered Nongame Species – effective November 16, 2000)*. https://texas-sos.appianportalsgov.com/rules-and-meetings?chapter=65&interface=VIEW_TAC&part=2&subchapter=G&title=31. Accessed October 2024.

Texas State Historical Association. (2020). *Handbook of Texas: Natural Regions*. https://www.tshaonline.org/handbook/entries/natural-regions. Accessed January 2025.

United States Census Bureau. *TIGERweb Mapping Tool*. https://tigerweb.geo.census.gov/tigerweb/ Accessed January 2025.

United States Department of Agriculture's Natural Resource Conservation Service. *Web Soil Survey.* https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed February 2025.

United States Fish and Wildlife Service. *Bald and Golden Eagle Protection Act of 1940.* https://www.fws.gov/law/bald-and-golden-eagle-protection-act. Accessed October 2024.

Bexar County, Texas Karst Zones Map - Revised. 2024. https://www.arcgis.com/home/item.html?id=05da6c61481a4f1786b58208c53b0cb8. Accessed November 2024.

Endangered Species Act of 1973. https://www.fws.gov/law/endangered-species-act. Accessed October 2024.

Information for Planning and Consulting System. https://ipac.ecosphere.fws.gov/. Accessed November 2024 and February 2025.

Migratory Bird Treaty Act of 1918. https://www.fws.gov/law/migratory-bird-treaty-act-1918. Accessed November 2024.

National Wetland Inventory Mapper. https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands- mapper/. Accessed January 2025.

United States Geologic Survey. *National Hydrography Dataset.* https://apps.nationalmap.gov/viewer/. Accessed January 2025.

Topographic Map. https://apps.nationalmap.gov/viewer/. Accessed February 2025.

United States Government Publishing Office. (2025). *Electronic Code of Federal Regulations: Title 7, Subtitle B, Chapter VI, Subchapter F, Part 658 (Farmland Protection Policy Act of 1984). https://www.ecfr.gov/current/title-7/subtitle-B/chapter-VI/subchapter-F/part-658.* Accessed February 2025.

Federal Register: Invasive Species (Executive Order 13112 of February 3, 1999). https://www.govinfo.gov/content/pkg/FR-1999-02-08/html/99-3184.htm. Accessed February 2025.

Veni G, Cooper J, Dickerson W. (2024). *Statistical Analysis and Revision of Endangered Karst Invertebrate Species Distribution, San Antonio Area, Texas*. Prepared for the Texas Department of Transportation: Voluntary Conservation Measure for US 281 from Loop 1604 to the Comal County Line, Bexar County, Texas. 74 pp. Accessed November 2024.

5. ACRONYMS

Acronym/Abbreviation	Definition
ART	Advanced Rapid Transit
BAT	Business Access and Transit
BGEPA	Bald and Golden Eagle Protection Act
CE	Categorical Exclusion
COSA	The City of San Antonio
CWA	Clean Water Act
DBH	diameter at breast height (in reference to trees)
EO	Executive Order
EOs	Element Occurrences
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
IPaC	Information for Planning and Consultation
IRT	Information Request Tool
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NHD	National Hydrography Dataset
NWI	National Wetland Inventory
RAIL	Rapid Avian Information Locator
ROW	Right-of-Way
RTEST	Threatened, and Endangered Species of Texas
SARA	San Antonio River Authority
SGCN	Species of greatest conservation need

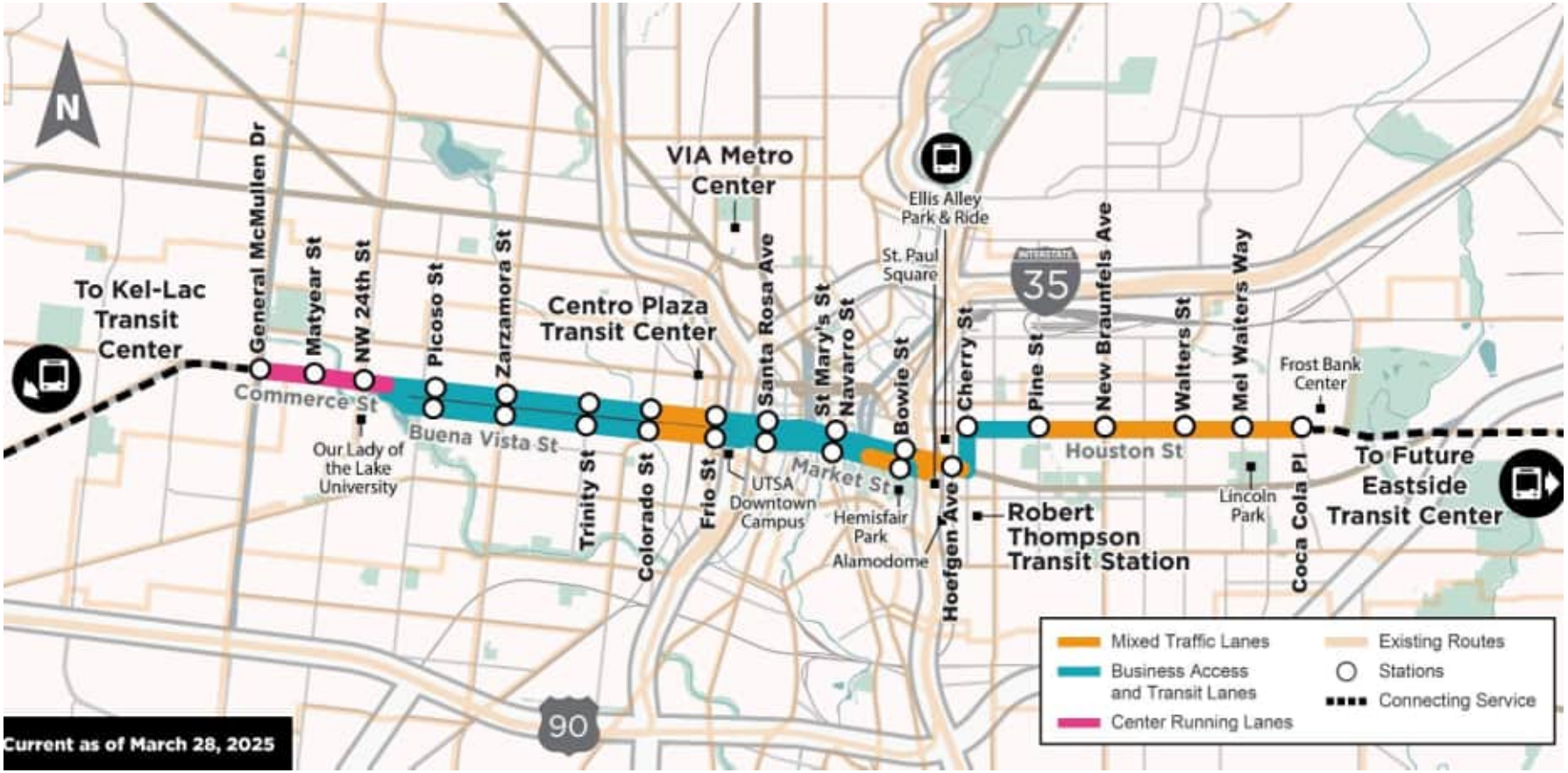
Acronym/Abbreviation	Definition
SWP3	Stormwater pollution prevention plan
TAC	Texas Administrative Code
TCAP	Texas Conservation Action Plan
TCEQ	Texas Commission for Environmental Quality
TEAM	Texas Ecosystem Analytical Mapper
TPWD	Texas Parks and Wildlife Department
TSHA	Texas State Historical Association
TxNDD	Texas Natural Diversity Database
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VIA	VIA Metropolitan Transit
WOTUS	Water of the United States
WSS	Web Soil Survey

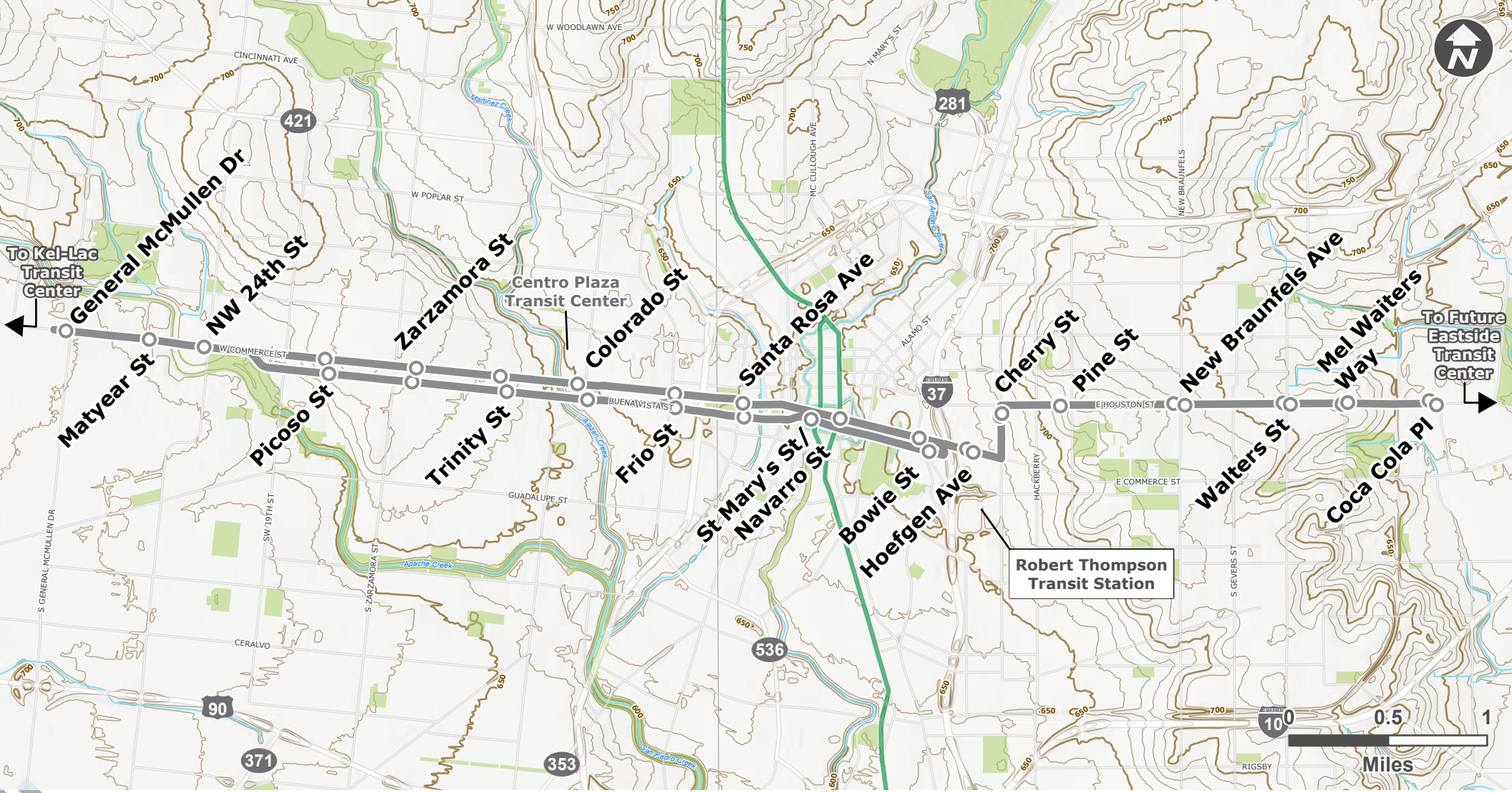
Appendix A General Maps and Photolog

Project Location Map

Topographic Map

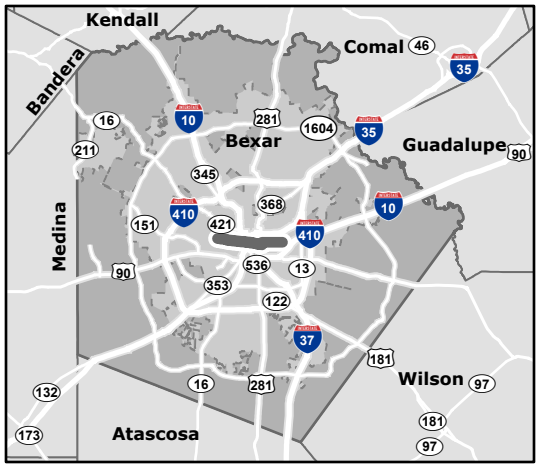
Natural Resources Photolog


N
To Kel-Lac Transit Center
General McMullen Dr
Matyear St
NW 24th St
Picoso St
Zarzamora St
Centro Plaza Transit Center
VIA Metro Center
Santa Rosa Ave
St Mary's St
Navarro St
Bowie St
Ellis Alley Park & Ride
St. Paul Square
Cherry St
Pine St
New Braunfels Ave
Walters St
Mel Waiters Way
Frost Bank Center
To Future Eastside Transit Center
Commerce St
Buena Vista St
Our Lady of the Lake University
Trinity St
Colorado St
Frio St
UTSA Downtown Campus
Market St
Hemisfair Park
Alamodome
Hoefgen Ave
Robert Thompson Transit Station
Houston St
Lincoln Park
Coca Cola Pl
35
90
Mixed Traffic Lanes
Business Access and Transit Lanes
Center Running Lanes
Existing Routes
Stations
Connecting Service
Current as of March 28, 2025



Topographic Map

- ART East/West Stations
- ART East/West Alignment
- ART North/South Alignment
- Road
- Parks
- Stream
- Elevation Contour



Sources: VIA 2025, AAMPO 2024, COSA 2024, ERSI 2024, USGS 2024, TxDOT 2024

Natural Resources Photo Log

Photos taken during Jan 16, 2025 Field Survey

Photo 1 – Near western terminus of the project area. Facing east. On W Commerce Street located near intersection of W Commerce Street and S Bernardo Avenue.

Photo 2 – Near eastern terminus of the project area. Facing west. On E Houston Street located near the intersection of E Houston Street and Coca-Cola Place.

Natural Resources Photo Log

Photos taken during Jan 16, 2025 Field Survey

Photo 3 – General character of project area with mostly paved areas and highly disturbed vegetation (mostly grasses and herbaceous plants). Facing east. On E Commerce Street near the intersection of E Commerce Street and NW 26th Street.

Photo 4 – South of the W Commerce Street bridge at Apache Creek. Facing east. Observed near intersection of W Commerce Street and NW 26th Street.

Natural Resources Photo Log

Photos taken during Jan 16, 2025 Field Survey

Photo 5 – A large deciduous tree within the existing right-of-way that may fall under the City of San Antonio's Tree Preservation Ordinance. Facing east. Observed near intersection of E Houston Street and Mel Waiters Way.

Photo 6 – Elmendorf Lake Park with diverse maintained vegetation (including willows, oaks, bald cypress, and aquatic reeds) and a small lake, downstream of Apache Creek. Facing northwest. Located immediately outside of project area at 3700 W Commerce St San Antonio, TX 78207. No project activities would occur within the park.

Natural Resources Photo Log

Photos taken during Jan 16, 2025 Field Survey

Photo 7 – Alazan Creek at the Buena Vista Street bridge crossing. Facing southeast. Located immediately outside of project area at 3700 W Commerce St San Antonio, TX 78207. Observed near the intersection of S Brazos Street and Buena Vista Street.

Photo 8 – View of the San Antonio River, Acequia Park Trail, River Walk, and E Commerce Street bridge crossing. Facing north. Observed from the W Market Street bridge crossing near intersection of W Market Street and Main Plaza.

Natural Resources Photo Log

Photos taken during Jan 16, 2025 Field Survey

Photo 9 – The San Antonio River and River Walk park. Facing west. Observed adjacent south of the project area at the S Presa Street bridge crossing near intersection of W Market Street and S Presa St.

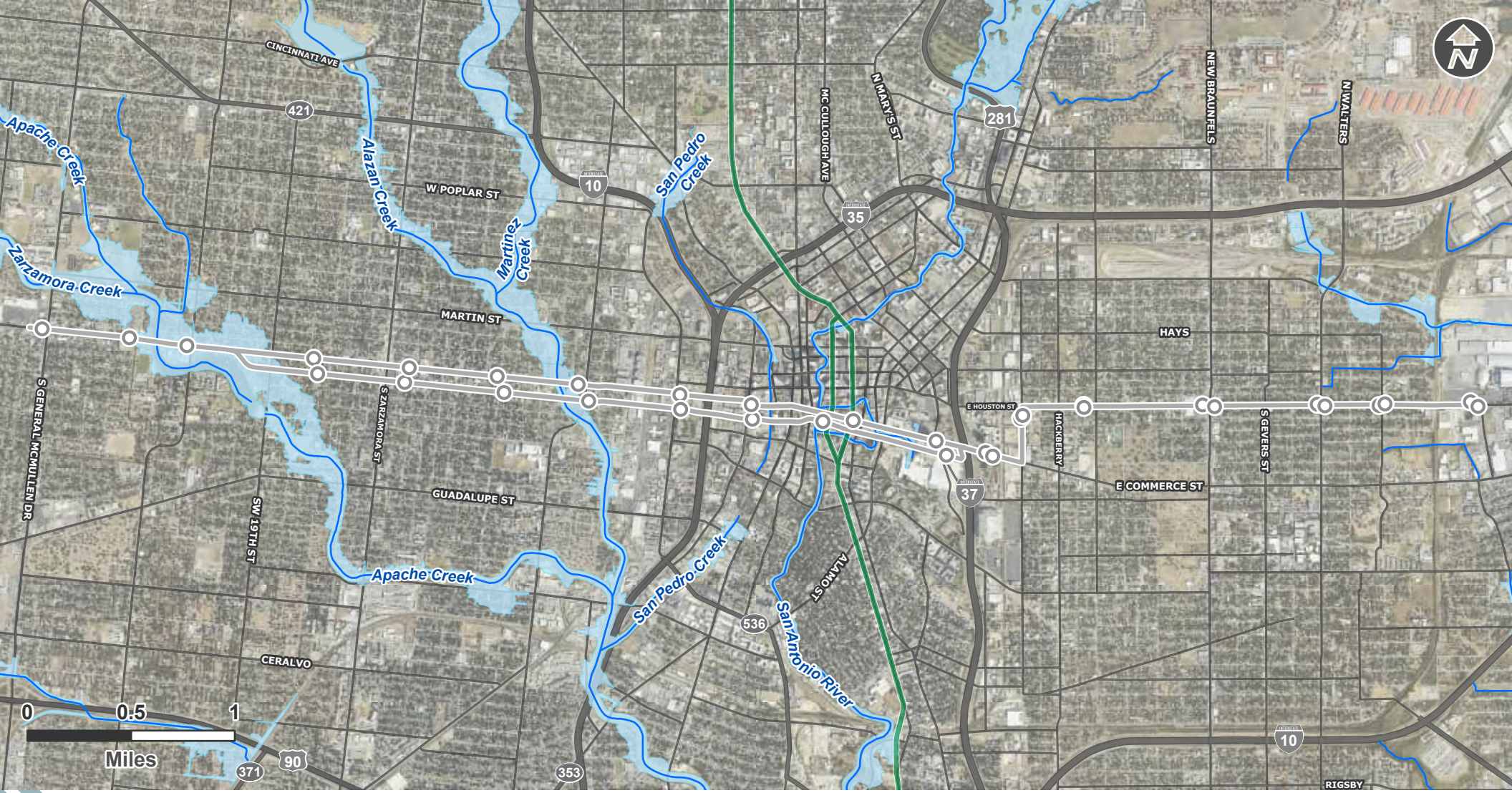
Photo 10 – View of Alazan Creek north of the W Commerce Street bridge crossing. Facing northeast. Observed near the intersection of W Commerce Street and S Alazan Street.

Appendix B Water Resources

National Hydrography Dataset (NHD) and Base (100-Year) Floodplain Map

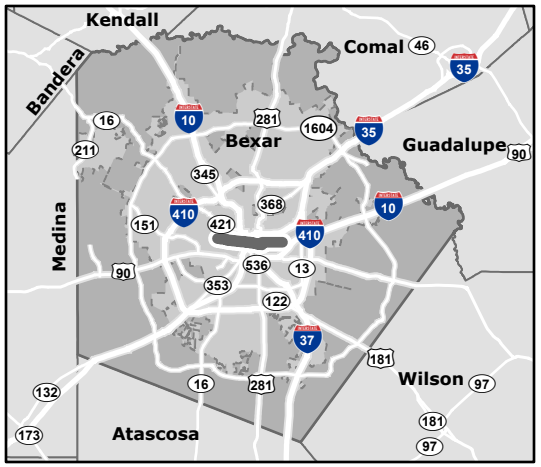
National Wetland Inventory (NWI) Map

USDA NRCS Soil Resource Report

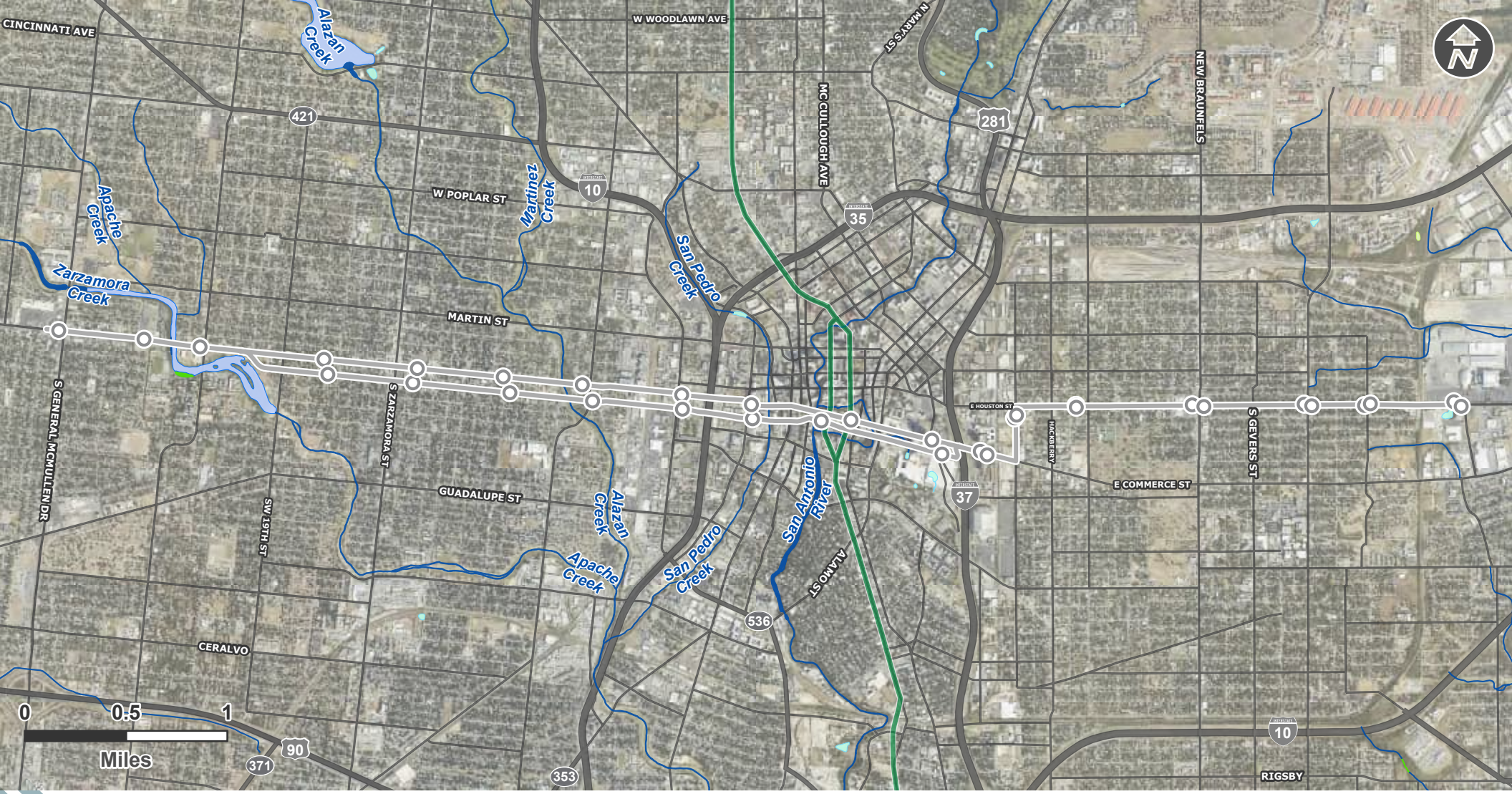


National Hydrography Dataset (NHD) and Base (100-Year) Floodplain Map

- ART East/West Stations
- ART East/West Alignment
- ART North/South Alignment
- NHD Flowline
- Base (100-Year) Floodplain

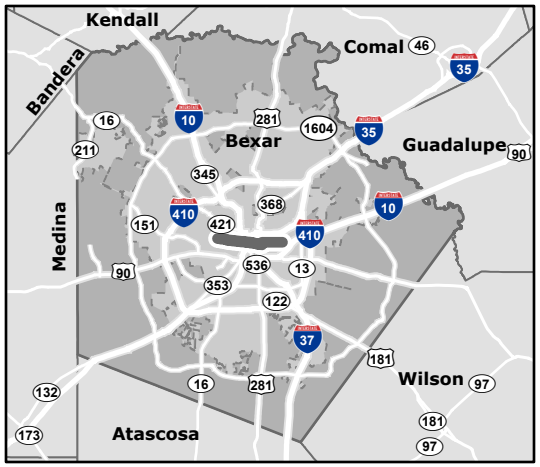


Sources: FEMA 2025, VIA 2025, AAMPO 2024, COSA 2024, TxDOT 2024, USDA NAIP 2024, USGS NHD 2024



National Wetland Inventory (NWI) Map

- ART East/West Stations
- ART East/West Alignment
- ART North/South Alignment
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine



Sources: VIA 2025, AAMPO 2024, COSA 2024, USDA NAIP 2024, USFWS NWI 2024, TxDOT 2024

United States Department of Agriculture

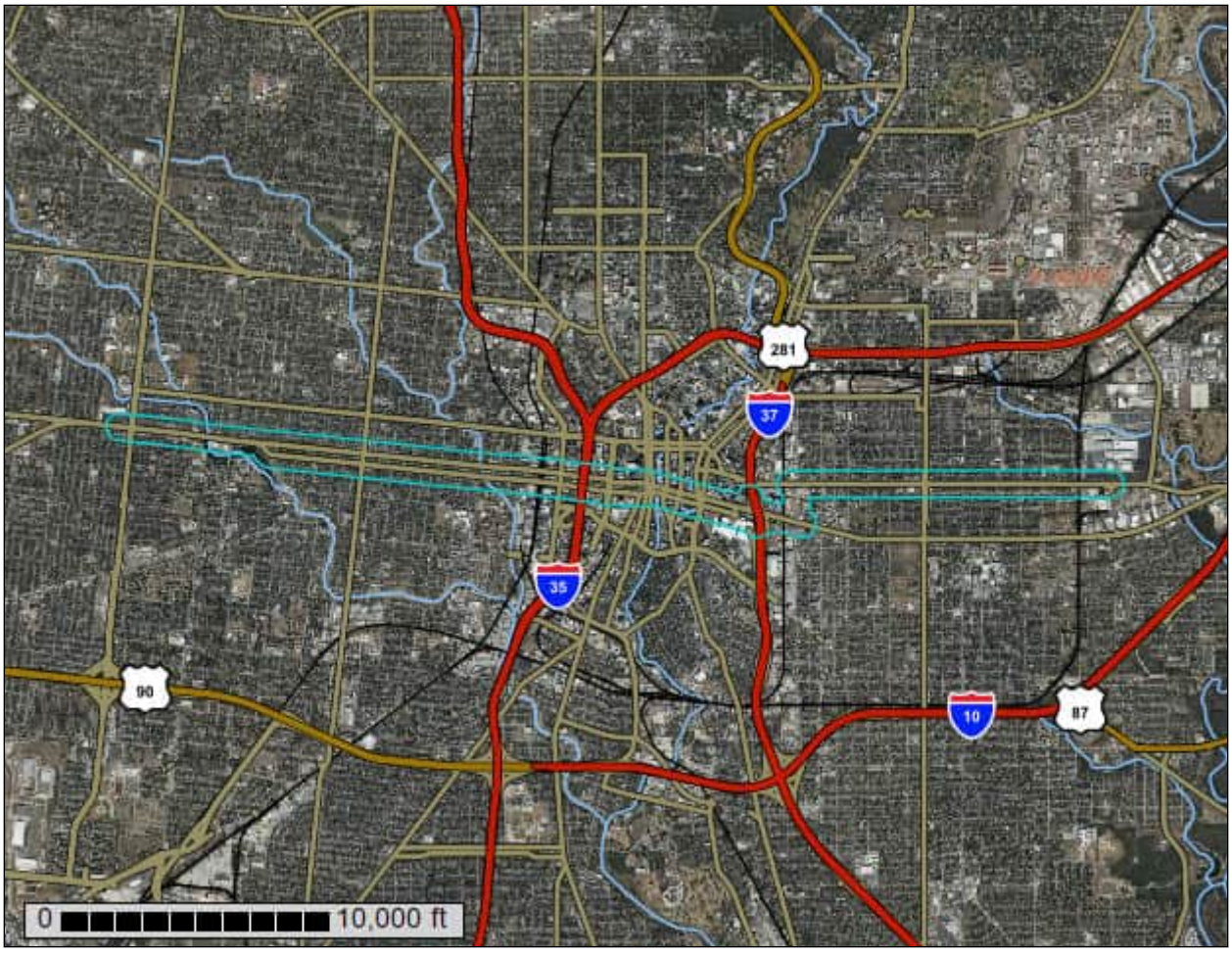
NRCS

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 Bexar County, Texas

VIA ART E/W Corridor Project



February 12, 2025

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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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

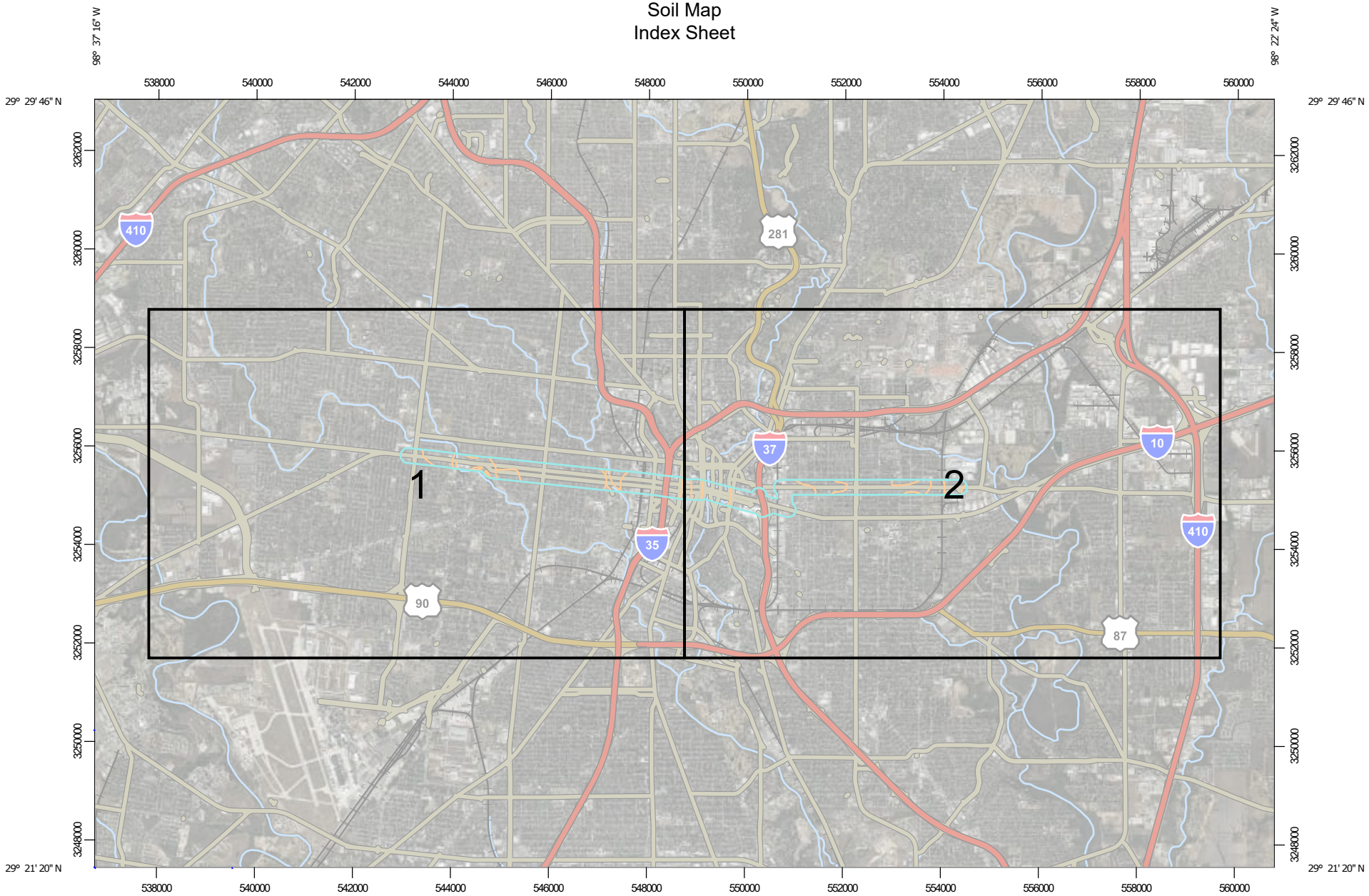
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

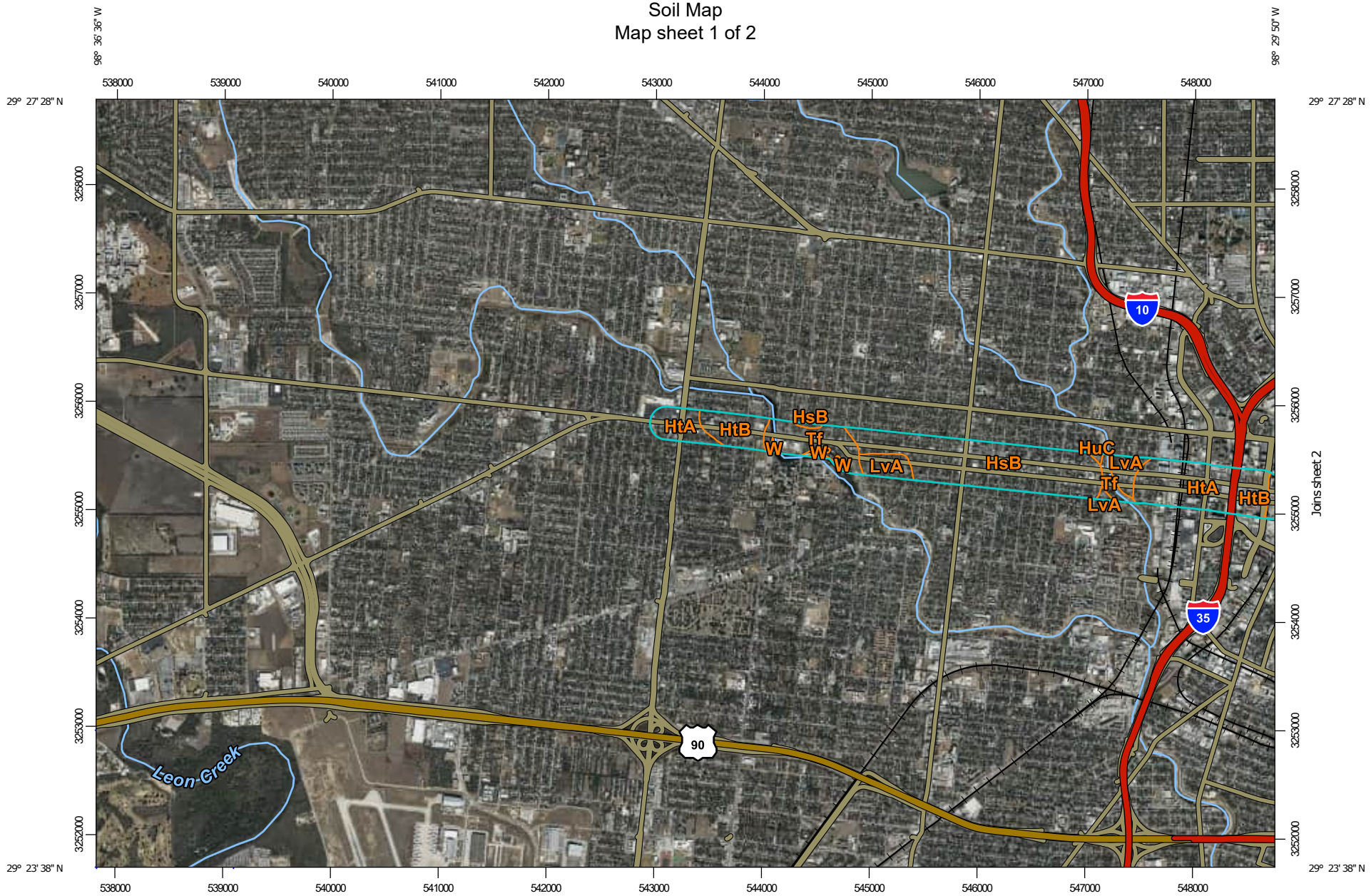
Soil Map

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
Index Sheet



Custom Soil Resource Report
Soil Map
Map sheet 1 of 2



Map Scale: 1:50,000 if printed on A landscape (11" x 8.5") sheet.

N

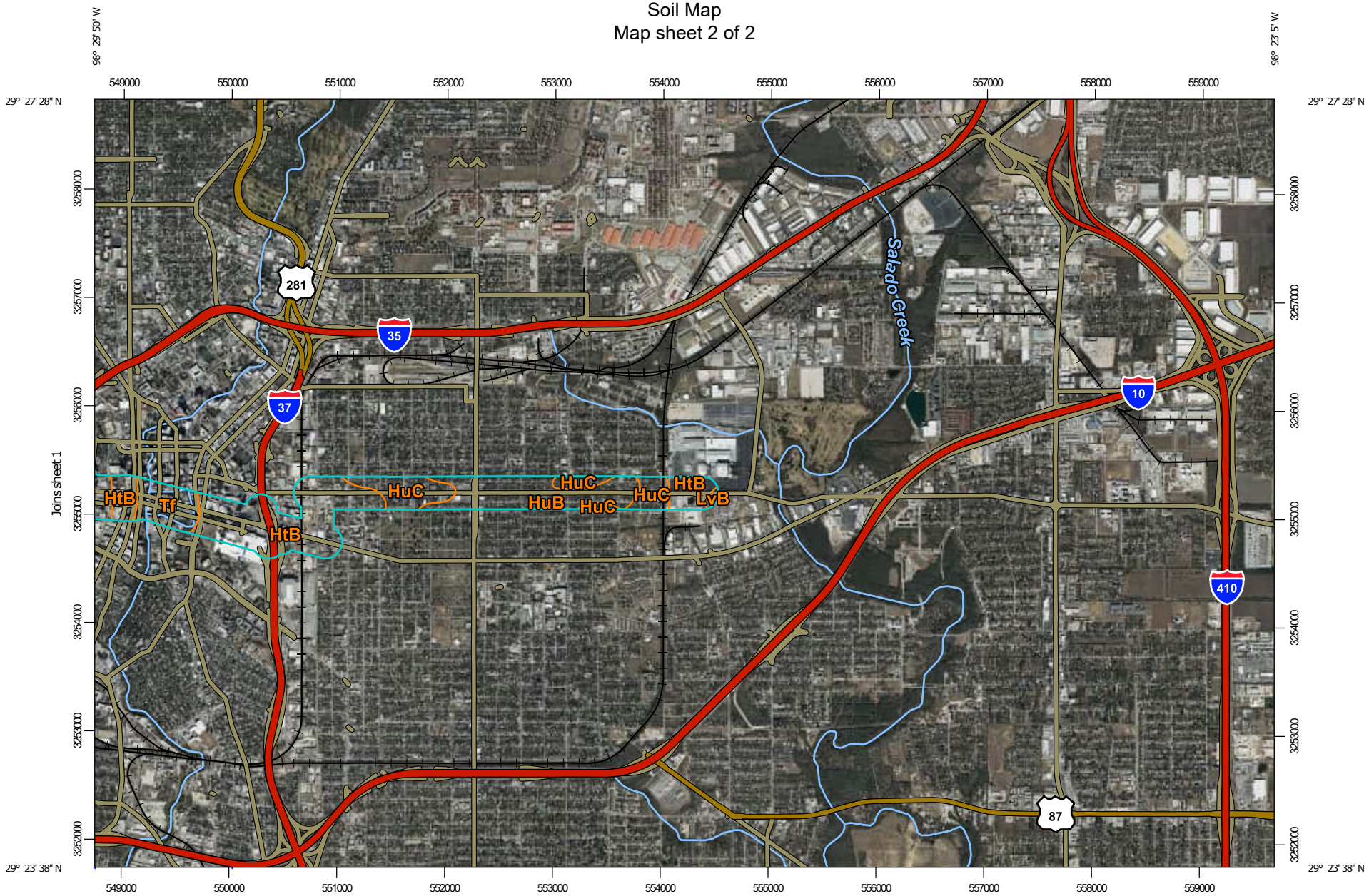
Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 2 of 2



Map Scale: 1:50,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Bexar County, Texas
Survey Area Data: Version 28, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 3, 2020—Dec 9, 2020

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
HsB	Houston Black clay, 1 to 3 percent slopes	215.0	19.9%
HtA	Branyon clay, 0 to 1 percent slopes	189.2	17.5%
HtB	Branyon clay, 1 to 3 percent slopes	282.6	26.1%
HuB	Houston Black gravelly clay, 1 to 3 percent slopes	118.8	11.0%
HuC	Houston Black gravelly clay, 3 to 5 percent slopes	91.3	8.4%
LvA	Lewisville silty clay, 0 to 1 percent slopes	47.1	4.4%
LvB	Lewisville silty clay, 1 to 3 percent slopes	3.2	0.3%
Tf	Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded	128.6	11.9%
W	Water	5.2	0.5%
Totals for Area of Interest		**1,080.9**	**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.

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.

Bexar County, Texas

HsB—Houston Black clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2ssh0
Elevation: 270 to 1,040 feet
Mean annual precipitation: 33 to 43 inches
Mean annual air temperature: 62 to 63 degrees F
Frost-free period: 217 to 244 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Houston black and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houston Black

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Clayey residuum weathered from calcareous mudstone of upper cretaceous age

Typical profile

Ap - 0 to 6 inches: clay
Bkss - 6 to 70 inches: clay
BCkss - 70 to 80 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland

Hydric soil rating: No

Minor Components

Heiden

Percent of map unit: 15 percent
Landform: Plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Fairlie

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

HtA—Branyon clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2shgv
Elevation: 290 to 1,050 feet
Mean annual precipitation: 31 to 38 inches
Mean annual air temperature: 65 to 70 degrees F
Frost-free period: 238 to 288 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Branyon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Branyon

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous clayey alluvium derived from mudstone of pleistocene age

Typical profile

Ap - 0 to 12 inches: clay
Bkss - 12 to 72 inches: clay
BCkss - 72 to 80 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: High
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 7.0
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Houston black

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Lewisville

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY007TX - Southern Clay Loam
Hydric soil rating: No

Burleson

Percent of map unit: 5 percent
Landform: Stream terraces, stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, circular gilgai
Down-slope shape: Linear

Across-slope shape: Linear
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

HtB—Branyon clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2shgw
Elevation: 290 to 1,040 feet
Mean annual precipitation: 33 to 39 inches
Mean annual air temperature: 66 to 70 degrees F
Frost-free period: 243 to 288 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Branyon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Branyon

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous clayey alluvium derived from mudstone of pleistocene age

Typical profile

Ap - 0 to 12 inches: clay
Bkss - 12 to 72 inches: clay
BCkss - 72 to 80 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 7.0
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Houston black

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Burleson

Percent of map unit: 5 percent
Landform: Stream terraces, stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, circular gilgai
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Lewisville

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY007TX - Southern Clay Loam
Hydric soil rating: No

HuB—Houston Black gravelly clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2sshn
Elevation: 420 to 1,030 feet
Mean annual precipitation: 33 to 37 inches
Mean annual air temperature: 68 to 69 degrees F
Frost-free period: 263 to 270 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Houston black and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houston Black

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Clayey residuum weathered from calcareous mudstone of upper cretaceous age

Typical profile

A - 0 to 6 inches: gravelly clay
Bkss - 6 to 70 inches: clay
BCkss - 70 to 80 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Heiden

Percent of map unit: 15 percent
Landform: Plains
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Houston black, taxadjunct

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

HuC—Houston Black gravelly clay, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2shgt
Elevation: 420 to 1,050 feet
Mean annual precipitation: 31 to 34 inches
Mean annual air temperature: 69 to 70 degrees F
Frost-free period: 262 to 277 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Houston black and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houston Black

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from calcareous mudstone of upper cretaceous age

Typical profile

Ap - 0 to 13 inches: gravelly clay
Bkss - 13 to 63 inches: clay
BCkssz - 63 to 86 inches: clay

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Houston black, taxadjunct

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Heiden

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

LvA—Lewisville silty clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2vtgz
Elevation: 330 to 1,360 feet
Mean annual precipitation: 32 to 40 inches
Mean annual air temperature: 66 to 69 degrees F
Frost-free period: 258 to 274 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Lewisville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lewisville

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous clayey alluvium derived from mudstone

Typical profile

Ap - 0 to 17 inches: silty clay
Bk1 - 17 to 44 inches: silty clay
Bk2 - 44 to 61 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: 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: 40 percent
Maximum salinity: Nonsaline (0.7 to 1.1 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: R086AY007TX - Southern Clay Loam
Hydric soil rating: No

Minor Components

Branyon

Percent of map unit: 10 percent
Landform: Stream terraces, stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

LvB—Lewisville silty clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2vtgn
Elevation: 240 to 1,470 feet
Mean annual precipitation: 32 to 44 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 240 to 270 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Lewisville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lewisville

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous clayey alluvium derived from mudstone

Typical profile

Ap - 0 to 15 inches: silty clay
Bk1 - 15 to 38 inches: silty clay
Bk2 - 38 to 69 inches: silty clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
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: 40 percent
Maximum salinity: Nonsaline (0.7 to 1.1 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R086AY007TX - Southern Clay Loam
Hydric soil rating: No

Minor Components

Altoga

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY007TX - Southern Clay Loam
Hydric soil rating: No

Branyon

Percent of map unit: 5 percent
Landform: Stream terraces, stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Tf—Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2y0v4
Elevation: 410 to 1,470 feet
Mean annual precipitation: 28 to 34 inches
Mean annual air temperature: 65 to 70 degrees F
Frost-free period: 232 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Tinn and similar soils: 70 percent
Frio and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tinn

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

A - 0 to 18 inches: clay
Bss - 18 to 72 inches: clay
Bkssy - 72 to 80 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: High
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: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Ecological site: R086AY013TX - Clayey Bottomland
Hydric soil rating: No

Description of Frio

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous loamy and/or clayey alluvium

Typical profile

A1 - 0 to 22 inches: clay loam
A2 - 22 to 40 inches: silty clay loam
Bk - 40 to 80 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C

Ecological site: R086AY012TX - Loamy Bottomland
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
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.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix C Biological Resources

Ecoregions of Texas Map

TPWD Vegetation Map

2020 Census Urban Area Map

Geologic Map

Karst Zones and Karst Fauna Region Map

TxNDD Element Occurrences Map

USFWS IPaC List

TPWD RTEST List

Federal and State Listed Species Analysis Table

SGCN Analysis Table

RAIL Migratory Birds List

BGEPA Species Analysis Table

Ecoregions of Texas

Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. They are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. These general purpose regions are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernment organizations that are responsible for different types of resources within the same geographical areas

The approach used to compile this map is based on the premise that ecological regions can be identified through the analysis of the spatial patterns of biotic and abiotic phenomena, including geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. The relative importance of each characteristic varies from one ecological region to another regardless of the hierarchical level.

The Ecoregions of Texas map was compiled at a scale of 1:250,000. Compilation of this map was part of a collaborative project primarily between the TCEQ, US EPA, USGS, USDA-NRCS, as well as with other state and federal agencies. Comments regarding this map should be addressed to Glenn Griffith, Dynamac Corp., c/o US EPA, 200 SW 35th Street, Corvallis, OR 97333, (541) 754-4465, griffith.glenn@epa.gov; Sandy Bryce, Dynamac Corp., c/o US EPA, 200 SW 35th Street, Corvallis, OR 97333, (541) 754-4788, bryce.sandy@epa.gov; or Jim Omernik, U.S. Geological Survey, 200 SW 35th Street, Corvallis, OR 97333, (541) 754-4458, omernik.james@epa.gov.

Citation:
Griffith, G.E., S.A. Bryce, J.M. Omernik, J.A. Comstock, A.C. Rogers, B. Harrison, S.L. Hatch, and D. Bezanson, 2004, Ecoregions of Texas, U.S. Environmental Protection Agency, Corvallis, OR.

PRINCIPAL AUTHORS: Glenn E. Griffith (Dynamac Corporation), Sandra A. Bryce (Dynamac Corporation), James M. Omernik (USGS), Jeffrey A. Comstock (Indus Corporation), Anne C. Rogers (TCEQ), Bill Harrison (TCEQ), Stephen L. Hatch (Texas A&M University), and David Bezanson (Natural Area Preservation Association).

23 Arizona/New Mexico Mountains
- 23a Chihuahuan Desert Slopes
- 23b Montane Woodlands

24 Chihuahuan Deserts
- 24a Chihuahuan Basins and Playas
- 24b Chihuahuan Desert Grasslands
- 24c Low Mountains and Bajadas
- 24d Chihuahuan Montane Woodlands
- 24e Stockton Plateau

25 High Plains
- 25b Rolling Sand Plains
- 25e Canadian/Cimarron High Plains
- 25i Llano Estacado
- 25j Shinnery Sands
- 25k Arid Llano Estacado

26 Southwestern Tablelands
- 26a Canadian/Cimarron Breaks
- 26b Flat Tablelands and Valleys
- 26c Caprock Canyons, Badlands, and Breaks
- 26d Semiarid Canadian Breaks

27 Central Great Plains
- 27h Red Prairie
- 27i Broken Red Plains
- 27j Limestone Plains

29 Cross Timbers
- 29b Eastern Cross Timbers
- 29c Western Cross Timbers
- 29d Grand Prairie
- 29e Limestone Cut Plain
- 29f Carbonate Cross Timbers

30 Edwards Plateau
- 30a Edwards Plateau Woodland
- 30b Llano Uplift
- 30c Balcones Canyonlands
- 30d Semiarid Edwards Plateau

31 Southern Texas Plains
- 31a Northern Nueces Alluvial Plains
- 31b Semiarid Edwards Bajada
- 31c Texas-Tamaulipan Thornscrub
- 31d Rio Grande Floodplain and Terraces

32 Texas Blackland Prairies
- 32a Northern Blackland Prairie
- 32b Southern Blackland Prairie
- 32c Floodplains and Low Terraces

33 East Central Texas Plains
- 33a Northern Post Oak Savanna
- 33b Southern Post Oak Savanna
- 33c San Antonio Prairie
- 33d Northern Prairie Outliers
- 33e Bastrop Lost Pines
- 33f Floodplains and Low Terraces

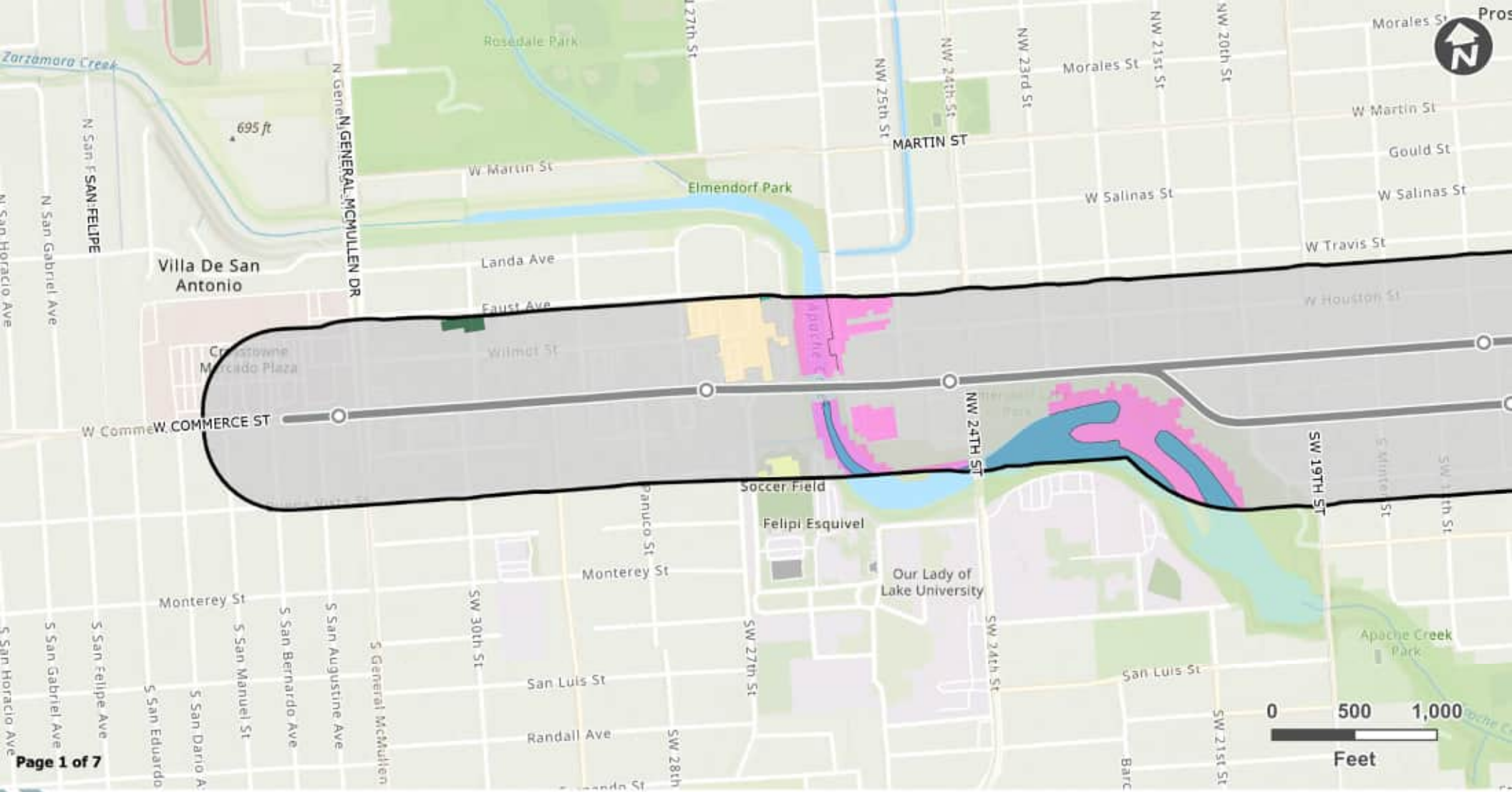
34 Western Gulf Coastal Plain
- 34a Northern Humid Gulf Coastal Prairies
- 34b Southern Subhumid Gulf Coastal Prairies
- 34c Floodplains and Low Terraces
- 34d Coastal Sand Plain
- 34e Lower Rio Grande Valley
- 34f Lower Rio Grande Alluvial Floodplain
- 34g Texas-Louisiana Coastal Marshes
- 34h Mid-Coast Barrier Islands and Coastal Marshes
- 34i Laguna Madre Barrier Islands and Coastal Marshes

35 South Central Plains
- 35a Tertiary Uplands
- 35b Floodplains and Low Terraces
- 35c Pleistocene Fluvial Terraces
- 35e Southern Tertiary Uplands
- 35f Flatwoods
- 35g Red River Bottomlands

Level III ecoregion
Level IV ecoregion
County boundary
State boundary
International boundary

SCALE 1:2 500 000
30 20 10 0 60 120 mi
60 40 20 0 120 240 km
Albers equal area projection
Standard parallels 27˚ 30' N and 34˚ 30' N

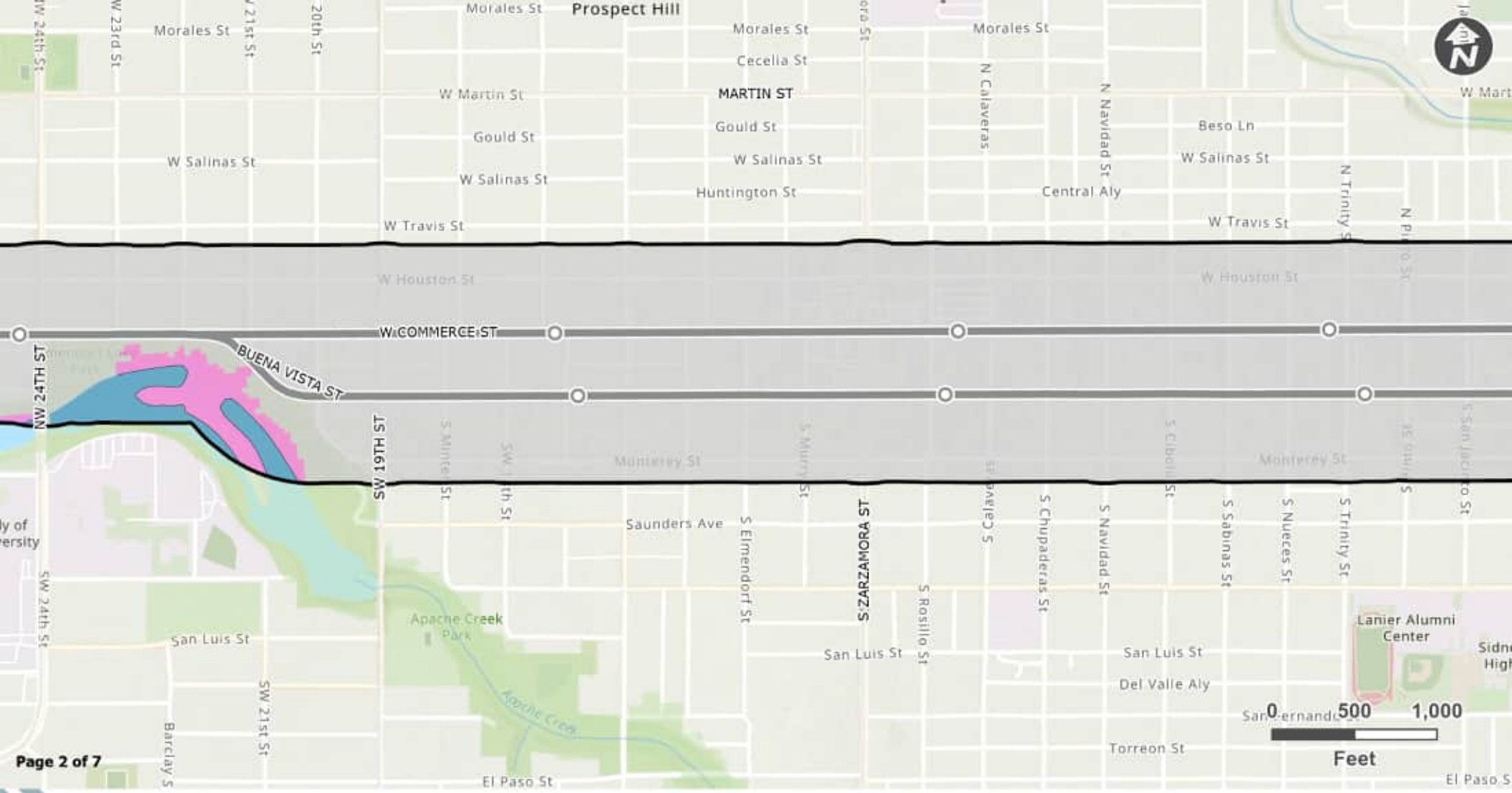
INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—2004



TPWD Vegetation Map

- ART East/West Stations
- ART East/West Alignment
- ART North/South Alignment
- 500-ft Buffer
- Agriculture
- East-Central Texas Plains Post Oak Savanna and Woodland
- Native Invasive: Huisache Woodland or Shrubland
- Native Invasive: Mesquite Shrubland
- Open Water
- Riparian
- Southeastern Great Plains Floodplain Forest
- Urban
- Barren

Sources: VIA 2025, AAMPO 2024, COSA 2024, TPWD Vegetation 2023



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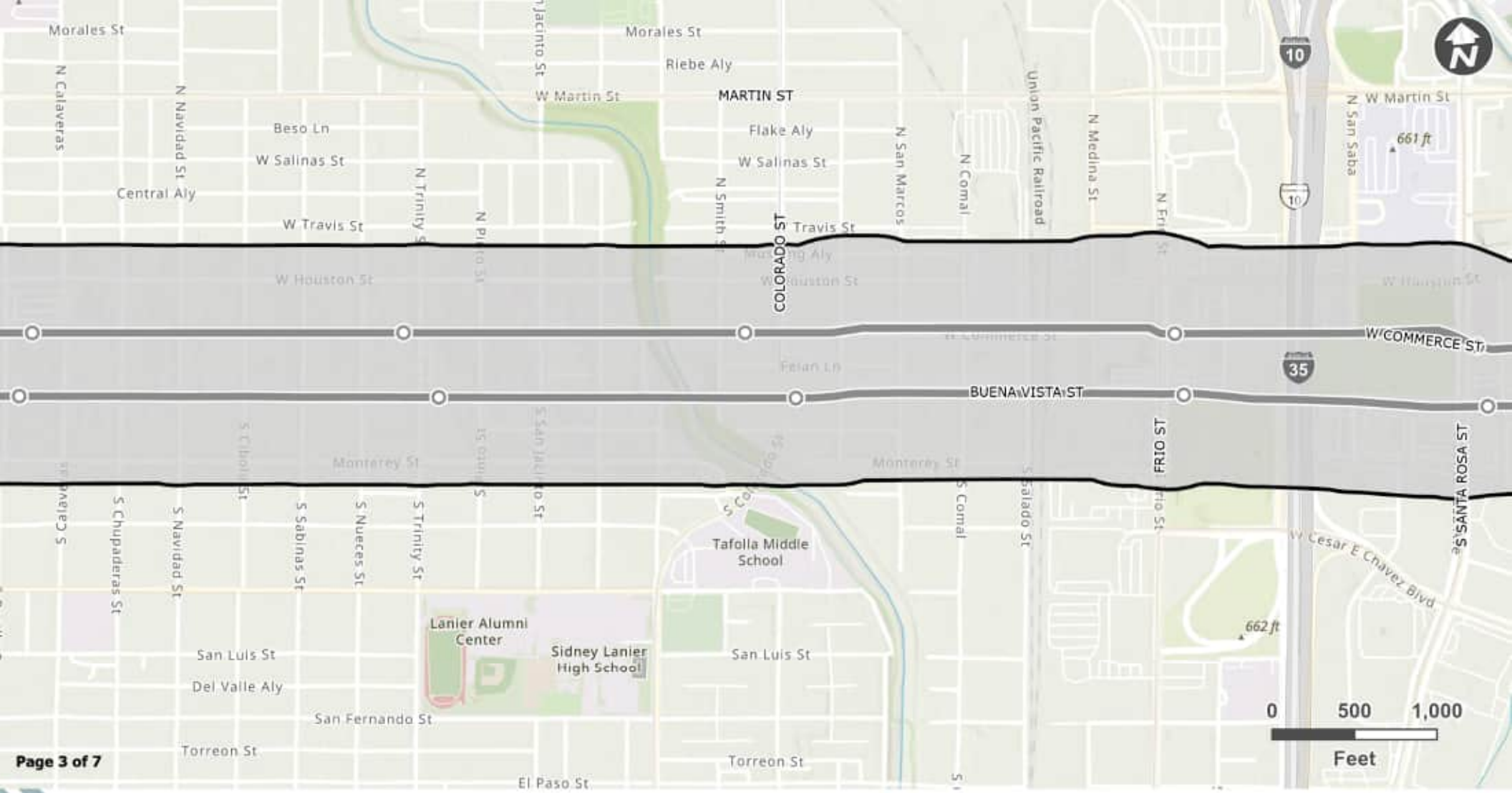

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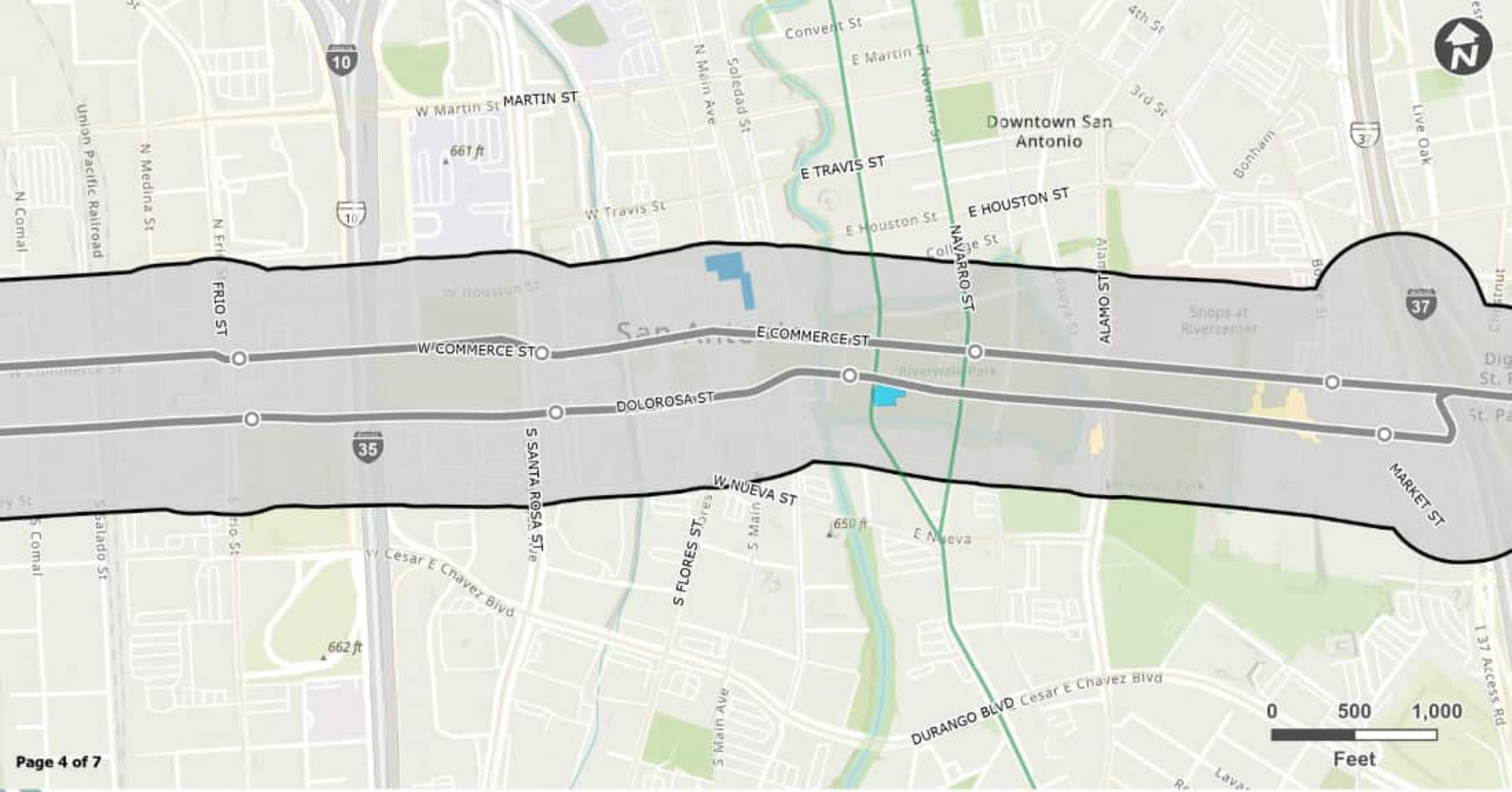
- Urban
- Barren

Sources: VIA 2025, AAMPO 2024, COSA 2024, TPWD Vegetation 2023



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Sources: VIA 2025, AAMPO 2024, COSA 2024, TPWD Vegetation 2023

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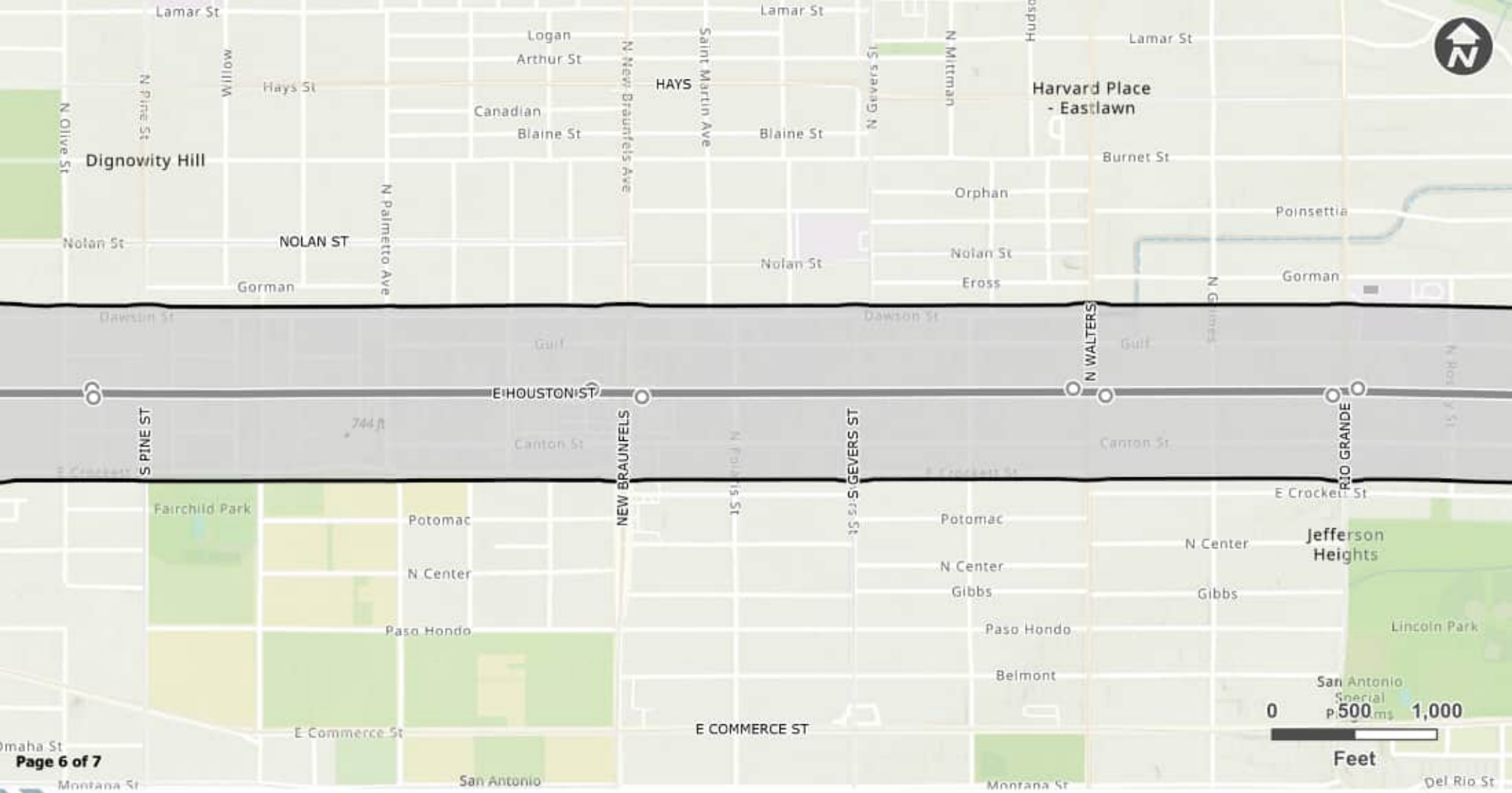
- Urban
- Barren

Sources: VIA 2025, AAMPO 2024, COSA 2024, TPWD Vegetation 2023



TPWD Vegetation Map

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- ART East/West Alignment
- ART North/South Alignment
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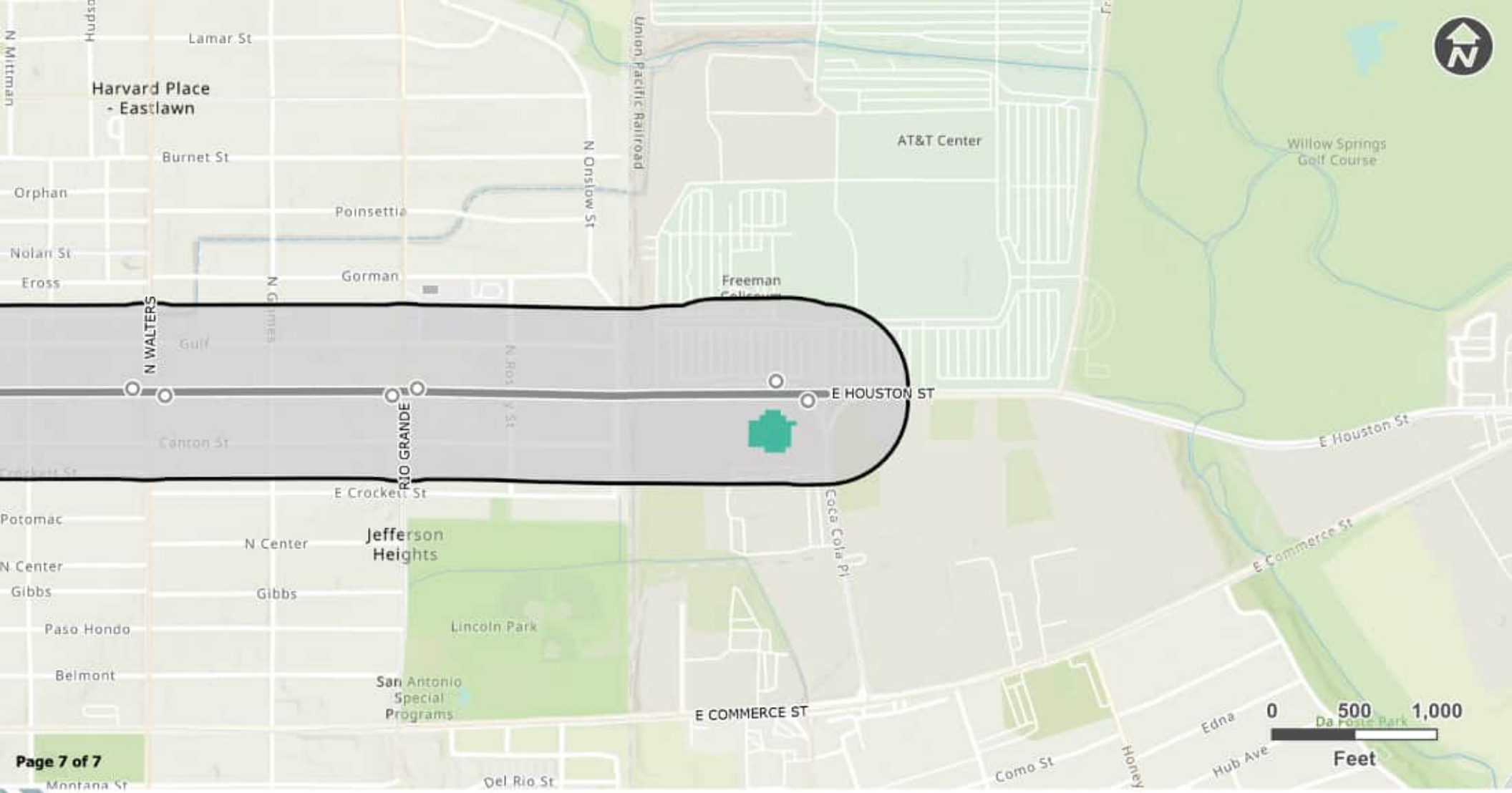
- Urban
- Barren

Sources: VIA 2025, AAMPO 2024, COSA 2024, TPWD Vegetation 2023



TPWD Vegetation Map

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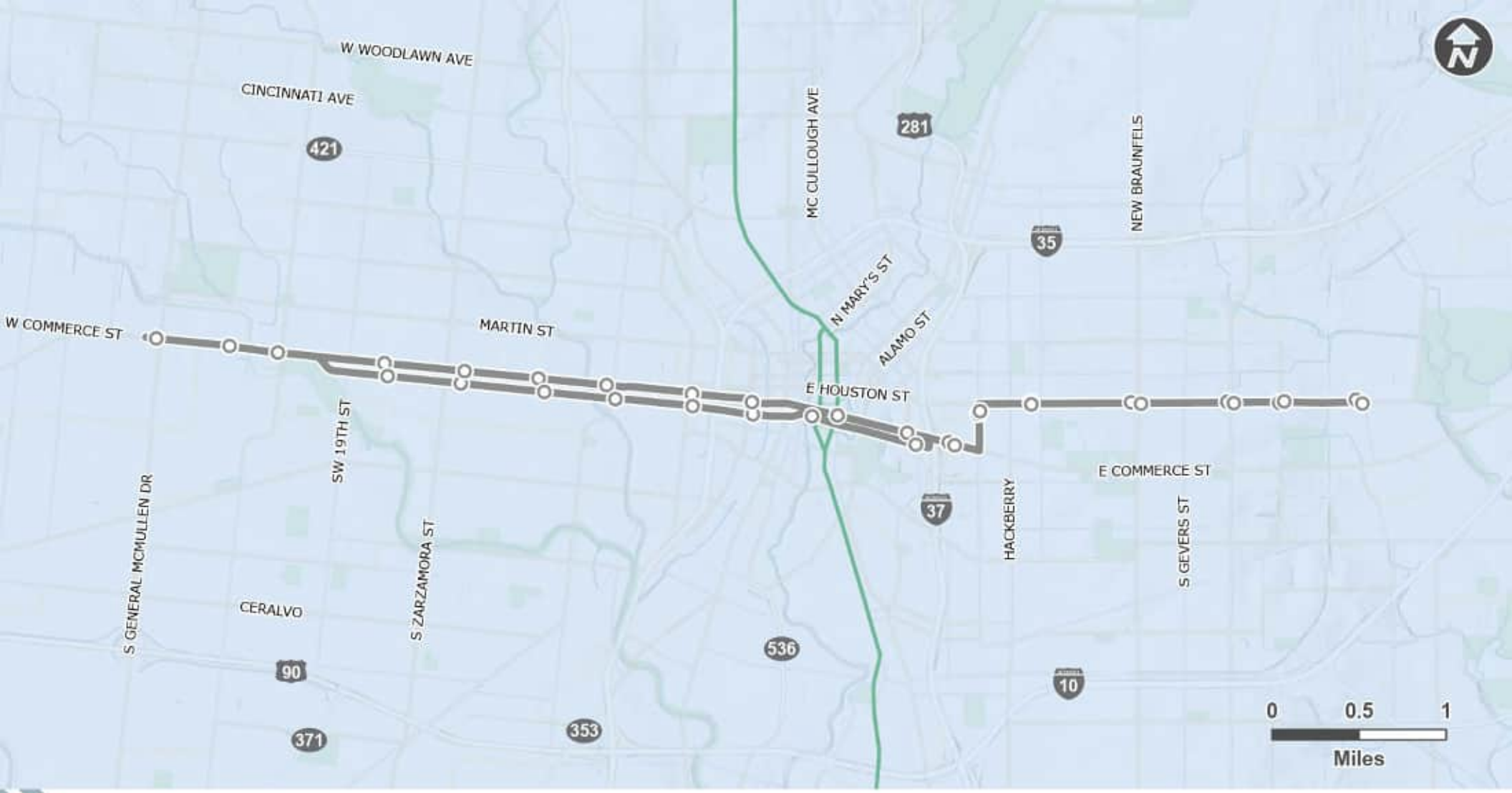
- Southeastern Great Plains Floodplain Forest
- Urban
- Barren

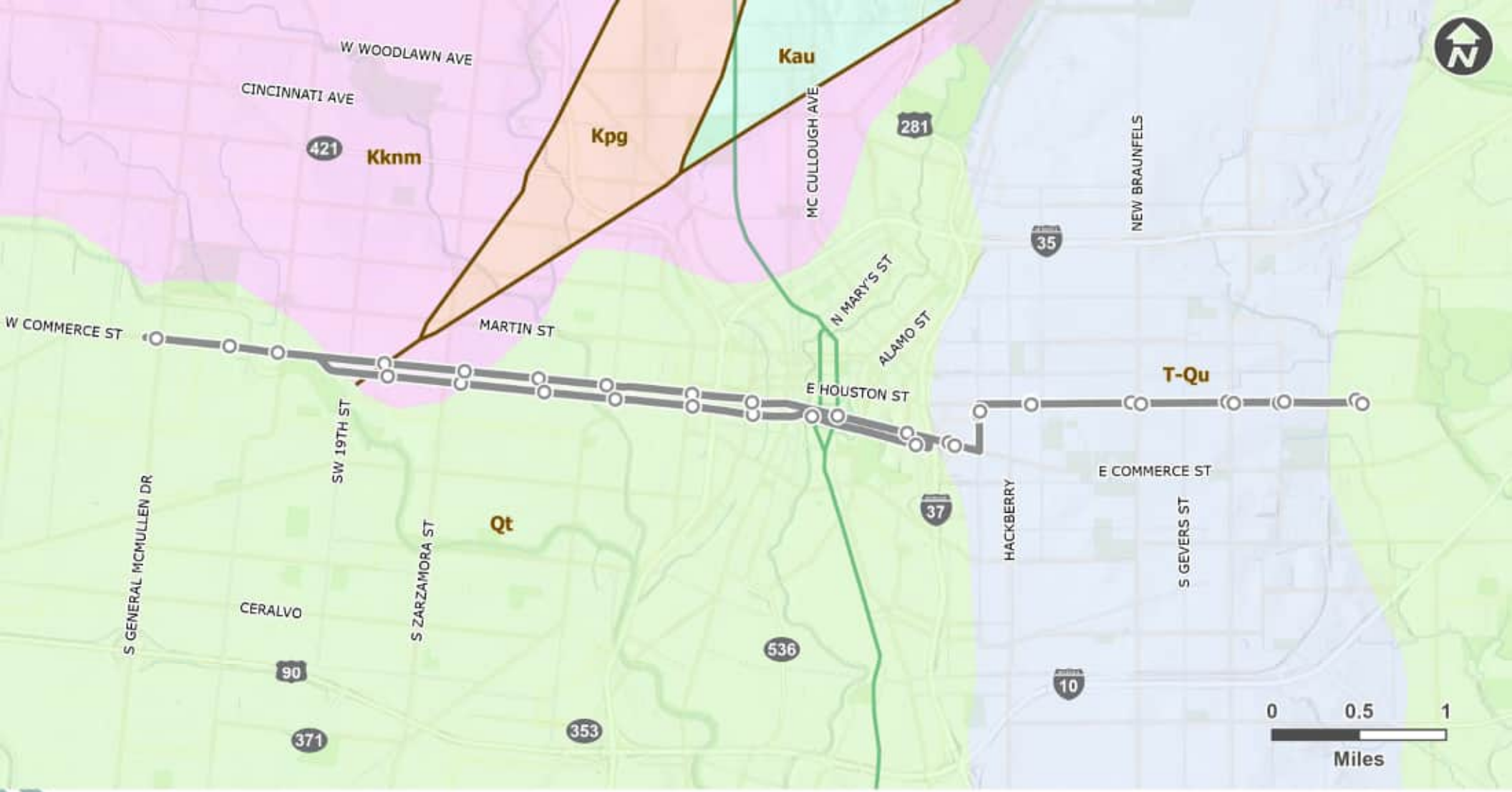
Sources: VIA 2025, AAMPO 2024, COSA 2024, TPWD Vegetation 2023



2020 Census Urban Area Map

- ART East/West Stations
- ART East/West Alignment
- ART North/South Alignment
- Urban Area

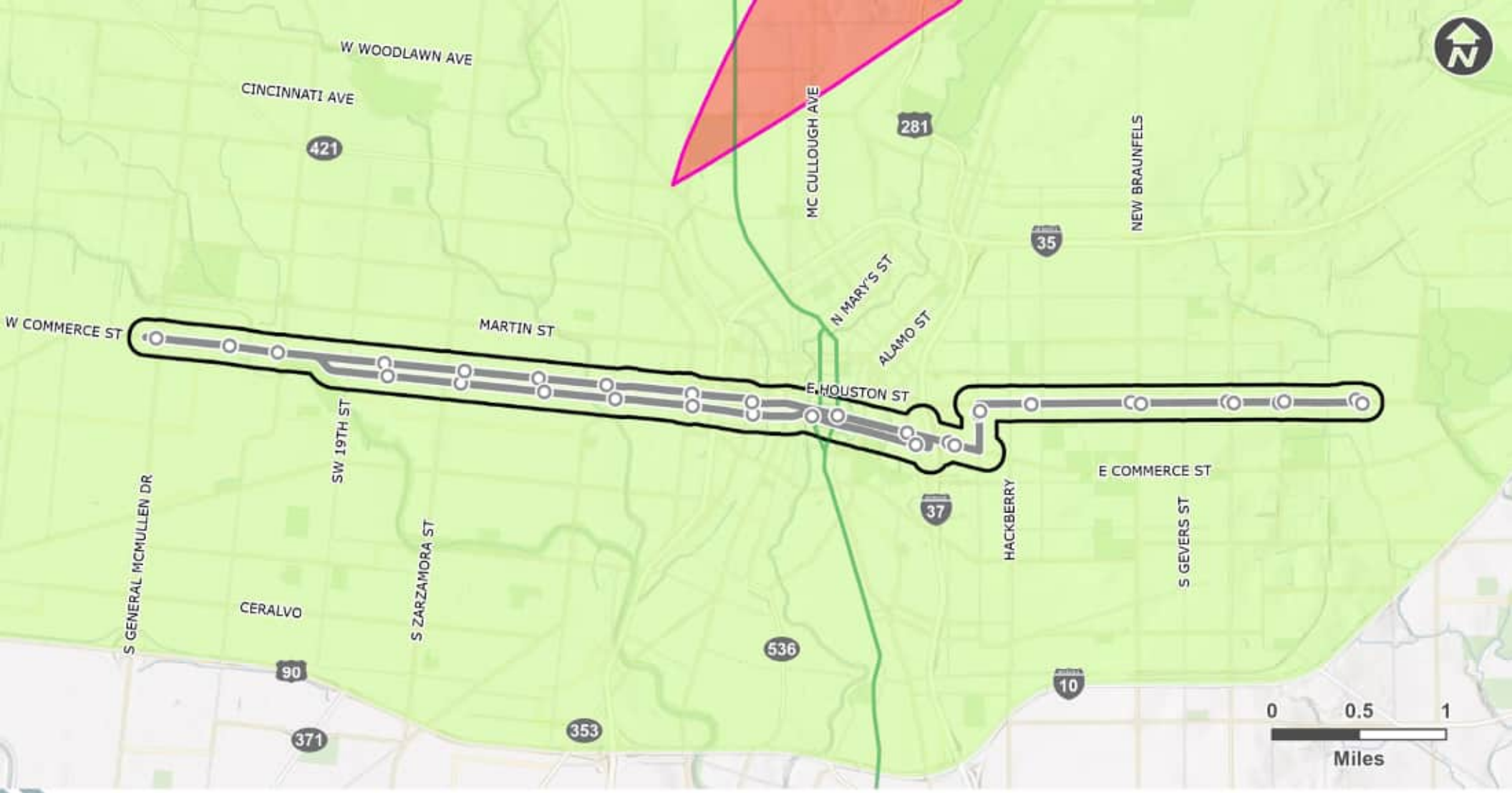
Sources: VIA 2025, AAMPO 2024, COSA 2024, USCB 2020



Geologic Map

- ART East/West Stations
- ART East/West Alignment
- ART North/South Alignment
- Fault Lines
- Uvalde Gravel (T-Qu)
- Fluviatile Terrace Deposits (Qt)
- Pecan Gap Chalk (Kpg)
- Navarro Group and Marlbrook Marl (Kknm)
- Austin Chalk (Kau)

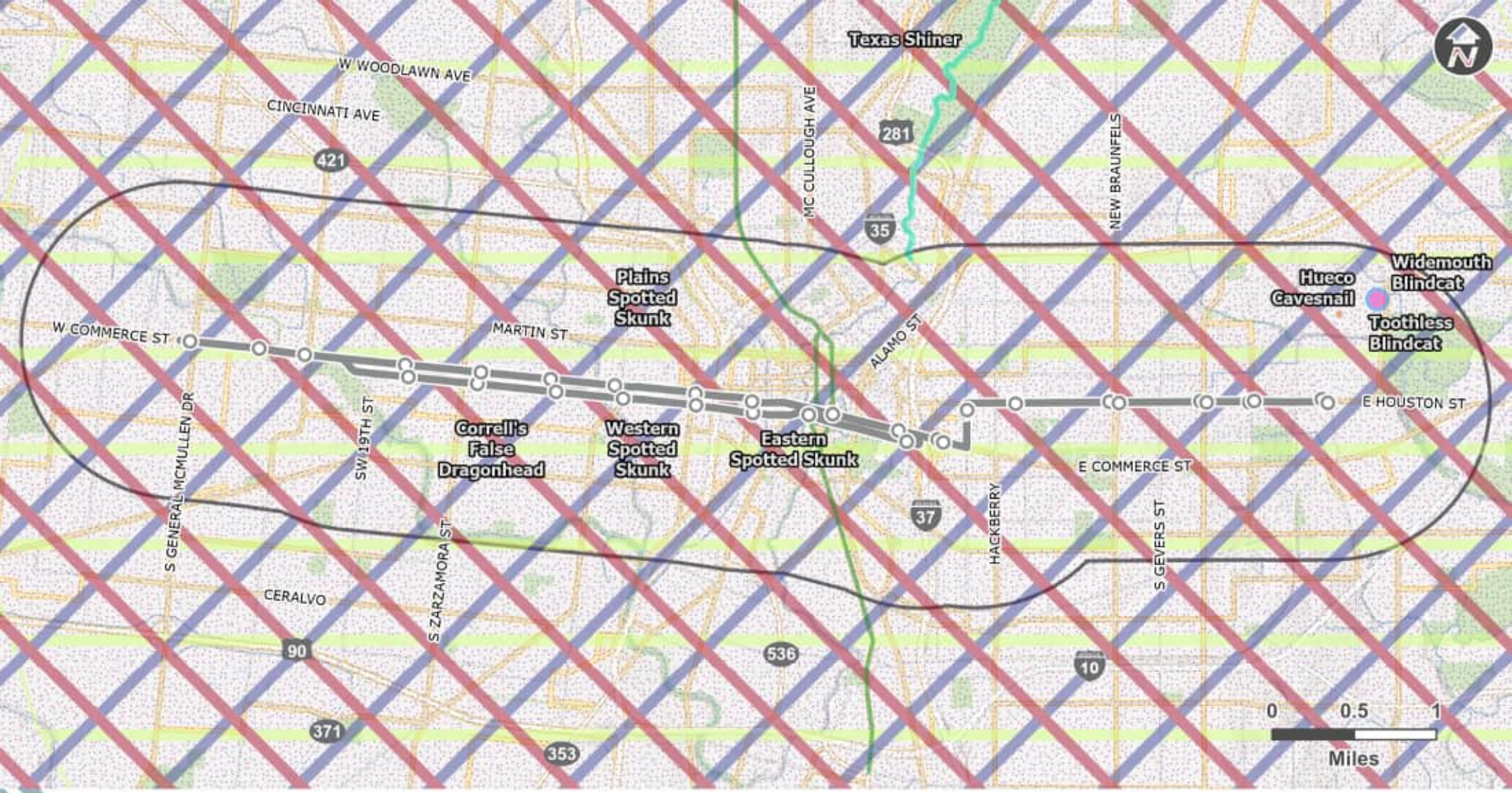
Sources: VIA 2025, AAMPO 2024, COSA 2024, USGS Geologic Features 2019



Karst Zones and Karst Fauna Region Map

- ART East/West Stations
- ART East/West Alignment
- ART North/South Alignment
- 500-ft Buffer
- Alamo Heights Karst Fauna Region
- Karst Zone 1
- Karst Zone 2
- Karst Zone 3a
- Karst Zone 3b
- Karst Zone 4a
- Karst Zone 4b

Sources: VIA 2025, AAMPO 2024, COSA 2024, USFWS Karst Features 2024



Texas Natural Diversity Database (TxNDD) Element Occurrences Map

- ART East/West Stations
- ART East/West Alignment
- ART North/South Alignment
- 1-Mile Buffer
- Hueco Cavesnail
- Texas Shiner
- Toothless Blindcat
- Widemouth Blindcat
- Correll's False Dragonhead
- Eastern Spotted Skunk
- Plains Spotted Skunk
- Western Spotted Skunk

Sources: VIA 2025, AAMPO 2024, COSA 2024, TPWD TxNDD 2023

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
1505 Ferguson Lane
Austin, TX 78754-4501
Phone: (512) 937-7371

In Reply Refer To: 02/12/2025 15:46:34 UTC
Project Code: 2025-0055377
Project Name: VIA ART Silver Line

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, 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 U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), 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 U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

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 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/library/collections/threats-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. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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

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:

Austin Ecological Services Field Office
1505 Ferguson Lane
Austin, TX 78754-4501
(512) 937-7371

PROJECT SUMMARY

Project Code: 2025-0055377
Project Name: VIA ART Silver Line
Project Type: Road/Hwy - Maintenance/Modification
Project Description: Transit improvement
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@29.425929,-98.4581575272245,14z

Counties: Bexar County, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 20 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 3 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Golden-cheeked Warbler *Setophaga chrysoparia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

AMPHIBIANS

NAME	STATUS
San Marcos Salamander *Eurycea nana* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6374	Threatened
Texas Blind Salamander *Eurycea rathbuni* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Effects to water quality and quantity in the Edwards Aquifer and to surface waters in the recharge and contributing zones of the Edwards Aquifer must be considered if they adversely affect water quality and quantity in Texas blind salamander habitat Species profile: https://ecos.fws.gov/ecp/species/5130	Endangered

FISHES

NAME	STATUS
Fountain Darter *Etheostoma fonticola* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5858	Endangered

INSECTS

NAME	STATUS
[no Common Name] Beetle *Rhadine exilis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6942	Endangered
[no Common Name] Beetle *Rhadine infernalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3804	Endangered
Comal Springs Dryopid Beetle *Stygoparnus comalensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7175	Endangered
Comal Springs Riffle Beetle *Heterelmis comalensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3403	Endangered
Helotes Mold Beetle *Batrisodes venyivi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1149	Endangered
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

ARACHNIDS

NAME	STATUS
Cokendolpher Cave Harvestman *Texella cokendolpheri* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/676	Endangered
Government Canyon Bat Cave Meshweaver *Cicurina vespera* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7037	Endangered
Government Canyon Bat Cave Spider *Tayshaneta microps* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/553	Endangered
Madla Cave Meshweaver *Cicurina madla* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2467	Endangered
Robber Baron Cave Meshweaver *Cicurina baronia* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2361	Endangered

CRUSTACEANS

NAME	STATUS
Peck's Cave Amphipod *Stygobromus (=Stygonectes) pecki*	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/8575

FLOWERING PLANTS

NAME	STATUS
Texas Wild-rice *Zizania texana*	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/805

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.

IPAC USER CONTACT INFORMATION

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Last Update: 1/15/2025

BEXAR COUNTY

AMPHIBIANS

Cascade Caverns salamander *Eurycea latitans*

Aquatic; springs, streams and caves with rocky or cobble beds.

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

eastern tiger salamander *Ambystoma tigrinum*

Terrestrial adults generally occur under cover objects or in burrows surrounding a variety of lentic freshwater habitats, such as ponds, lakes, bottomland wetlands, or upland ephemeral pools. The specific terrestrial habitats are also varied and the occurrence of this species seems to be more closely associated with sandy, loamy or other soils which have easy burrowing properties, rather than any particular ecological system type. Requires fishless breeding pools for successful reproduction.

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

Strecker's chorus frog *Pseudacris streckeri*

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

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

Texas salamander *Eurycea neotenes*

Aquatic; springs, streams and caves with rocky or cobble beds.

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

Valdina Farms sinkhole salamander *Eurycea troglodytes*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3S4

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: S5

BEXAR COUNTY

ARACHNIDS

Cokendolpher Cave harvestman *Texella cokendolpheri*

Small, eyeless harvestman; karst features in north and northwest Bexar County

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

Government Canyon Bat Cave meshweaver *Cicurina vespera*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

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

Government Canyon Bat Cave spider *Neoleptoneta microps*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

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

Madla Cave meshweaver *Cicurina madla*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

Federal Status: E	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S2

No accepted common name *Tartarocreagris amblyopa*

Habitat description is not available at this time.

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

No accepted common name *Tartarocreagris reyesi*

Habitat description is not available at this time.

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

Reddell's Cave Millipede *Speodesmus reddelli*

Habitat description is not available at this time.

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

BEXAR COUNTY

ARACHNIDS

Robber Baron Cave meshweaver *Cicurina baronia*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

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

ARTHROPODS

Ivy's Cave Millipede *Speodesmus ivyi*

Habitat description is not available at this time.

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

Sickled Cave Millipede *Speodesmus falcatus*

Habitat description is not available at this time.

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

BIRDS

bald eagle *Haliaeetus leucocephalus*

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

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

Bank Swallow *Riparia riparia*

Bank Swallows live in low areas along rivers, streams, ocean coasts, and reservoirs. Their territories usually include vertical cliffs or banks where they nest in colonies of 10 to 2,000 nests. Though in the past Bank Swallows were most commonly found around natural bluffs or eroding streamside banks, they now often nest in human-made sites, such as sand and gravel quarries or road cuts. They forage in open areas and avoid places with tree cover.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B,S4N

black-capped vireo *Vireo atricapilla*

Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer

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

BEXAR COUNTY

BIRDS

Brewer's Blackbird *Euphagus cyanocephalus*

Shrubby and bushy areas (especially near water), riparian woodland, aspen parklands, cultivated lands, marshes, and around human habitation; in migration and winter also in pastures and fields (AOU 1983).

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

Brown Pelican *Pelecanus occidentalis*

Largely coastal and near shore areas, where it roosts and nests on islands and spoil banks. Feeds in lagunas and shallow seaward waters.

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

Cactus Wren *Campylorhynchus brunneicapillus*

Desert (especially with cholla cactus or yucca), mesquite, arid scrub, coastal sage scrub, and in trees in towns in arid regions (Tropical to Subtropical zones) (AOU 1983). Nests in OPUNTIA cactus, or in twiggy, thorny, trees and shrubs, sometimes in buildings. Nest may be relined and used as a winter roost.

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

chestnut-collared longspur *Calcarius ornatus*

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

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

Common Nighthawk *Chordeiles minor*

Common Nighthawks nest in both rural and urban habitats including coastal sand dunes and beaches, logged forest, recently burned forest, woodland clearings, prairies, plains, sagebrush, grasslands, open forests, and rock outcrops. They also nest on flat gravel rooftops, though less often as gravel roofs are being replaced by smooth, rubberized roofs that provide an unsuitable surface.

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

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

golden-cheeked warbler *Setophaga chrysoparia*

BEXAR COUNTY

BIRDS

Ashe juniper in mixed stands with various oaks (Quercus spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.

Federal Status: E	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2S3B

interior least tern *Sternula antillarum athalassos*

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

Federal Status:	State Status: E	SGCN: N
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

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

Least Tern *Sternula antillarum*

Sand beaches, flats, bays, inlets, lagoons, islands, river sandbars and flat gravel rooftops in urban areas.

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

Loggerhead Shrike *Lanius ludovicianus*

Loggerhead Shrikes inhabit open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. They frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries. Loggerhead Shrikes are often seen along mowed roadsides with access to fence lines and utility poles.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4B

Mottled Duck *Anas fulvigula*

Estuaries, ponds, lakes, secondary bays.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4B

BEXAR COUNTY

BIRDS

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 Bobwhite *Colinus virginianus*

Inhabits a wide variety of vegetation types, particularly early successional stages. Occurs in croplands, grasslands, pastures, fallow fields, grass-brush rangelands, open pinelands, open mixed pine-hardwood forests, and habitat mosaics (Brennan 1999).

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

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

Pyrrhuloxia *Cardinalis sinuatus*

Pyrrhuloxias live in upland deserts, mesquite savannas, riparian (streamside) woodlands, desert scrublands, farm fields with hedgerows, and residential areas with nearby mesquite. When not breeding, some Pyrrhuloxias wander into urban habitats, mesquite-hackberry habitats, and riparian habitats with Arizona sycamore and cottonwood.

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

Sanderling *Calidris alba*

Nonbreeding: primarily sandy beaches, less frequently on mud flats and shores of lakes or rivers (AOU 1983) also on exposed reefs (Pratt et al. 1987). Sleeps/loafs on upper beach or on salt pond dike.

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

Snowy Plover *Charadrius nivosus*

BEXAR COUNTY

BIRDS

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. An optimal site characteristic would be large in size. The size of populations appear to be roughly proportional to the total area of suitable habitat used. Formerly an uncommon breeder in the Panhandle; potential migrant; winter along coast.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3B

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

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: N
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: N
Endemic: N	Global Rank: G5	State Rank: S4B

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

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

Willet *Tringa semipalmata*

Marshes, tidal mudflats, beaches, lake margins, mangroves, tidal channels, river mouths, coastal lagoons, sandy or rocky shores, and, less frequently, open grassland (AOU 1983, Stiles and Skutch 1989).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5B

Wilson's Warbler *Cardellina pusilla*

BEXAR COUNTY

BIRDS

Wilson's warblers key in on forests and scrubby areas along streams to fatten up during migration. During the nonbreeding season they use many types of habitats from lowland thickets near streams to high-elevation cloud forests in Mexico and Central America.

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

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,S3N

yellow-billed cuckoo *Coccyzus americanus*

In Texas, the populations of concern are found breeding in riparian areas in the Trans Pecos (know as part of the Western Distinct Population Segment). It is the Western DPS that is on the U.S. ESA threatened list and includes the Texas counties Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, and Presidio. Riparian woodlands below 6,000' in elevation consisting of cottonwoods and willows are prime habitat. This species is a long-distant migrant that summers in Texas, but winters mainly in South America. Breeding birds of the Trans Pecos populations typically arrive on their breeding grounds possibly in late April but the peak arrival time is in May. Threats to preferred habitat include hydrologic changes that don't promote the regeneration of cottonwoods and willows, plus livestock browsing and trampling of sapling trees in sensitive riparian areas.

Federal Status: T	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4S5B

CRUSTACEANS

Cascade Cave amphipod *Stygobromus dejectus*

Subaquatic crustacean; subterranean obligate; in pools

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

Ezell's Cave amphipod *Stygobromus flagellatus*

Known only from artesian wells

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S3

No accepted common name *Mexiweckelia hardeni*

Habitat description is not available at this time.

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

BEXAR COUNTY

CRUSTACEANS

No accepted common name *Texiweckelia texensis*

Habitat description is not available at this time.

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

No accepted common name *Speocirolana hardeni*

Habitat description is not available at this time.

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

FISH

Guadalupe bass *Micropterus treculii*

Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.

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

river darter *Percina shumardi*

In Texas limited to eastern streams including Red River southward to the Neches River, and a disjunct population in the Guadalupe and San Antonio river systems east of the Balcones Escarpment. Confined to large rivers and lower parts of major tributaries; usually found in deep chutes and riffles where current is swift and bottom composed of coarse gravel or rock.

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

Texas shiner *Notropis amabilis*

In Texas, it is found primarily in Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat includes rocky or sandy runs, as well as pools.

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

toothless blindcat *Trogloglanis pattersoni*

Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.

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

BEXAR COUNTY

FISH

widemouth blindcat *Satan eurystomus*

Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.

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

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

Helotes mold beetle *Batrisodes venyivi*

Small, eyeless mold beetle; karst features in northwestern Bexar County and northeastern Medina County

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

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

migratory monarch butterfly *Danaus plexippus plexippus*

Habitat description is not available at this time.

Federal Status: C	State Status:	SGCN: Y
Endemic:	Global Rank: G4T3	State Rank: SNR

No accepted common name *Pygarctia lorula*

Habitat description is not available at this time.

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

No accepted common name *Nectopsyche texana*

Riparian, Riverine

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1G3	State Rank: S2?

BEXAR COUNTY

INSECTS

No accepted common name *Batrisodes shadeae*

This species was recently described from a single cave in Bexar Co., Texas (Chandler et al., 2009).

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

No accepted common name *Lymantes nadineae*

Habitat description is not available at this time.

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

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 *Megachile parksi*

Habitat description is not available at this time.

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

No accepted common name *Rhadine exilis*

Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County

Federal Status: E	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S1

No accepted common name *Rhadine infernalis*

Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County

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

MAMMALS

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

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

BEXAR COUNTY

MAMMALS

black bear *Ursus americanus*

Generalist. Historically found throughout Texas. In Chisos, prefers higher elevations where pinyon-oaks predominate; also occasionally sighted in desert scrub of Trans-Pecos (Black Gap Wildlife Management Area) and Edwards Plateau in juniper-oak habitat. For ssp. luteolus, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Bottomland hardwoods and large tracts of inaccessible forested areas.

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

black-tailed prairie dog *Cynomys ludovicianus*

Dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups

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

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

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

ghost-faced bat *Mormoops megalophylla*

Winter roosts are in large limestone caves. Buildings and rock crevasses provide roosts, as well.

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

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: S3

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

BEXAR COUNTY

MAMMALS

plains spotted skunk *Spilogale interrupta*

Generalist; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1S3

tricolored bat *Perimyotis subflavus*

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

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

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

false spike *Fusconaia mitchelli*

Occurs in small streams to medium-size rivers in habitats such as riffles and runs with flowing water. Is often found in stable substrates of sand, gravel, and cobble (Howells 2010; Randklev et al. 2012; Sowards et al. 2013; Tsakiris and Randklev 2016). [Mussels of Texas 2019]

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

Lilliput *Toxolasma parvum*

Reported from small streams, where it may penetrate into the headwaters, to large rivers, oxbows, sloughs, lakes, ponds, canals, borrow pits, and reservoirs. Primarily occurs in still to slow currents in mud and sand substrates (Coker et al. 1921; Read 1954; Neck and Metcalf 1988; Williams et al. 2008; Watters et al. 2009).

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

Mapleleaf *Quadrula quadrula*

Reported from streams to rivers, lakes, and reservoirs. In riverine habitats, it may be found in main-channel habitats such as riffles or runs in sand, gravel, and cobble substrates with moderate to swift currents. May also be found in nearshore habitats such as banks and backwaters to include pools in sand or mud substrates with little to no flow. (Williams et al. 2008; Howells 2016; Haag and Cicerello 2016).

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

BEXAR COUNTY

MOLLUSKS

mimic cavesnail *Phreatodrobia imitata*

Subaquatic; only known from two wells penetrating the Edwards Aquifer

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: G1 State Rank: S1

No accepted common name *Phreatodrobia conica*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: G1 State Rank: S2

Pimpleback *Cyclonaias pustulosa*

Occurs in small streams to large rivers in habitats including riffles and runs with flowing water, also found in nearshore habitats such as banks and backwaters or pools. Can occur in reservoirs but varies based by population. Is often found in substrates comprising of sand, gravel, and cobble but also mud and silt (Howells et al. 1996; Williams et al. 2008; Watters et al. 2009).

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G5 State Rank: SNR

Pistolgrip *Tritogonia verrucosa*

Reported from streams to rivers, lakes, and reservoirs, but considered less tolerant of impoundment (Haag and Cicerello 2016). Can occur in a variety of habitat types but most often found in main channel habitats such as riffles and runs with moderate current and sand, gravel, or cobble substrates (Howells et al. 1996; Williams et al. 2008).

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G4G5 State Rank: S3S4

Tampico Pearlymussel *Cyrtonaias tampicoensis*

Reported from streams to rivers, reservoirs, and canals. In riverine habitats often found in nearshore habitats such as banks and backwaters, to include pools and oxbows, in mud or sand or among cobble and boulders with still to moderate currents (Howells et al. 1996).

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G5 State Rank: S4

Tapered Pondhorn *Uniomerus declivis*

It likely occurs in streams, rivers, oxbows, marshes, swamps, lakes, canals, ponds, and reservoirs in still to moderate currents in mud, sand, or gravel substrates. Also probably occurs in woody debris such as logjams and exposed roots of riparian trees (Williams et al. 2008).

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G5 State Rank: SNR

REPTILES

American alligator *Alligator mississippiensis*

Aquatic: Coastal marshes; inland natural rivers, swamps and marshes; manmade impoundments.

Federal Status: SAT State Status: SGCN: N

BEXAR COUNTY

REPTILES

Endemic: N | Global Rank: G5 | State Rank: S4

Cagle's map turtle *Graptemys caglei*

Aquatic: shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; gravel bar riffles and transition areas between riffles and pools especially important in providing insect prey items; nests on gently sloping sand banks within ca. 30 feet of waters edge.

Federal Status: | State Status: T | SGCN: Y

Endemic: Y | Global Rank: G3 | State Rank: S1

common garter snake *Thamnophis sirtalis*

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

Federal Status: | State Status: | SGCN: Y

Endemic: N | Global Rank: G5 | State Rank: S2

eastern box turtle *Terrapene carolina*

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

Federal Status: | State Status: | SGCN: Y

Endemic: N | Global Rank: G5 | State Rank: S3

keeled earless lizard *Holbrookia propinqua*

Terrestrial: Habitats include coastal dunes, barrier islands, and other sandy areas (Axtell 1983). Although it occurs well inland, this species is most abundant on coastal dunes, were it seeks shelter in the burrows of small mammals or crabs (Bartlett and Bartlett 1999).

Federal Status: | State Status: | SGCN: Y

Endemic: N | Global Rank: G4 | State Rank: S3

plateau spot-tailed earless lizard *Holbrookia lacerata*

Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).

Federal Status: | State Status: | SGCN: Y

Endemic: Y | Global Rank: GNR | State Rank: S2

prairie skink *Plestiodon septentrionalis*

The prairie skink can occur in any native grassland habitat across the Rolling Plains, Blackland Prairie, Post Oak Savanna and Pineywoods ecoregions.

Federal Status: | State Status: | SGCN: Y

Endemic: N | Global Rank: G5 | State Rank: S2

slender glass lizard *Ophisaurus attenuatus*

BEXAR COUNTY

REPTILES

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

Tamaulipan spot-tailed earless lizard *Holbrookia subcaudalis*

Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).

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

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 map turtle *Graptemys versa*

Aquatic: Primarily a river turtle but can also be found in reservoirs. Can be found in deep and shallow water with sufficient basking sites (emergent rocks and woody debris).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G4	State Rank: SU

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

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

PLANTS

awnless leastdaisy *Chaetopappa imberbis*

BEXAR COUNTY

PLANTS

In woodlands on loams of Carrizo sand (TEX-LL specimens Carr 23875, 12507). Flowering and fruiting during Mar - May.

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

big red sage *Salvia pentstemonoides*

Moist to seasonally wet, steep limestone outcrops on seeps within canyons or along creek banks; occasionally on clayey to silty soils of creek banks and terraces, in partial shade to full sun; basal leaves conspicuous for much of the year; flowering June-October

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

bigflower cornsalad *Valerianella stenocarpa*

Usually along creekbeds or in vernally moist grassy open areas (Carr 2015).

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

bracted twistflower *Streptanthus bracteatus*

Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer

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

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

Buckley tridens *Tridens buckleyanus*

Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov

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

Burridge greenthread *Thelesperma burridgeanum*

Sandy open areas; Annual; Flowering March-Nov; Fruiting March-June

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

Correll's false dragon-head *Physostegia correllii*

BEXAR COUNTY

PLANTS

Wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches; or seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande; or underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas; flowering May-September

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

Elmendorf's onion *Allium elmendorfii*

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

Glass Mountains coral-root *Hexalectris nitida*

Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept

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

gravelbar brickellbush *Brickellia dentata*

Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct

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

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

hairy sycamore-leaf snowbell *Styrax platanifolius ssp. stellatus*

Rare throughout range, in habitats similar to those of var. platanifolius - usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-Oct; Fruiting May-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

BEXAR COUNTY

PLANTS

Heller's marbleseed *Onosmodium helleri*

Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May

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

Hill Country wild-mercury *Argythamnia aphoroides*

Mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; Perennial; Flowering April-May with fruit persisting until midsummer

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

low spurge *Euphorbia peplidion*

Occurs in a variety of vernally-moist situations in a number of natural regions; Annual; Flowering Feb-April; Fruiting March-April

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

narrowleaf brickellbush *Brickellia eupatorioides var. gracillima*

Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

net-leaf bundleflower *Desmanthus reticulatus*

Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct

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

Osage Plains false foxglove *Agalinis densiflora*

Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils; Annual; Flowering Aug-Oct

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

Parks' jointweed *Polygonella parksii*

Mostly found on deep, loose, whitish sand blowouts (unstable, deep, xeric, sandhill barrens) in Post Oak Savanna landscapes over the Carrizo and Sparta formations; also occurs in early successional grasslands, along right-of-ways, and on mechanically disturbed areas; flowering June-late October or September-November

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

BEXAR COUNTY

PLANTS

Plateau loosestrife *Lythrum ovalifolium*

Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov

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

plateau milkvine *Matelea edwardsensis*

Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June

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

sandhill woolywhite *Hymenopappus carrizoanus*

Disturbed or open areas in grasslands and post oak woodlands on deep sands derived from the Carrizo Sand and similar Eocene formations; flowering April-June

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

South Texas rushpea *Caesalpinia phyllanthoides*

Tamaulipan thorn shrublands or grasslands on very shallow sandy to clayey soils over calcareous sandstone and caliche; flowering in spring, sometimes later in growing season, perhaps in response to rainfall

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

sycamore-leaf snowbell *Styrax platanifolius ssp. platanifolius*

Rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-May; Fruiting May-Aug.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

Texas almond *Prunus minutiflora*

Wide-ranging but scarce, in a variety of grassland and shrubland situations, mostly on calcareous soils underlain by limestone but occasionally in sandier neutral soils underlain by granite; Perennial; Flowering Feb-May and Oct; Fruiting Feb-Sept

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

BEXAR COUNTY

PLANTS

Texas amorpha *Amorpha roemeriana*

Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks; Perennial; Flowering May-June; Fruiting June-Oct

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

Texas fescue *Festuca versuta*

Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes; Perennial; Flowering/Fruiting April-June

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

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 seymeria *Seymeria texana*

Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons; Annual; Flowering May-Nov; Fruiting July-Nov

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

threeflower penstemon *Penstemon triflorus var. triflorus*

Occurs sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

tree dodder *Cuscuta exaltata*

Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus, and Diospyros species as well as Acacia berlandieri and other woody plants; Annual; Flowering May-Oct; Fruiting July-Oct

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

turnip-root scurfpea *Pediomelum cyphocalyx*

Grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S2S3

BEXAR COUNTY

PLANTS

woolly butterfly-weed *Oenothera cinerea ssp. parksii*

Flats and hills of red sand of Rio Grande Plains (Raven and Gregory 1972). April-Oct.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

Wright's milkvetch *Astragalus wrightii*

On sandy or gravelly soils; Flowering/fruiting: April and May

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

Federal and State Listed Species Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect Determination	State Status	Impact Determination	Explanation for Effect/Impact Determination	Presence/ Absence survey conducted?
Bexar	Amphibians	Cascade Caverns salamander	*Eurycea latitans*	Aquatic; springs, streams and caves with rocky or cobble beds.	Yes	There are streams which cross the project area. However there were no springs, streams, or caves with rocky or cobble beds within the project area, according to desktop survey and field survey conducted on January 16th, 2025.	-	N/A	T	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	No
Bexar	Amphibians	San Marcos Salamander	*Eurycea nana*	Aquatic; springs and associated water.	No	Based on desktop survey, there are streams which cross the action area but they are not associated with the spring (Spring Lake in San Marcos, TX), where this species is found (TPWD).	LT	No effect	T	No impact	The action area is outside of the species known range.	No
Bexar	Amphibians	Texas Blind Salamander	*Eurycea rathbuni*	Aquatic and subterranean; streams and caves.	No	Based on desktop survey, there are streams which cross the action area but they are not associated with the water-filled caves of the Edwards Aquifer near San Marcos, Texas (TPWD), where this species is found.	LE	No effect	E	No impact	The action area is outside of the species known range.	No
Bexar	Amphibians	Texas salamander	*Eurycea neotenes*	Aquatic; springs, streams and caves with rocky or cobble beds.	Yes	There are streams which cross the project area. However there were no springs, streams, or caves with rocky or cobble beds within the project area, according to desktop survey and field survey conducted on January 16, 2025.	-	N/A	T	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	No
Bexar	Arachnids	Cokendolpher Cave harvestman	*Texella cokendolpheri*	Small, eyeless harvestman; karst features in north and northwest Bexar County.	No	According to desktop survey, the action area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	LE	No effect	-	N/A	Species preferred habitat does not occur within the action area that could be affected.	No

Federal and State Listed Species Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect Determination	State Status	Impact Determination	Explanation for Effect/Impact Determination	Presence/ Absence survey conducted?
Bexar	Arachnids	Government Canyon Bat Cave meshweaver	*Cicurina vespera*	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	No	According to desktop survey, the action area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	LE	No effect	-	N/A	Species preferred habitat does not occur within the action area that could be affected.	No
Bexar	Arachnids	Government Canyon Bat Cave spider	*Tayshaneta (Neoleptoneta) microps*	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	No	According to desktop survey, the action area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	LE	No effect	-	N/A	Species preferred habitat does not occur within the action area that could be affected.	No
Bexar	Arachnids	Madla Cave meshweaver	*Cicurina madla*	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	No	According to desktop survey, the action area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	LE	No effect	-	N/A	Species preferred habitat does not occur within the action area that could be affected.	No
Bexar	Arachnids	Robber Baron Cave meshweaver	*Cicurina baronia*	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	No	According to desktop survey, the action area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	LE	No effect	-	N/A	Species preferred habitat does not occur within the action area that could be affected.	No
Bexar	Birds	Golden-cheeked Warbler	*Setophaga chrysoparia*	Ashe juniper in mixed stands with various oaks (Quercus spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.	No	According to desktop survey, there were no stands of Ashe juniper with various oaks observed within the action area during biological field survey conducted on January 16th, 2025. The various landscaped and maintained deciduous trees within the action area are unlikely to be suitable for nesting for the species. Species unlikely to forage in action area as there are no known nesting habitats near action area.	LE	No effect	E	No impact	Species preferred habitat does not occur within the action area that could be impacted or affected.	No

Federal and State Listed Species Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect Determination	State Status	Impact Determination	Explanation for Effect/Impact Determination	Presence/ Absence survey conducted?
Bexar	Birds	Interior Least Tern	*Sternula antillarum athalassos*	Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc.); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony	No	Based on desktop survey and field survey conducted on January 16th, 2025, there are no sand beaches, flats, bays, inlets, lagoons, islands, inland beaches, or man-made structures such as gravel mines within the project area. The water crossings within the project area do not have sand or gravel bars.	-	N/A	E	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Birds	Piping Plover	*Charadrius melodus*	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e. north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.	No	According to desktop survey, the project area is not located along the Gulf Coast. There are no beaches, sandflats, dunes, or algal flats within the project area, based on field survey conducted on January 16th, 2025.	LT	No effect	T	No impact	The action area is outside of the species known range.	No
Bexar	Birds	Red Knot	*Calidris canutus rufa*	Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes	No	According to desktop survey, the project area is not located in Galveston County or on Mustang Island. There are no salt marshes, tidal mudflats, beaches, tidal shores, tidal flats, or herbaceous wetlands within the action area, based on field survey conducted on January 16th, 2025.	LT	No effect	T	No impact	The action area is outside of the species known range.	No

Federal and State Listed Species Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect Determination	State Status	Impact Determination	Explanation for Effect/Impact Determination	Presence/ Absence survey conducted?
Bexar	Birds	White-faced Ibis	*Plegadis chihi*	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	No	According to desktop survey and field survey conducted on January 16th, 2025, there are no freshwater marshes, sloughs, irrigated rice fields, brackish or saltwater habitats, floating mats, bulrushes, reeds, or hog-wallow prairies within the project area. Aquatic reeds are located near the project area at the local Elmendorf Lake Park. However, no project activities would occur within the park. Species occurrence within the project area anticipated to be temporary and incidental.	-	N/A	T	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. No work is anticipated to occur in the waters or parks located within or near the project area as part of proposed project. Species is not expected to be impacted.	No
Bexar	Birds	Whooping Crane	*Grus americana*	Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	No	The project area is not located in Aransas, Calhoun, or Refugio counties. There are no small ponds, marshes, flooded grain fields, or plains within the action area, based on field survey conducted on January 16th, 2025.	LE	No effect	E	No impact	Species preferred habitat does not occur within the action area that could be impacted or affected.	No
Bexar	Birds	Wood Stork	*Mycteria americana*	Prefers to nest in large tracts of bald cypress (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	Yes	Based on field survey conducted on January 16th, 2025. there are no prairie ponds, flooded pastures or fields, shallow standing water, mudflats, wetlands, or tall snags within the project area. There are bald cypress trees next to the project area at the local Elmendorf Lake Park. However, no project activities would occur within the park. Species occurrence within the project area anticipated to be temporary and incidental.	-	N/A	T	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. No work is anticipated to occur in the waters or parks located within or near the project area as part of proposed project. Species is not expected to be impacted.	No
Bexar	Birds	Yellow-billed Cuckoo	*Coccyzus americanus*	In Texas, the populations of concern are found breeding in riparian areas in the Trans Pecos (know as part of the Western Distinct Population Segment). It is the Western DPS that is on the U.S. ESA threatened list and includes the Texas counties Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, and Presidio. Riparian woodlands below 6,000' in elevation consisting of cottonwoods and willows are prime habitat. This species is a long-distant migrant that summers in Texas, but winters mainly in South America. Breeding birds of the Trans Pecos populations typically arrive on their breeding grounds possibly in late April but the peak arrival time is in May. Threats to preferred habitat include hydrologic changes that don't promote the regeneration of cottonwoods and willows, plus livestock browsing and trampling of sapling trees in sensitive riparian areas.	No	Based on desktop survey, action area is not located in the Trans Pecos region of Texas. Action area is located outside of Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, and Presidio Counties.	T	No effect	-	N/A	The action area is outside of the species known range.	No
Bexar	Crustaceans	Peck's Cave amphipod	*Stygobromus pecki*	Lives underground in the Edwards Aquifer; collected at Comal Springs and Hueco Springs	No	There were no springs observed during the field survey conducted on January 16th, 2025. The action area is not located near the Comal Springs or Hueco Springs, based on desktop survey.	LE	No effect	E	No impact	Species preferred habitat does not occur within the action area that could be impacted or affected.	No

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County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect Determination	State Status	Impact Determination	Explanation for Effect/Impact Determination	Presence/ Absence survey conducted?
Bexar	Fish	fountain darter	*Etheostoma fonticola*	Known only from the spring-fed San Marcos and Comal rivers in dense beds of aquatic plants growing close to bottom; may be found in slow- and fast-flowing habitats.	No	The action area is not near or along the San Marcos or Comal rivers, based on desktop survey.	LE	No effect	E	No impact	The action area is outside of the species known range.	No
Bexar	Fish	toothless blindcat	*Trogloglanis pattersoni*	Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.	No	There were no artesian wells observed within the action area during the field surveys conducted on January 16th, 2025. There is an EO of the species about a mile from the project corridor. Project activities are not anticipated to effect artesian wells that are that far from the project corridor.	PE	N/A	T	No impact	Species preferred habitat does not occur within the action area that could be impacted or affected.	No
Bexar	Fish	widemouth blindcat	*Satan eurystomus*	Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.	No	There were no artesian wells observed within the action area during the field surveys conducted on January 16th, 2025. There is an EO of the species about a mile from the project corridor. Project activities are not anticipated to effect artesian wells that are that far from the project corridor.	PE	N/A	T	No impact	Species preferred habitat does not occur within the action area that could be impacted or affected.	No
Bexar	Insects	a ground beetle	*Rhadine exilis*	Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County	No	According to desktop survey, the action area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project area that could be affected.	No
Bexar	Insects	a ground beetle	*Rhadine infernalis*	Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County	No	According to desktop survey, the action area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project area that could be affected.	No

Federal and State Listed Species Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect Determination	State Status	Impact Determination	Explanation for Effect/Impact Determination	Presence/ Absence survey conducted?
Bexar	Insects	Comal Springs dryopid beetle	*Stygoparnus comalensis*	Dryopids usually cling to objects in a stream; dryopids are sometimes found crawling on stream bottoms or along shores; adults may leave the stream and fly about, especially at night; most dryopid larvae are vermiform and live in soil or decaying wood	Yes	There are streams which cross the action area, based on desktop survey and field survey conducted on January 16th, 2025.	LE	No effect	E	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	No
Bexar	Insects	Comal Springs riffle beetle	*Heterelmis comalensis*	Comal and San Marcos Springs	No	The action area is not near or along the San Marcos or Comal Springs, based on desktop survey.	LE	No effect	E	No impact	Species preferred habitat does not occur within the project area that could be impacted or affected.	No
Bexar	Insects	Helotes mold beetle	*Batrisodes venyivi*	Small, eyeless mold beetle; karst features in northwestern Bexar County and northeastern Medina County	No	According to desktop survey, the action area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project area that could be affected.	No
Bexar	Insects	Monarch Butterfly	*Danaus plexippus*	Found statewide. Adults are found in a variety of habitats.	Yes	Although there are roadside grassy areas within the action area, they are minimal, and frequently disturbed. No abundant nectar flowering plants or milkweed species (host plants) were observed within the action area during the field survey conducted on January 16th, 2025. Action area is urbanized with mostly paved areas. Any occurrence of the species within the action area is anticipated to be temporary and incidental.	PT	No effect	-	N/A	Species occurrence within the action area is anticipated to be temporary and incidental, since no host plants were observed. Species is not anticipated to be effected.	No
Bexar	Mammals	black bear	*Ursus americanus*	Generalist. Historically found throughout Texas. In Chisos, prefers higher elevations where pinyon-oaks predominate; also occasionally sighted in desert scrub of Trans-Pecos (Black Gap Wildlife Management Area) and Edwards Plateau in juniper-oak habitat. For ssp. luteolus, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Bottomland hardwoods and large tracts of inaccessible forested areas.	No	There are no juniper-oak forests, pinyon-oaks in higher elevations, bottomland hardwoods, floodplain forests, upland hardwoods, marshes, or large tracts of inaccessible forested areas within the project area, based on desktop survey and field survey conducted on January 16th, 2025.	-	N/A	T	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No

Federal and State Listed Species Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect Determination	State Status	Impact Determination	Explanation for Effect/Impact Determination	Presence/ Absence survey conducted?
Bexar	Mammals	tricolored bat	*Perimyotis subflavus*	Forest, woodland and riparian areas are important. Caves are very important to this species.	No	Based on desktop survey and field survey conducted on January 16th, 2025, there are no forests, woodlands, or caves in the action area. The local Elmendorf Lake Park (adjacent to the project corridor) has some riparian vegetation. However, no project activities would occur within the park. Riparian vegetation would not be effected by the project. Any occurrence of species within the project area is anticipated to be temporary and incidental.	PE	No effect	-	N/A	Species use of habitat in action area is anticipated to be temporary and incidental. No work is anticipated to occur in the waters or riparian areas located within the action area as part of proposed project. Species is not expected to be effected.	No
Bexar	Mammals	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	Yes	There are no woodlands or canyons within the project area, based on desktop survey and field survey conducted on January 16th, 2025. There are water crossings within the project area which the species may find suitable. However, the riparian corridors outside of the project area may be more attractive to the species. Species use of water crossings within project area is anticipated to be temporary and incidental.	-	N/A	T	No impact	No work is anticipated to occur in the water crossings located within the project area as part of proposed project. Species use of habitat in project area is anticipated to be temporary and incidental. Species is not expected to be impacted.	No
Bexar	Mollusks	False Spike	*Fusconaia mitchelli*	Occurs in small streams to medium-size rivers in habitats such as riffles and runs with flowing water. Is often found in stable substrates of sand, gravel, and cobble (Howells 2010; Randklev et al. 2012; Sowards et al. 2013; Tsakiris and Randklev 2016). [Mussels of Texas 2019]	Yes	There are small to medium-size streams which cross the action area, based on desktop survey and field survey conducted on January 16th, 2025.	E	No effect	E	No impact	No work is anticipated to occur in water crossings located within the action area as part of proposed project.	No
Bexar	Plants	bracted twistflower	*Streptanthus bracteatus*	Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer.	No	There are shallow well-drained gravelly clays and clay loams within action area, based on USDA soils data. However, there are no oak juniper woodlands, canyon bottoms, or steep to moderate slopes within the action area, based on desktop survey and field survey conducted on January 16th, 2025.	T	No effect	-	N/A	Species preferred habitat does not occur within the action area that could be impacted.	No
Bexar	Plants	Texas wild-rice	*Zizania texana*	Spring-fed river, in clear, cool, swift water mostly less than 1 m deep, with coarse sandy soils rather finer clays; flowering year-round, peaking March-June.	No	There are no spring-fed rivers with coarse sandy soils which cross the action area, based on desktop survey and field survey conducted on January 16th, 2025.	LE	No effect	E	No impact	Species preferred habitat does not occur within the action area that could be affected or impacted. No work is anticipated to occur in water crossings located within the action area as part of proposed project.	No

Federal and State Listed Species Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect Determination	State Status	Impact Determination	Explanation for Effect/Impact Determination	Presence/ Absence survey conducted?
Bexar	Reptiles	American alligator	*Alligator mississippiensis*	Aquatic: Coastal marshes; inland natural rivers, swamps and marshes; manmade impoundments.	Yes	There are inland water crossings and manmade lakes in the action area, based on desktop survey and field survey conducted on January 16th, 2025. However, no work is anticipated in the waters.	SAT	No effect	-	N/A	No work is anticipated to occur in waters located within the action area as part of proposed project.	No
Bexar	Reptiles	Cagle's map turtle	*Graptemys caglei*	Aquatic: shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; gravel bar riffles and transition areas between riffles and pools especially important in providing insect prey items; nests on gently sloping sand banks within ca. 30 feet of waters edge.	Yes	Based on desktop survey and field survey conducted on January 16, 2025, there are stream crossings within the project area that have shallow water with flow and soils suitable for the species.	-	N/A	T	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	No
Bexar	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.	No	There are grass, cacti, and scrubby trees within the project area but they are not part of open habitats with sparse vegetation. There were no burrows observed during the field survey conducted on January 16th, 2025.	-	N/A	T	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	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.	Yes	There are no open scrub woods, arid brush, lomas, or sandy well-drained soils within the project area, based on desktop survey and field survey conducted on January 16th, 2025. There were no burrows observed. Grass-cacti associations in project area are rare and in landscaped areas. Use of the landscaped habitat within the project area by species is anticipated to be temporary and incidental.	-	N/A	T	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. Species is not expected to be impacted.	No

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Amphibians	eastern tiger salamander	*Ambystoma tigrinum*	Terrestrial adults generally occur under cover objects or in burrows surrounding a variety of lentic freshwater habitats, such as ponds, lakes, bottomland wetlands, or upland ephemeral pools. The specific terrestrial habitats are also varied and the occurrence of this species seems to be more closely associated with sandy, loamy or other soils which have easy burrowing properties, rather than any particular ecological system type. Requires fishless breeding pools for successful reproduction.	N	Freshwater habitats, such as ponds, lakes, bottomland wetlands, and upland ephemeral pools were not observed within the project area during the field survey conducted on January 16th, 2025. Elmendorf Lake park is outside of project area where no project activities are anticipated.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Amphibians	Strecker's chorus frog	*Pseudacris streckeri*	Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.	N	During a field survey on January 16th, 2025, wooded floodplains and flats, prairies, cultivated fields, and marshes were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Amphibians	Valdina Farms sinkhole salamander	*Eurycea troglodytes*	Aquatic; springs, streams and caves with rocky or cobble beds.	Y	There are streams which cross the project area. However there were no springs, streams, or caves with rocky or cobble beds within the project area, according to desktop survey and field survey conducted on January 16th, 2025.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	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.	Y	There are streams which cross the project area, which may be suitable for the species, based on desktop survey and field survey conducted on January 16, 2025. There are no forests, sand dunes, or grasslands within the project area. But, grassy areas and hardwoods within project area may be suitable.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Birds	Bank Swallow	*Riparia riparia*	Bank Swallows live in low areas along rivers, streams, ocean coasts, and reservoirs. Their territories usually include vertical cliffs or banks where they nest in colonies of 10 to 2,000 nests. Though in the past Bank Swallows were most commonly found around natural bluffs or eroding streamside banks, they now often nest in human-made sites, such as sand and gravel quarries or road cuts. They forage in open areas and avoid places with tree cover.	Y	Vertical cliffs, banks, bluffs, quarries, open areas, and road cuts do not occur within the project area, based on desktop survey and field survey conducted on January 16, 2025. There are stream crossings and bridges within the project area which may be suitable for the species. However, there is no work anticipated at these crossings and bridges.	No impact	No work is anticipated to occur in water crossings and bridges located within the project area as part of proposed project.	N
Bexar	Birds	Black-Capped Vireo	*Vireo atricapilla*	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer	N	During a field survey on January 16th, 2025, oak-juniper woodlands was not observed within the project area. Project area is mostly paved with minimal grassy areas and a few trees. These habitats would not be suitable as they don't have distinct structures or broad-leaved shrubs preferred by the species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	Brewer's Blackbird	*Euphagus cyanocephalus*	Shrubby and bushy areas (especially near water), riparian woodland, aspen parklands, cultivated lands, marshes, and around human habitation; in migration and winter also in pastures and fields (AOU 1983).	N	During a field survey on January 16th, 2025, riparian woodland, aspen parklands, cultivated lands, marshes, pastures and fields were not observed within the project area. There are some shrubby areas near water outside of the project area. They would not be impacted by project.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Birds	Cactus Wren	*Campylorhynchus brunneicapillus*	Desert (especially with cholla cactus or yucca), mesquite, arid scrub, coastal sage scrub, and in trees in towns in arid regions (Tropical to Subtropical zones) (AOU 1983). Nests in OPUNTIA cactus, or in twiggy, thorny, trees and shrubs, sometimes in buildings. Nest may be relined and used as a winter roost.	N	Based on desktop survey and field survey conducted on January 16, 2025, the project area is not located in desert or arid regions. There were no *Opuntia* cacti, or mesquite observed within the project area. The rare instances of landscaped yucca are unlikely to be suitable for the species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	Chestnut-Collared Longspur	*Calcarius ornatus*	Occurs in open shortgrass settings especially in patches with some bare ground. Also occurs in grain sorghum fields and Conservation Reserve Program (CRP) lands.	N	During a field survey on January 16th, 2025, open shortgrass settings with some bare ground was not observed within the project area. There are not sorghum fields or CRP lands within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	Common Nighthawk	*Chordeiles minor*	Common Nighthawks nest in both rural and urban habitats including coastal sand dunes and beaches, logged forest, recently burned forest, woodland clearings, prairies, plains, sagebrush, grasslands, open forests, and rock outcrops. They also nest on flat gravel rooftops, though less often as gravel roofs are being replaced by smooth, rubberized roofs that provide an unsuitable surface.	N	During a field survey on January 16th, 2025, coastal sand dunes and beaches, logged forest, woodland clearings, prairies, plains, sagebrush, grasslands, open forests, and rock outcrops were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

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County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Birds	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. "Nonbreeding: seacoasts, bays, estuaries, lakes, rivers, marshes, ponds and irrigated fields (AOU 1983); mudflats. Nests in fresh-water marshes, shores of inland lakes, in areas of prairie and steppe. Nest is made of dead marsh plants; it is often a floating	N	Based on desktop survey and field survey conducted on January 16, 2025, seacoasts, bays, estuaries, lakes, rivers, marshes, mudflats, and fresh-water marshes do not occur within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	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.	N	During a field survey on January 16th, 2025, shortgrass settings and agricultural lands were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	Least Tern	*Sternula antillarum*	Sand beaches, flats, bays, inlets, lagoons, islands, river sandbars and flat gravel rooftops in urban areas.	N	During a field survey on January 16th, 2025, sand beaches, flats, bays, inlets, lagoons, islands, river sandbars and flat gravel rooftops in urban areas were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

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Bexar	Birds	Loggerhead Strike	*Lanius ludovicianus*	Loggerhead Shrikes inhabit open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. They frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries. Loggerhead Shrikes are often seen along mowed roadsides with access to fence lines and utility poles.	Y	Agricultural fields, pastures, orchards, desert scrublands, savannas, prairies, golf courses and cemeteries were not observed within the project area during a January 16th, 2025 field survey. However, mowed roadsides with access to fence lines and utility poles were observed. There are also some riparian areas near the project at Elmendorf Lake Park.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N
Bexar	Birds	Mottled Duck	*Anas fulvigula*	Estuaries, ponds, lakes, secondary bays.	N	During a field survey on January 16th, 2025, estuaries, ponds, lakes and secondary bays were not observed within the project area. There is a small lake at Elmendorf Lake Park near project area but there would be no project activities at the park.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	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. "Semi-arid plains, grasslands, plateaus. Favors areas of very short grass, even bare soil. Typically far from water. Nests mostly in short-grass prairie, including overgrazed pasture and very arid plains. In some areas, nests mainly on the rather barren open ground found in large prairie-dog towns. Winter habitats include desert flats, plowed fields." - National Audubon Society	N	During a field survey on January 16th, 2025, semi-arid plains, grasslands, plateaus, desert flats, and plowed fields were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

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Bexar	Birds	Northern Bobwhite	*Colinus virginianus*	Inhabits a wide variety of vegetation types, particularly early successional stages. Occurs in croplands, grasslands, pastures, fallow fields, grass-brush rangelands, open pinelands, open mixed pine-hardwood forests, and habitat mosaics (Brennan 1999).	N	During a field survey on January 16th, 2025, croplands, grasslands, pastures, fallow fields, grass-rush rangelands, open pinelands, and open-mixed pine-hardwood forests were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	Pyrrhuloxia	*Cardinalis sinuatus*	Pyrrhuloxias live in upland deserts, mesquite savannas, riparian (streamside) woodlands, desert scrublands, farm fields with hedgerows, and residential areas with nearby mesquite. When not breeding, some Pyrrhuloxias wander into urban habitats, mesquite-hackberry habitats, and riparian habitats with Arizona sycamore and cottonwood.	Y	During a field survey on January 16th, 2025, urban habitats were observed within and adjacent to the project area.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N
Bexar	Birds	Sanderling	*Calidris alba*	Nonbreeding: primarily sandy beaches, less frequently on mud flats and shores of lakes or rivers (AOU 1983) also on exposed reefs (Pratt et al. 1987). Sleeps/loafs on upper beach or on salt pond dike.	N	Based on desktop survey and field survey conducted on January 16, 2025, sandy beaches, mud flats, lake and river shores, salt pond dikes, and exposed reefs do not occur observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	Snowy Plover	*Charadrius nivosus*	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. An optimal site characteristic would be large in size. The size of populations appear to be roughly proportional to the total area of suitable habitat used. Formerly an uncommon breeder in the Panhandle; potential migrant; winter along coast.	N	During a field survey on January 16th, 2025, algal flats were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

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Bexar	Birds	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. "Semi-arid plains, grasslands, plateaus. Favors areas of very short grass, even bare soil. Typically far from water. Nests mostly in short-grass prairie, including overgrazed pasture and very arid plains. In some areas, nests mainly on the rather barren open ground found in large prairie-dog towns. Winter habitats include desert flats, plowed fields." - National Audubon Society	N	During a field survey on January 16th, 2025, semi-arid plains, grasslands, plateaus, short-grass prairie, and prairie-dog towns were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	Willet	*Tringa semipalmata*	Marshes, tidal mudflats, beaches, lake margins, mangroves, tidal channels, river mouths, coastal lagoons, sandy or rocky shores, and, less frequently, open grassland (AOU 1983, Stiles and Skutch 1989).	N	Based on desktop survey and field survey conducted on January 16, 2025, marshes, tidal mudflats, beaches, lake margins, mangroves, tidal channels, river mouths, coastal lagoons, sandy or rocky shores, and open grassland do not occur within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Birds	Wilson's Warbler	*Cardellina pusilla*	Wilson's warblers key in on forests and scrubby areas along streams to fatten up during migration. During the nonbreeding season they use many types of habitats from lowland thickets near streams to high-elevation cloud forests in Mexico and Central America.	N	During a field survey on August 28, 2024, forests along streams, lowland thickets, and cloud forests were not observed within the project area. There are some shrubby/scrubby areas near water outside of the project area. They would not be impacted by project.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

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Bexar	Crustaceans	Cascade Cave amphipod	*Stygobromus dejectus*	Subaquatic crustacean; subterranean obligate; in pools	N	According to desktop survey, the project area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Crustaceans	Ezell's Cave amphipod	*Stygobromus flagellatus*	Known only from artesian wells	N	According to desktop survey, the project area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Fish	Guadalupe bass	*Micropterus treculii*	Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.	Y	The waters crossings the project area are part of the San Antonio basin, based on desktop survey and field survey conducted on January 16, 2025. The waters are slow moving and may be preferred by the species.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Fish	river darter	*Percina shumardi*	In Texas limited to eastern streams including Red River southward to the Neches River, and a disjunct population in the Guadalupe and San Antonio river systems east of the Balcones Escarpment. Confined to large rivers and lower parts of major tributaries; usually found in deep chutes and riffles where current is swift and bottom composed of coarse gravel or rock.	N	The waters crossings the project area are part of the San Antonio river systems, based on desktop survey and field survey conducted on January 16, 2025. However, these waters do not have swift current and the bottom is not composed of gravel or rock.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

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Bexar	Fish	Texas shiner	*Notropis amabilis*	In Texas, it is found primarily in Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat includes rocky or sandy runs, as well as pools.	Y	There are stream which cross the project area that may be suitable for the species. There is an EO of the species about a mile from the project corridor.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Insects	American bumblebee	*Bombus pensylvanicus*	"A relatively large bee, the fuzzy black-and-yellow American bumble bee prefers the habitats offered by farmlands and open fields, where they nest below the grass or underground. " - USFWS	N	Based on desktop survey and field survey conducted on January 16, 2025, there are no open fields or grasslands within the project area. There are very minimal and frequently disturbed grassy areas within the project area, which would not be suitable for the species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	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 "Habitat is subtropical mesquite scrub with a lot of Manfreda, on sandy or clay soils, either dry or moist. Apparently occasionally pine woodland." - NatureServe	Y	During a field survey on January 16th, 2025, no mesquite were observed within the project area. However, there may be rare occurrences of Manfreda in the project area due to landscaping. Project does have clay soils according to USDA soils data.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N
Bexar	Insects	No accepted common name	*Nectopsyche texana*	Riparian, Riverine	Y	There are streams which cross the project area that would provide riverine habitat.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Insects	No accepted common name	*Batrisodes shadeae*	This species was recently described from a single cave in Bexar Co., Texas (Chandler et al., 2009).	N	According to desktop survey, the project area is located in Karst Zone 4b (Veni et al., 2024; USFWS, 2024). Karst Zone 4b of Bexar County only includes areas which do not contain karst invertebrate species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

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Bexar	Mammals	big free-tailed bat	*Nyctinomops macrotis*	Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore	Y	During a field visit on January 16th, 2025, there are buildings outside of the project area. No signs of bats were observed. Any occurrence of species within the project area is anticipated to be temporary and incidental.	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. Species is not anticipated to be impacted.	N
Bexar	Mammals	black-tailed prairie dog	*Cynomys ludovicianus*	Dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups	N	During a field survey on January 16th, 2025, dry , flat, short grasslands with sparse vegetation were not observed within the project area. Burrows and dens were also not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	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.	Y	During a field survey on January 16th, 2025, caves, rock crevices, old buildings, and carports were not observed within the project area. Bridges and culverts occur within the project area. No signs of bats were observed. Any occurrence of species within the project area is anticipated to be temporary and incidental.	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. Species is not anticipated to be impacted.	N
Bexar	Mammals	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.	Y	During a field survey on January 16th, 2025, fence rows were observed near the project area. There is also an EO of the species which crosses the project area.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N

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Bexar	Mammals	ghost-faced bat	*Mormoops megalophylla*	Winter roosts are in large limestone caves. Buildings and rock crevasses provide roosts, as well.	N	During a field survey on January 16th, 2025, large limestone caves, and rock crevasses were not observed within the project area. There are buildings outside of the project area. No signs of bats were observed. Any occurrence of species within the project area is anticipated to be temporary and incidental.	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. Species is not anticipated to be impacted.	N
Bexar	Mammals	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.	Y	During a field survey on January 16th, 2025, forests, lowland desert, large open flyways were not observed within the project area. There are streams which cross the project area. No signs of bats were observed. Any occurrence of species within the project area is anticipated to be temporary and incidental.	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. Species is not anticipated to be impacted.	N
Bexar	Mammals	mountain lion	*Puma concolor*	Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.	N	According to USGS topographic maps, rugged mountains and riparian areas do not occur within the project area. Riparian areas near the project are manmade or maintained and would not be suitable. Additionally, the proposed project is located in highly urbanized setting with mostly paved areas.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Mammals	plains spotted skunk	*Spilogale interrupta*	Generalist; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie	Y	During a field survey on January 16th, 2025, fence rows were observed near the project area. There is also an EO of the species which crosses the project area.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N

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Bexar	Mollusks	Lilliput	*Toxolasma parvum*	Reported from small streams, where it may penetrate into the headwaters, to large rivers, oxbows, sloughs, lakes, ponds, canals, borrow pits, and reservoirs. Primarily occurs in still to slow currents in mud and sand substrates (Coker et al. 1921; Read 1954; Neck and Metcalf 1988; Williams et al. 2008; Watters et al. 2009).	Y	There are small streams which cross the project area that may be suitable for the species.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Mollusks	Mapleleaf	*Quadrula quadrula*	Reported from streams to rivers, lakes, and reservoirs. In riverine habitats, it may be found in main-channel habitats such as riffles or runs in sand, gravel, and cobble substrates with moderate to swift currents. May also be found in nearshore habitats such as banks and backwaters to include pools in sand or mud substrates with little to no flow. (Williams et al. 2008; Howells 2016; Haag and Cicerello 2016).	Y	There are small streams which cross the project area that may be suitable for the species.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Mollusks	mimic cavesnail	*Phreatodrobia imitata*	Subaquatic; only known from two wells penetrating the Edwards Aquifer	N	According to USGS topographic maps, the project area intersects the Edwards Aquifer. However, the proposed project is restricted to existing ROW and occurs in areas of low urban intensity which consists of mostly paved surfaces.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Mollusks	Pimpleback	*Cyclonaias pustulosa*	Occurs in small streams to large rivers in habitats including riffles and runs with flowing water, also found in nearshore habitats such as banks and backwaters or pools. Can occur in reservoirs but varies based by population. Is often found in substrates comprising of sand, gravel, and cobble but also mud and silt (Howells et al. 1996; Williams et al. 2008; Watters et al. 2009).	Y	There are small streams which cross the project area that may be suitable for the species.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Mollusks	Pistolgrip	*Tritogonia verrucosa*	Reported from streams to rivers, lakes, and reservoirs, but considered less tolerant of impoundment (Haag and Cicerello 2016). Can occur in a variety of habitat types but most often found in main channel habitats such as riffles and runs with moderate current and sand, gravel, or cobble substrates (Howells et al. 1996; Williams et al. 2008).	Y	There are small streams which cross the project area that may be suitable for the species.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N

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Bexar	Mollusks	Tampico Pearlymussel	*Cyrtonaias tampicoensis*	Reported from streams to rivers, reservoirs, and canals. In riverine habitats often found in nearshore habitats such as banks and backwaters, to include pools and oxbows, in mud or sand or among cobble and boulders with still to moderate currents (Howells et al. 1996).	Y	There are small streams which cross the project area that may be suitable for the species.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Mollusks	Tapered Pondhorn	*Uniomerus declivis*	It likely occurs in streams, rivers, oxbows, marshes, swamps, lakes, canals, ponds, and reservoirs in still to moderate currents in mud, sand, or gravel substrates. Also probably occurs in woody debris such as logjams and exposed roots of riparian trees (Williams et al. 2008).	Y	There are small streams which cross the project area that may be suitable for the species.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Plants	awnless leastdaisy	*Chaetopappa imberbis*	In woodlands on lomas of Carrizo sand (TEX-LL specimens Carr 23875, 12507). Flowering and fruiting during Mar - May.	N	During a field survey on January 16th, 2025, woodlands were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	big red sage	*Salvia pentstemonoides*	Moist to seasonally wet, steep limestone outcrops on seeps within canyons or along creek banks; occasionally on clayey to silty soils of creek banks and terraces, in partial shade to full sun; basal leaves conspicuous for much of the year; flowering June-October	Y	During a field survey on January 16th, 2025, steep limestone outcrops, canyons, and terraces were not observed. There are banks within the project area.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Plants	bigflower cornsalad	*Valerianella stenocarpa*	Usually along creekbeds or in vernally moist grassy open areas (Carr 2015).	Y	Based on desktop survey, creekbeds and moist grassy areas may occur under bridges at the stream crossings.	No impact	No work is anticipated to occur in water crossings or under bridges located within the project area as part of proposed project.	N
Bexar	Plants	bristle nailwort	*Paronychia setacea*	Flowering vascular plant endemic to eastern southcentral Texas, occurring in sandy soils "Limestone barrens, gravelly or sandy slopes and grasslands." - (Lady Bird Johnson Wildflower Center)	N	During a field survey on January 16th, 2025, limestone barrens, sandy slopes and grasslands were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Buckley tridens	*Tridens buckleyanus*	Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov	N	During a field survey on January 16th, 2025, juniper-oak woodlands on rocky limestone slopes were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Burridge greenthread	*Thelesperma burridgeanum*	Sandy open areas; Annual; Flowering March-Nov; Fruiting March-June	N	During a field survey on January 16th, 2025, sandy open areas were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Plants	Correll's false dragon-head	*Physostegia correllii*	Wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches; or seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande; or underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas; flowering May-September	Y	Based on desktop survey and field survey conducted on January 16, 2025, silty clay soils occur on streamsides within the project area. There is an EO of the species which cross the project area.	No impact	No work is anticipated to occur in water crossings or along streamsides located within the project area as part of proposed project.	N
Bexar	Plants	Elmendorf's onion	*Allium elmendorfii*	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	N	During a field survey on January 16th, 2025, grassland openings in oak woodlands, live oak woodlands, and post oak-black hickory-live oak woodlands were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Glass Mountains coral-root	*Hexalectris nitida*	Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept	N	According to USGS topographic maps, the project area occurs along the southeastern boundary of the Edwards plateau. During a field survey on January 16th, 2025, juniper woodlands and canyons were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	gravelbar brickellbush	*Brickellia dentata*	Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct	N	During a field survey on January 16th, 2025, streams were observed within the project area. However, based on USDA soils data, they would not have gravelly alluvial beds.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Greenman's bluet	*Houstonia parviflora*	Grass pastures. Feb- Apr. (Correll and Johnston 1970).	N	During a field survey on January 16th, 2025, grass pastures were not observed. Grassy areas within the project area are frequently disturbed and minimal.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Plants	hairy sycamore-leaf snowbell	*Styrax platanifolius ssp. stellatus*	Rare throughout range, in habitats similar to those of var. platanifolius - usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-Oct; Fruiting May-Sept	N	During a field survey on January 16th, 2025, oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams were not observed. Stream crossings within project area are in a urban setting with no oak-juniper woodlands nearby.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Heller's marbleseed	*Onosmodium helleri*	Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May	N	During a field survey on January 16th, 2025, oak-juniper woodlands on rocky limestone slopes and canyons were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Hill Country wild-mercury	*Argythamnia aphoroides*	Mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; Perennial; Flowering April-May with fruit persisting until midsummer	N	During a field survey on January 16th, 2025, bluestem-grama grasslands, live oak woodlands, oak-juniper woodlands and limestone slopes were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	low spurge	*Euphorbia peplidion*	Occurs in a variety of vernally-moist situations in a number of natural regions; Annual; Flowering Feb-April; Fruiting March-April	Y	Based on desktop survey, moist grassy areas may occur under bridges at the stream crossings.	No impact	No work is anticipated to occur in water crossings or under bridges located within the project area as part of proposed project.	N
Bexar	Plants	narrowleaf brickellbush	*Brickellia eupatorioides var. gracillima*	Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes; Perennial; Flowering/Fruiting April-Nov	N	During a field survey on January 16th, 2025, streams were observed within the project area. However, based on USDA soils data, they would not have gravelly alluvial along their banks.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	net-leaf bundleflower	*Desmanthus reticulatus*	Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct	N	According to USGS topographic maps, the project area occurs within the coastal plain of central and south Texas. However, during a site visit on January 16th, 2025, clay prairies were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Plants	Osage Plains false foxglove	*Agalinis densiflora*	Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils; Annual; Flowering Aug-Oct	Y	According to USDA soils data, calcareous and gravelly soils do occur within the project area in some areas.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N
Bexar	Plants	Parks' jointweed	*Polygonella parksii*	Mostly found on deep, loose, whitish sand blowouts (unstable, deep, xeric, sandhill barrens) in Post Oak Savanna landscapes over the Carrizo and Sparta formations; also occurs in early successional grasslands, along right-of-ways, and on mechanically disturbed areas; flowering June-late October or September-November	N	According to USDA soils data, unstable, deep, xeric, sandhill barrens do not occur within the project area. During a field survey on January 16th, 2025, Post Oak Savanna was not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Plateau loosestrife	*Lythrum ovalifolium*	Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov	Y	According to USGS topographic maps, the project area occurs along the southeastern boundary of the Edwards plateau. During a field survey on January 16th, 2025, streams and stream banks do occur within the project area.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N
Bexar	Plants	plateau milkvine	*Matelea edwardsensis*	Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June	N	During a field survey on January 16th, 2025, juniper-oak and oak-juniper woodlands were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	sandhill woolywhite	*Hymenopappus carrizoanus*	Disturbed or open areas in grasslands and post oak woodlands on deep sands derived from the Carrizo Sand and similar Eocene formations; flowering April-June	N	During a field survey on January 16th, 2025, grasslands and post oak woodlands on deep sands were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Siler's huaco	*Manfreda sileri*	Rare in a variety of grasslands and shrublands on dry sites; Perennial; Flowering April-July; Fruiting June-July	N	During a field survey on January 16th, 2025, grasslands and shrublands were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	South Texas rushpea	*Caesalpinia phyllanthoides*	Tamaulipan thorn shrublands or grasslands on very shallow sandy to clayey soils over calcareous sandstone and caliche; flowering in spring, sometimes later in growing season, perhaps in response to rainfall	N	During a field survey on January 16th, 2025, Tamaulipan thorn shrublands or grasslands were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Plants	sycamore-leaf snowbell	*Styrax platanifolius ssp. platanifolius*	Rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-May; Fruiting May-Aug.	N	During a field survey on January 16th, 2025, oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Texas almond	*Prunus minutiflora*	Wide-ranging but scarce, in a variety of grassland and shrubland situations, mostly on calcareous soils underlain by limestone but occasionally in sandier neutral soils underlain by granite; Perennial; Flowering Feb-May and Oct; Fruiting Feb-Sept	N	During a field survey on January 16th, 2025, grassland and shrubland habitats were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Texas amorpha	*Amorpha roemeriana*	Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks; Perennial; Flowering May-June; Fruiting June-Oct	N	During a field survey on January 16th, 2025, juniper-oak woodlands/shrublands, on rocky limestone slopes, were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Texas fescue	*Festuca versuta*	Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes; Perennial; Flowering/Fruiting April-June	N	During a field survey on January 16th, 2025, mesic woodlands, stream terraces, and canyon slopes were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	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	N	USDA soils data does not show any well-drained sandy soils within the project area. During a field survey on January 16th, 2025, deep sand, plains, sand hills, grasslands, and oak woods were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Texas seymeria	*Seymeria texana*	Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons; Annual; Flowering May-Nov; Fruiting July-Nov	N	According to USGS topographic maps, canyons are not present within the project area. During a field survey on January 16th, 2025, grassy openings in juniper-oak woodlands on dry rocky slopes and rock outcrops were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

SGCN Analysis Table

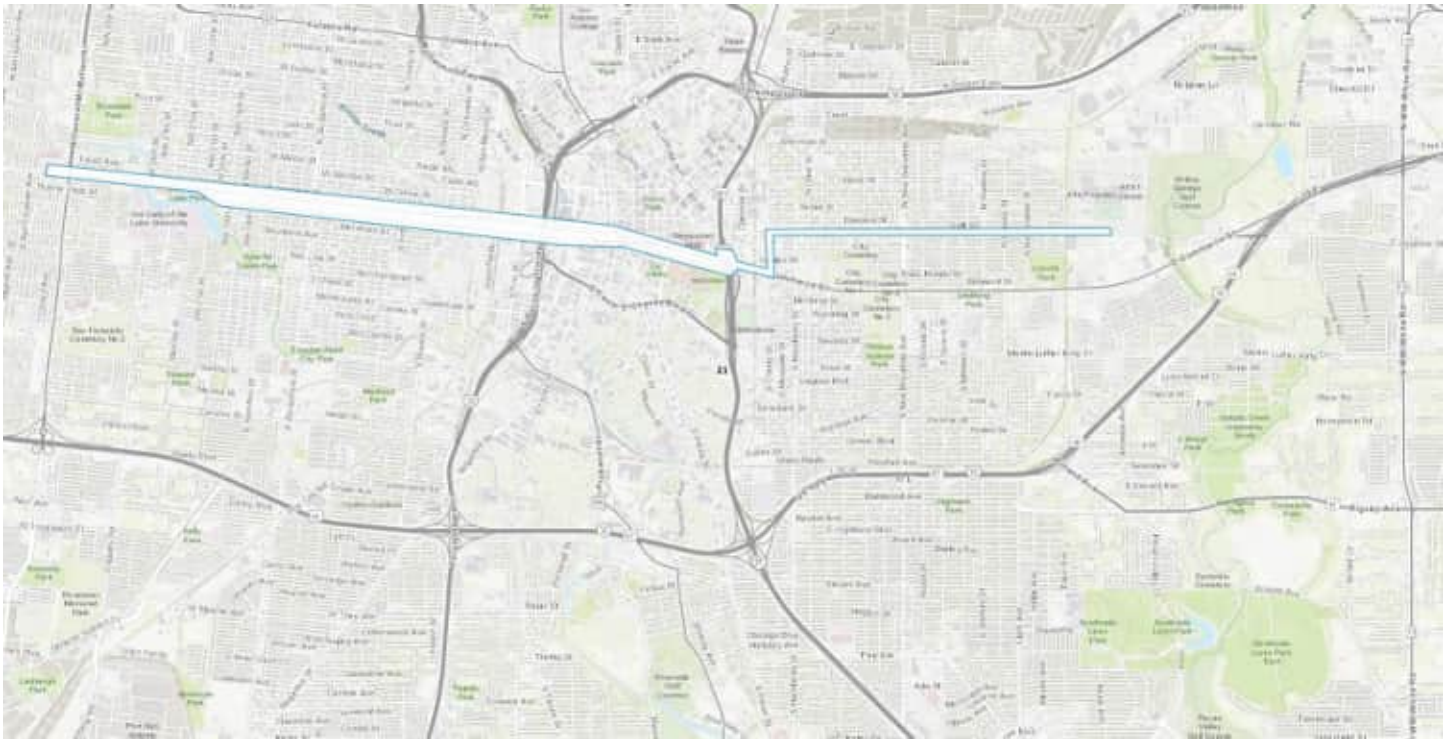
County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Plants	threeflower penstemon	*Penstemon triflorus ssp. triflorus*	Occurs sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands (Carr 2015).	N	During a field survey on January 16th, 2025, rocky outcrops and grasslands associated with juniper-oak woodlands were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	tree dodder	*Cuscuta exaltata*	Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus, and Diospyros species as well as Acacia berlandieri and other woody plants; Annual; Flowering May-Oct; Fruiting July-Oct	Y	During a field survey on January 16th, 2025, a few trees and woody plants that may be susceptible to the species were observed within the project area.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N
Bexar	Plants	turnip-root scurfpea	*Pediomelum cyphocalyx*	Grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas (Carr 2015).	N	According to USGS topographic maps, the project area occurs along the eastern boarder of the Edwards Plateau. During a field survey on January 16th, 2025, juniper-oak woodlands on limestone substrates were not observed within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	woolly butterfly-weed	*Gaura villosa ssp. parksii*	Flats and hills of red sand of Rio Grande Plains (Raven and Gregory 1972). April-Oct.	N	According to USGS topographic maps, the project area is within the Rio Grande Plains. However, the USDA soils data does not list red sand as occurring within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Plants	Wright's milkvetch	*Astragalus wrightii*	On sandy or gravelly soils; Flowering/fruiting: April and May	Y	USDA soils data shows that gravelly soils occur within the project area. This species may occur within the minimal grassy areas within the project where it may be disturbed by construction and staging.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Reptiles	common garter snake	*Thannophis sirtalis*	Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.	Y	During a field survey on January 16th, 2025, modified open areas in the vicinity of aquatic features, such as streams were observed adjacent to the project area. Streams occur within the project area. Any occurrence of species within the project area would be temporary and incidental.	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. No work is anticipated to occur in the waters or open areas next to streams. Species is not expected to be impacted.	N
Bexar	Reptiles	eastern box turtle	*Terrapene carolina*	Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.	Y	During a field survey on January 16th, 2025, forests, fields , forest brush, burrows, and forest field ecotones were not observed. However, pools of shallow water are possible in drier creekbeds which cross the project area.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Reptiles	keeled earless lizard	*Holbrookia propinqua*	Terrestrial: Habitats include coastal dunes, barrier islands, and other sandy areas (Axtell 1983). Although it occurs well inland, this species is most abundant on coastal dunes, were it seeks shelter in the burrows of small mammals or crabs (Bartlett and Bartlett 1999).	N	USDA soils data does not list well-drained sandy soils within the project area. During a January 16th, 2025, coastal dunes, barrier islands, and burrows were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N
Bexar	Reptiles	plateau spot-tailed earless lizard	*Holbrookia lacerata*	Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).	Y	During a field survey on January 16th, 2025, open prairie brushland, open meadows, fields, mesquite-prickly pear associations, prairie savanna, and oak-juniper woodlands were not observed.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N
Bexar	Reptiles	prairie skink	*Plestiodon septentrionalis*	The prairie skink can occur in any native grassland habitat across the Rolling Plains, Blackland Prairie, Post Oak Savanna and Pineywoods ecoregions.	N	Based on desktop survey, project area occurs within the Blackland Prairie ecoregion. However during a field survey on January 16th, 2025, native grasslands were not observed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	N

SGCN Analysis Table

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present? Y/N	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Reptiles	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.	Y	During a field survey on January 16th, 2025, open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, and fallow fields were not observed. There are no sandy soils within project area according to USDA soils data. There are streams which cross the project area. Any occurrence of species within the project area is anticipated to be temporary and incidental.	No impact	Species use of habitat in project area is anticipated to be temporary and incidental. Species is not anticipated to be impacted.	N
Bexar	Reptiles	Tamaulipan spot-tailed earless lizard	*Holbrookia subcaudalis*	Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).	Y	During a field survey on January 16th, 2025, open prairie brushland, open meadows, fields, mesquite-prickly pear associations, prairie savanna, and oak-juniper woodlands were not observed.	May impact	Species preferred habitat does occur within the project area that could be impacted.	N
Bexar	Reptiles	Texas Map turtle	*Graptemys berlandieri*	Aquatic: Primarily a river turtle but can also be found in reservoirs. Can be found in deep and shallow water with sufficient basking sites (emergent rocks and woody debris).	Y	Streams which cross the project area may be suitable for the species, based on desktop survey and field survey conducted on January 16th, 2025.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N
Bexar	Reptiles	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.	Y	During a field survey on January 16th, 2025, prairie grassland, pasture, fields, burrows, sandhills, open woodlands. However, pools of shallow streams and creek pools may occur at streams which cross the project area.	No impact	No work is anticipated to occur in water crossings located within the project area as part of proposed project.	N



Species Results

BCR(s): 21-OAKS_AND_PRAIRIES
State(s): TX

Acadian Flycatcher
Empidonax virescens

Global: 5,200,000
Continental U.S. & Canada: 5,200,000

State Threatened: WI

Alder Flycatcher
Empidonax alnorum

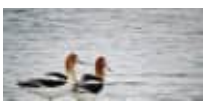
Global: 120,000,000
Continental U.S. & Canada: 120,000,000

State Endangered: HI

Allen's Hummingbird
Selasphorus sasin

Global: 1,500,000
Continental U.S. & Canada: 1,500,000

BCRBCC Breeding: 5,32



American Avocet

Global: 460,000
Continental U.S. & Canada: 450,000

BCRBCC Breeding: 9, 33

Recurvirostra americana

American Bittern
Botaurus lentiginosus

Global: 2,500,000
Continental U.S. & Canada: 2,500,000

State Threatened: MD

State Endangered: MA, CT, NJ, PA, OH, IN, MO

American Coot
Fulica americana

Global: 7,100,000
Continental U.S. & Canada: 5,500,000

BCRBCC Non Breeding: 101

American Crow
Corvus brachyrhynchos

Global: 29,000,000
Continental U.S. & Canada: 29,000,000

Common

American Golden-Plover
Pluvialis dominica

Global: 500,000
Continental U.S. & Canada: 500,000

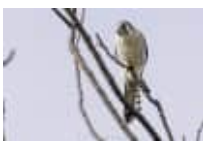
BCRBCC Non Breeding: 11,13,19,20,21,22,23,25,26,36,37

BCRBCC Breeding: 2,3,4

American Goldfinch
Spinus tristis

Global: 44,000,000
Continental U.S. & Canada: 44,000,000

Common



American Kestrel
Falco sparverius

Global: 9,200,000
Continental U.S. & Canada: 2,800,000

State Threatened: NJ

State Endangered: DE

BCRBCC Breeding: 25,27,31

American Pipit
Anthus rubescens

Global: 20,000,000
Continental U.S. & Canada: 18,000,000

Common

American Redstart
Setophaga ruticilla

Global: 42,000,000
Continental U.S. & Canada: 42,000,000

Common

American Robin
Turdus migratorius

Global: 370,000,000
Continental U.S. & Canada: 370,000,000

Common

American White Pelican
Pelecanus erythrorhynchos

Global: 450,000
Continental U.S. & Canada: 410,000

State Endangered: WA

BCRBCC Breeding: 9

American Wigeon
Mareca americana

Global: 2,700,000
Continental U.S. & Canada: 2,700,000

Common

American Woodcock
Scolopax minor

Global: 3,500,000
Continental U.S. & Canada: 3,500,000

Common

Anhinga
Anhinga anhinga

Global: 2,000,000
Continental U.S. & Canada: 27,000

Common

Anna's Hummingbird
Calypte anna

Global: 9,600,000
Continental U.S. & Canada: 8,800,000

Common

Ash-throated Flycatcher
Myiarchus cinerascens

Global: 10,000,000
Continental U.S. & Canada: 6,800,000

Common

Audubon's Oriole
Icterus graduacauda

Global: 3,500,000
Continental U.S. & Canada: 170,000

Common

Baird's Sandpiper
Calidris bairdii

Global: 300,000
Continental U.S. & Canada: 280,000

Common

Bald Eagle
Haliaeetus leucocephalus

Global: 200,000
Continental U.S. & Canada: 200,000

State Threatened: MA, CT, NH, NY, TX, NM, NC, SD, SC
State Endangered: NJ, VT, CA

Baltimore Oriole
Icterus galbula

Global: 12,000,000
Continental U.S. & Canada: 12,000,000

Common

Bank Swallow
Riparia riparia

Global: 29,000,000
Continental U.S. & Canada: 7,900,000

State Threatened: CA

Barn Owl
Tyto alba

Global: 3,600,000
Continental U.S. & Canada: 130,000

State Threatened: OH
State Endangered: CT, RI, IA, MI

Barn Swallow
Hirundo rustica

Global: 190,000,000
Continental U.S. & Canada: 47,000,000

Common

Barred Owl
Strix varia

Global: 3,500,000
Continental U.S. & Canada: 3,500,000

State Threatened: NJ

Bay-breasted

Global: 9,900,000
Continental U.S. & Canada:

BCRBCC Breeding: 14

Warbler
Setophaga castanea

9,900,000

Bell's Vireo
Vireo bellii

Global: 5,700,000
Continental U.S. & Canada: 4,600,000

Federally Endangered: Ssp pusillus only - wherever found

State Threatened: NM, WI

State Endangered: CA (ssp. arizonae and pusillus only)

Belted Kingfisher
Megaceryle alcyon

Global: 1,800,000
Continental U.S. & Canada: 1,800,000

BCRBCC Breeding: 13

Bewick's Wren
Thryomanes bewickii

Global: 7,900,000
Continental U.S. & Canada: 4,600,000

State Endangered: MS, TN, SC

BCRBCC Breeding: 24,25

Black Phoebe
Sayornis nigricans

Global: 5,000,000
Continental U.S. & Canada: 1,200,000

Common

Black Vulture
Coragyps atratus

Global: 190,000,000
Continental U.S. & Canada: 9,600,000

Common

Black-and-white Warbler

Global: 18,000,000
Continental U.S. & Canada: 18,000,000

Common

Mniotilta varia

Black-bellied Whistling-Duck

Dendrocygna autumnalis

Global: 1,000,000
Continental U.S. & Canada: Not yet available

Common

Black-billed Cuckoo

Coccyzus erythropthalmus

Global: 880,000
Continental U.S. & Canada: 880,000

State Threatened: IL

BCRBCC Breeding: 11,12,13,14,17,19,22,23,24,28,29,30

Black-capped Vireo

Vireo atricapilla

Global: 220,000
Continental U.S. & Canada: 150,000

State Endangered: TX

BCRBCC Breeding: 19,20,35

Black-chinned Hummingbird

Archilochus alexandri

Global: 8,800,000
Continental U.S. & Canada: 8,200,000

Common

Black-crested Titmouse

Baeolophus atricristatus

Global: 1,200,000
Continental U.S. & Canada: 640,000

Common

Black-crowned

Global: 3,000,000
Continental U.S. & Canada: 420,000

State Threatened: ME, NJ, OR

Night-Heron
Nycticorax nycticorax

State Endangered: DE, PA, IN

Black-headed Grosbeak
Pheucticus melanocephalus

Global: 15,000,000
Continental U.S. & Canada: 12,000,000

Common

Black-necked Stilt
Himantopus mexicanus

Global: 900,000
Continental U.S. & Canada: 180,000

Federally Endangered: Ssp. knudseni only - wherever found

State Endangered: HI (ssp. knudseni only)

Black-throated Blue Warbler
Setophaga caerulescens

Global: 2,400,000
Continental U.S. & Canada: 2,400,000

Common

Black-throated Gray Warbler
Setophaga nigrescens

Global: 3,200,000
Continental U.S. & Canada: 3,100,000

BCRBCC Breeding: 15,34

Black-throated Green Warbler
Setophaga virens

Global: 9,200,000
Continental U.S. & Canada: 9,200,000

BCRBCC Breeding: 27

Black-throated Sparrow
Amphispiza bilineata

Global: 62,000,000
Continental U.S. & Canada: 31,000,000

Common

Blackburnian Warbler
Setophaga fusca

Global: 13,000,000
Continental U.S. & Canada: 13,000,000

Common

Blackpoll Warbler
Setophaga striata

Global: 60,000,000
Continental U.S. & Canada: 60,000,000

State Endangered: PA

Blue Bunting
Cyanocompsa parellina

Global: Not yet available
Continental U.S. & Canada: Not yet available

Common

Blue Grosbeak
Passerina caerulea

Global: 35,000,000
Continental U.S. & Canada: 21,000,000

Common

Blue Jay
Cyanocitta cristata

Global: 17,000,000
Continental U.S. & Canada: 17,000,000

Common

Blue-gray Gnatcatcher
Polioptila caerulea

Global: 260,000,000
Continental U.S. & Canada: 230,000,000

Common

Blue-headed Vireo
Vireo solitarius

Global: 13,000,000
Continental U.S. & Canada: 13,000,000

Common

Blue-winged Teal
Spatula discors

Global: 7,800,000
Continental U.S. & Canada: 7,800,000

Common

Blue-winged Warbler
Vermivora cyanoptera

Global: 680,000
Continental U.S. & Canada: 680,000

BCRBCC Breeding: 13,30

Bobolink
Dolichonyx oryzivorus

Global: 10,000,000
Continental U.S. & Canada: 10,000,000

State Threatened: NJ

BCRBCC Breeding: 9,10,11,12,13,14,17,19,22,23,24,28,30

Bonaparte's Gull
Chroicocephalus philadelphia

Global: 790,000
Continental U.S. & Canada: 790,000

Common

Brewer's Blackbird
Euphagus cyanocephalus

Global: 23,000,000
Continental U.S. & Canada: 23,000,000

Common

Broad-tailed Hummingbird
Selasphorus platycercus

Global: 9,800,000
Continental U.S. & Canada: 6,000,000

BCRBCC Breeding: 9,10,16,18,34,35

Broad-winged Hawk
Buteo platypterus

Global: 1,900,000
Continental U.S. & Canada: 1,800,000

Federally Endangered: Ssp. brunnescens only -wherever found

State Endangered: DE

Bronzed Cowbird
Molothrus aeneus

Global: 6,600,000
Continental U.S. & Canada: 820,000

Common

Brown Creeper
Certhia

Global: 11,000,000
Continental U.S. & Canada: 9,500,000

Common

americana

Brown Pelican
Pelecanus occidentalis

Global: 370,000
Continental U.S. & Canada: 100,000

State Endangered: MS, WA, NM, (OR - ssp californicus only)

BCRBCC Breeding: 101

Brown Thrasher
Toxostoma rufum

Global: 6,200,000
Continental U.S. & Canada: 6,200,000

Common

Brown-crested Flycatcher
Myiarchus tyrannulus

Global: 14,000,000
Continental U.S. & Canada: 1,000,000

Common

Brown-headed Cowbird
Molothrus ater

Global: 130,000,000
Continental U.S. & Canada: 130,000,000

Common

Buff-bellied Hummingbird
Amazilia yucatanensis

Global: 610,000
Continental U.S. & Canada: 110,000

Common

Global: 1,300,000
Continental U.S. & Canada: 1,300,000

Common

Bufflehead
Bucephala albeola

Bullock's Oriole
Icterus bullockii

Global: 7,400,000
Continental U.S. & Canada: 6,900,000

BCRBCC Breeding: 32

Burrowing Owl
Athene cunicularia

Global: 18,000,000
Continental U.S. & Canada: 990,000

State Threatened: CO

BCRBCC Breeding: 31 (ssp. floridana only); 17, 19, 32, 33, 35 (ssp. hypugaea only)

Cactus Wren
Campylorhynchus brunneicapillus

Global: 8,500,000
Continental U.S. & Canada: 3,000,000

BCRBCC Breeding: 35

Calliope Hummingbird
Selasphorus calliope

Global: 4,500,000
Continental U.S. & Canada: 4,500,000

BCRBCC Breeding: 9,10,15

Canada Goose
Branta canadensis

Global: 7,600,000
Continental U.S. & Canada: 7,500,000

Common

Canada Warbler

Global: 2,600,000
Continental U.S. & Canada: 2,600,000

BCRBCC Breeding: 12,13,14,23,28,30

Cardellina canadensis

Global: 690,000
Continental U.S. & Canada: 690,000

Common

Canvasback
Aythya valisineria

Canyon Towhee
Melozone fusca

Global: 9,100,000
Continental U.S. & Canada: 2,800,000

Common

Canyon Wren
Catherpes mexicanus

Global: 1,000,000
Continental U.S. & Canada: 420,000

Common

Carolina Chickadee
Poecile carolinensis

Global: 13,000,000
Continental U.S. & Canada: 13,000,000

Common

Carolina Wren
Thryothorus ludovicianus

Global: 19,000,000
Continental U.S. & Canada: 18,000,000

Common

Cassin's Sparrow
Peucaea cassinii

Global: 14,000,000
Continental U.S. & Canada: 9,600,000

BCRBCC Breeding: 35

Cassin's Vireo
Vireo cassinii

Global: 5,000,000
Continental U.S. & Canada: 4,600,000

Common

Cattle Egret
Bubulcus ibis

Global: 48,000,000
Continental U.S. & Canada: 2,800,000

State Threatened: NJ

State Endangered: OH

Cave Swallow
Petrochelidon fulva

Global: 9,600,000
Continental U.S. & Canada: 2,800,000

Common

Cedar Waxwing
Bombycilla cedrorum

Global: 64,000,000
Continental U.S. & Canada: 64,000,000

Common

Cerulean Warbler
Setophaga cerulea

Global: 530,000
Continental U.S. & Canada: 530,000

State Threatened: MI, IL, WI

State Endangered: DE, RI

BCRBCC Breeding: 12,13,22,23,24,26,27,28,29,30

Chestnut-collared Longspur
Calcarius ornatus

Global: 3,100,000
Continental U.S. & Canada: 3,100,000

State Endangered: MN

BCRBCC Non Breeding: 19,20,31,35,36

BCRBCC Breeding: 11,17,18

Chestnut-sided Warbler
Setophaga pensylvanica

Global: 18,000,000
Continental U.S. & Canada: 18,000,000

Common

Chimney Swift
Chaetura pelagica

Global: 8,800,000
Continental U.S. & Canada: 8,800,000

BCRBCC Breeding: 11,12,13,14,18,19,20,21,22,23,24,25,26,27,28,29,30,31,36,37

Chipping Sparrow
Spizella passerina

Global: 240,000,000
Continental U.S. & Canada: 230,000,000

Common

Chuck-will's-widow
Antrostomus carolinensis

Global: 5,700,000
Continental U.S. & Canada: 5,600,000

State Threatened: IL

BCRBCC Breeding: 25,27,28,29

Cinnamon Teal
Spatula cyanoptera

Global: 380,000
Continental U.S. & Canada: 300,000

Common

Clay-colored Sparrow
Spizella pallida

Global: 60,000,000
Continental U.S. & Canada: 60,000,000

Common

Clay-colored Thrush
Turdus grayi

Global: 20,000,000
Continental U.S. & Canada: 5,000

Common

Cliff Swallow
Petrochelidon pyrrhonota

Global: 83,000,000
Continental U.S. & Canada: 78,000,000

Common

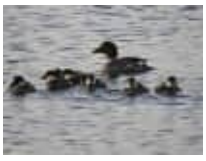
Common Gallinule
Gallinula galeata

Global: 5,100,000
Continental U.S. & Canada: 500,000

Federally Endangered: Ssp. sandvicensis only - wherever found

State Threatened: ME

State Endangered: CT, IN, (HI - ssp. sandvicensis only)



Common Goldeneye
Bucephala clangula

Global: 2,500,000
Continental U.S. & Canada: 1,200,000

Common

Common Grackle
Quiscalus

Global: 67,000,000
Continental U.S. & Canada: 67,000,000

Common

quiscula

Common Ground-Dove
Columbina passerina

Global: 36,000,000
Continental U.S. & Canada: 2,000,000

State Threatened: SC

State Endangered: NM

Common Nighthawk
Chordeiles minor

Global: 23,000,000
Continental U.S. & Canada: 22,000,000

State Endangered: CT, NH, VT

BCRBCC Breeding: 35 (ssp.henryi only), 28 (ssp. minor only)

Common Pauraque
Nyctidromus albicollis

Global: 20,000,000
Continental U.S. & Canada: 5,000

Common

Common Poorwill
Phalaenoptilus nuttallii

Global: 1,700,000
Continental U.S. & Canada: 1,300,000

Common

Common Raven
Corvus corax

Global: 29,000,000
Continental U.S. & Canada: 8,300,000

State Threatened: TN

Common

Global: 77,000,000
Continental U.S. & Canada: 76,000,000

BCRBCC Breeding: 32

Yellowthroat
Geothlypis trichas

Cooper's Hawk
Accipiter cooperii

Global: 1,000,000
Continental U.S. & Canada: 840,000

Common

Couch's Kingbird
Tyrannus couchii

Global: 1,100,000
Continental U.S. & Canada: 250,000

Common

Crested Caracara
Caracara plancus

Global: 8,100,000
Continental U.S. & Canada: 120,000

Federally Threatened: Florida population of ssp. audubonii only

Curve-billed Thrasher
Toxostoma curvirostre

Global: 3,100,000
Continental U.S. & Canada: 1,000,000

BCRBCC Breeding: 36

Dark-eyed Junco
Junco hyemalis

Global: 220,000,000
Continental U.S. & Canada: 220,000,000

Common

Dickcissel
Spiza americana

Global: 28,000,000
Continental U.S. & Canada: 28,000,000

State Endangered: PA

BCRBCC Breeding: 37

Double-crested Cormorant
Phalacrocorax auritus

Global: Not yet available
Continental U.S. & Canada: Not yet available

Common

Downy Woodpecker
Dryobates pubescens

Global: 13,000,000
Continental U.S. & Canada: 13,000,000

Common

Dunlin
Calidris alpina

Global: 5,500,000
Continental U.S. & Canada: 1,500,000

BCRBCC Non Breeding: 11,12,13,22,23,27,30,31,37,2

BCRBCC Breeding: 3

Eared Grebe
Podiceps nigricollis

Global: 3,100,000
Continental U.S. & Canada: 2,000,000

Common

Eastern Bluebird
Sialia sialis

Global: 23,000,000
Continental U.S. & Canada: 21,000,000

Common

Eastern Kingbird
Tyrannus tyrannus

Global: 26,000,000
Continental U.S. & Canada: 26,000,000

Common

Eastern Meadowlark
Sturnella magna

Global: 34,000,000
Continental U.S. & Canada: 2,900,000

State Threatened: CT

BCRBCC Breeding: 13,20,35,36

Eastern Phoebe
Sayornis phoebe

Global: 35,000,000
Continental U.S. & Canada: 35,000,000

Common

Eastern Screech-Owl
Megascops asio

Global: 560,000
Continental U.S. & Canada: 500,000

Common

Eastern Towhee
Pipilo erythrophthalmus

Global: 29,000,000
Continental U.S. & Canada: 29,000,000

Common

Eastern Whip-poor-will
Antrostomus vociferus

Global: 1,800,000
Continental U.S. & Canada: 1,800,000

State Threatened: VT

BCRBCC Breeding: 11,12,13,14,22,23,24,25,26,27,28,29,30

Eastern Wood-Pewee
Contopus virens

Global: 6,500,000
Continental U.S. & Canada: 6,500,000

Common

Field Sparrow
Spizella pusilla

Global: 9,300,000
Continental U.S. & Canada: 9,300,000

BCRBCC Breeding: 20,24

Forster's Tern
Sterna forsteri

Global: 150,000
Continental U.S. & Canada: 130,000

State Threatened: MI

State Endangered: DE, WI

BCRBCC Breeding: 9,37

Fox Sparrow
Passerella iliaca

Global: 35,000,000
Continental U.S. & Canada: 35,000,000

Common

Franklin's Gull
Leucophaeus pipixcan

Global: 2,300,000
Continental U.S. & Canada: 2,300,000

BCRBCC Breeding: 9,10,11,17

Fulvous Whistling-Duck
Dendrocygna bicolor

Global: 1,400,000
Continental U.S. & Canada: 120,000

Common

Gadwall
Mareca strepera

Global: 4,400,000
Continental U.S. & Canada: 3,400,000

Common

Golden-cheeked Warbler
Setophaga chrysoparia

Global: 110,000
Continental U.S. & Canada: 110,000

Federally Endangered: Wherever found

State Endangered: TX

Golden-crowned Kinglet
Regulus satrapa

Global: 140,000,000
Continental U.S. & Canada: 130,000,000

Common

Golden-fronted Woodpecker
Melanerpes aurifrons

Global: 5,300,000
Continental U.S. & Canada: 810,000

Common

Golden-winged Warbler
Vermivora chrysoptera

Global: 390,000
Continental U.S. & Canada: 390,000

State Endangered: MA, CT, NJ, IN

BCRBCC Breeding: 11,12,13,23,28

Grasshopper Sparrow
Ammodramus savannarum

Global: 34,000,000
Continental U.S. & Canada: 33,000,000

Federally Endangered: Ssp. floridanus only - wherever found

State Threatened: MA, NH, NJ, VT

State Endangered: CT, ME, (NM- ssp. ammolegus only)

BCRBCC Breeding: 11,17,18,20,22,23,24,27,29,30

Gray Catbird
Dumetella carolinensis

Global: 29,000,000
Continental U.S. & Canada: 29,000,000

Common

Gray-cheeked Thrush
Catharus minimus

Global: 46,000,000
Continental U.S. & Canada: 42,000,000

Common

Great Blue Heron
Ardea herodias

Global: 700,000
Continental U.S. & Canada: 620,000

BCRBCC Breeding: 31

Great Crested Flycatcher
Myiarchus crinitus

Global: 8,800,000
Continental U.S. & Canada: 8,800,000

Common

Great Egret
Ardea alba

Global: 9,500,000
Continental U.S. & Canada: 710,000

State Threatened: CT, WI

State Endangered: PA

Great Horned Owl
Bubo virginianus

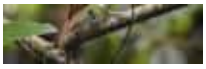
Global: 5,700,000
Continental U.S. & Canada: 3,800,000

Common

Great Kiskadee

Global: 200,000,000
Continental U.S. & Canada: 60,000

Common



Pitangus sulphuratus

Great-tailed Grackle
Quiscalus mexicanus

Global: 30,000,000
Continental U.S. & Canada: 8,200,000

Common

Greater Roadrunner
Geococcyx californianus

Global: 1,400,000
Continental U.S. & Canada: 840,000

Common

Greater Scaup
Aythya marila

Global: 1,200,000
Continental U.S. & Canada: 720,000

Common

Greater White-fronted Goose
Anser albifrons

Global: 5,500,000
Continental U.S. & Canada: 4,300,000

Common

Greater Yellowlegs
Tringa melanoleuca

Global: 140,000
Continental U.S. & Canada: 140,000

Common

Green Heron
Butorides virescens

Global: 1,200,000
Continental U.S. & Canada: 770,000

Common

Green Jay
Cyanocorax yncas

Global: 880,000
Continental U.S. & Canada: 57,000

Common

Green Kingfisher
Chloroceryle americana

Global: 20,000,000
Continental U.S. & Canada: 5,000

Common

Green-tailed Towhee
Pipilo chlorurus

Global: 4,800,000
Continental U.S. & Canada: 4,800,000

Common

Green-winged Teal
Anas crecca

Global: 6,700,000
Continental U.S. & Canada: 3,900,000

Common

Hammond's Flycatcher
Empidonax hammondii

Global: 20,000,000
Continental U.S. & Canada: 20,000,000

Common

Harris's Hawk
Parabuteo unicinctus

Global: 920,000
Continental U.S. & Canada: 52,000

BCRBCC Breeding: 36

Harris's Sparrow
Zonotrichia querula

Global: 2,000,000
Continental U.S. & Canada: 2,000,000

Common

Hermit Thrush
Catharus guttatus

Global: 72,000,000
Continental U.S. & Canada: 72,000,000

Common

Hooded Merganser
Lophodytes cucullatus

Global: 1,100,000
Continental U.S. & Canada: 1,100,000

Common

Hooded Oriole
Icterus cucullatus

Global: 1,700,000
Continental U.S. & Canada: 350,000

Common

Hooded Warbler
Setophaga citrina

Global: 5,200,000
Continental U.S. & Canada: 5,200,000

State Threatened: WI

State Endangered: DE

Horned Lark
Eremophila

Global: 140,000,000
Continental U.S. & Canada: 100,000,000

Federally Threatened: Ssp. strigata only - wherever found

alpestris

State Threatened: NJ

State Endangered: CT, (WA - ssp. strigata only)

House Finch
Haemorhous mexicanus

Global: 40,000,000
Continental U.S. & Canada: 33,000,000

Common

House Wren
Troglodytes aedon

Global: 190,000,000
Continental U.S. & Canada: 43,000,000

Common

Hutton's Vireo
Vireo huttoni

Global: 2,700,000
Continental U.S. & Canada: 960,000

Common

Inca Dove
Columbina inca

Global: 4,700,000
Continental U.S. & Canada: 620,000

Common

Indigo Bunting
Passerina cyanea

Global: 77,000,000
Continental U.S. & Canada: 77,000,000

Common

Kentucky Warbler
Geothlypis formosa

Global: 2,600,000
Continental U.S. & Canada: 2,600,000

State Threatened: WI

BCRBCC Breeding: 21,22,24,25,26,27,28,29,30

Killdeer
Charadrius vociferus

Global: 2,300,000
Continental U.S. & Canada: 1,800,000

Common

Ladder-backed Woodpecker
Dryobates scalaris

Global: 5,500,000
Continental U.S. & Canada: 2,400,000

Common

Lark Bunting
Calamospiza melanocorys

Global: 12,000,000
Continental U.S. & Canada: 12,000,000

BCRBCC Breeding: 17,19

Lark Sparrow
Chondestes grammacus

Global: 11,000,000
Continental U.S. & Canada: 11,000,000

State Threatened: TN

State Endangered: OH

Laughing Gull
Leucophaeus atricilla

Global: 1,600,000
Continental U.S. & Canada: 680,000

Common

Lazuli Bunting
Passerina amoena

Global: 6,500,000
Continental U.S. & Canada: 6,500,000

Common

Le Conte's Sparrow
Ammospiza leconteii

Global: 5,100,000
Continental U.S. & Canada: 5,100,000

BCRBCC Non Breeding: 24,35,26,27,37

BCRBCC Breeding: 11,12,23

Least Flycatcher
Empidonax minimus

Global: 27,000,000
Continental U.S. & Canada: 27,000,000

Common

Least Grebe
Tachybaptus dominicus

Global: 500,000
Continental U.S. & Canada: Not yet available

Common

Least Sandpiper
Calidris minutilla

Global: 700,000
Continental U.S. & Canada: 700,000

Common

Lesser Goldfinch
Spinus psaltria

Global: 15,000,000
Continental U.S. & Canada: 5,700,000

Common

Lesser

Global: 14,000,000
Continental U.S. & Canada: 3,800,000

Common

Nighthawk
Chordeiles acutipennis

Lesser Scaup
Aythya affinis

Global: 3,700,000
Continental U.S. & Canada: 3,700,000

Common

Lesser Yellowlegs
Tringa flavipes

Global: 660,000
Continental U.S. & Canada: 660,000

BCRBCC Non Breeding: 5,9,10,11,12,13,14,16,17,18,19,20,21,22,23,24,25,26,27,30,31,36,37, 101

BCRBCC Breeding: 4

Lincoln's Sparrow
Melospiza lincolnii

Global: 88,000,000
Continental U.S. & Canada: 88,000,000

Common

Little Blue Heron
Egretta caerulea

Global: 1,100,000
Continental U.S. & Canada: 270,000

BCRBCC Breeding: 21,26

Loggerhead Shrike
Lanius ludovicianus

Global: 7,000,000
Continental U.S. & Canada: 4,600,000

Federally Endangered: Ssp, mearnsi only - wherever found

State Threatened: VA

State Endangered: MD, NY, PA, OH, IN, MN, WI, (NJ - ssp. migrans only)

BCRBCC Breeding: 21,22,37

Long-billed Curlew
Numenius americanus

Global: 140,000
Continental U.S. & Canada: 140,000

BCRBCC Non Breeding: 20,21,35,36,37

BCRBCC Breeding: 11,18

Long-billed Dowitcher
Limnodromus scolopaceus

Global: 650,000
Continental U.S. & Canada: 520,000

Common

Long-billed Thrasher
Toxostoma longirostre

Global: 280,000
Continental U.S. & Canada: 96,000

Common

Louisiana Waterthrush
Parkesia motacilla

Global: 450,000
Continental U.S. & Canada: 450,000

State Threatened: MI

MacGillivray's Warbler
Geothlypis tolmiei

Global: 11,000,000
Continental U.S. & Canada: 11,000,000

Common

Magnolia Warbler
Setophaga magnolia

Global: 39,000,000
Continental U.S. & Canada: 39,000,000

Common

Mallard
Anas platyrhynchos

Global: 19,000,000
Continental U.S. & Canada: 11,000,000

Common

Marsh Wren
Cistothorus palustris

Global: 11,000,000
Continental U.S. & Canada: 11,000,000

State Endangered: IN

BCRBCC Breeding: 31

Merlin
Falco columbarius

Global: 3,200,000
Continental U.S. & Canada: 1,600,000

State Threatened: MI

Mississippi Kite
Ictinia mississippiensis

Global: 700,000
Continental U.S. & Canada: 700,000

Common

Mottled Duck
Anas fulvigula

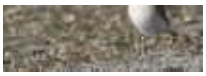
Global: 180,000
Continental U.S. & Canada: 180,000

Common

Mountain Plover

Global: 20,000
Continental U.S. & Canada:

State Threatened: NE



Charadrius montanus

20,000

BCRBCC Non Breeding: 19,20,21,,32,33,35,36,37

BCRBCC Breeding: 10,11,16,17,18

Mourning Dove

Zenaida macroura

Global: 150,000,000
Continental U.S. & Canada: 130,000,000

Common

Mourning Warbler

Geothlypis philadelphia

Global: 14,000,000
Continental U.S. & Canada: 14,000,000

State Endangered: MD

Nashville Warbler

Leiothlypis ruficapilla

Global: 40,000,000
Continental U.S. & Canada: 40,000,000

State Threatened: MD

Neotropic Cormorant

Nannopterum brasilianum

Global: Not yet available
Continental U.S. & Canada: Not yet available

State Threatened: NM

Northern Cardinal

Cardinalis cardinalis

Global: 130,000,000
Continental U.S. & Canada: 120,000,000

Common

Northern Flicker

Global: 12,000,000
Continental U.S. & Canada: 11,000,000

Common

Colaptes auratus

Northern Harrier
Circus hudsonius

Global: 820,000
Continental U.S. & Canada: 620,000

State Threatened: MA, NY, PA

State Endangered: CT, DE, NH, NJ, RI, OH, IN, IA, MO

BCRBCC Breeding: 16,17,19

Northern Mockingbird
Mimus polyglottos

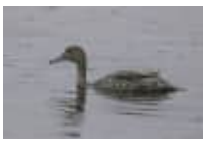
Global: 43,000,000
Continental U.S. & Canada: 34,000,000

Common

Northern Parula
Setophaga americana

Global: 18,000,000
Continental U.S. & Canada: 18,000,000

State Threatened: MA



Northern Pintail
Anas acuta

Global: 5,100,000
Continental U.S. & Canada: 3,200,000

Common

Northern Rough-winged Swallow
Stelgidopteryx serripennis

Global: 27,000,000
Continental U.S. & Canada: 20,000,000

Common

Northern Shoveler
Spatula

Global: 5,900,000
Continental U.S. & Canada: 4,400,000

Common

clypeata

Northern Waterthrush
Parkesia noveboracensis

Global: 17,000,000
Continental U.S. & Canada: 17,000,000

Common

Olive Sparrow
Arremonops rufivirgatus

Global: 4,800,000
Continental U.S. & Canada: 830,000

Common

Olive-sided Flycatcher
Contopus cooperi

Global: 1,900,000
Continental U.S. & Canada: 1,900,000

BCRBCC Breeding: 2,3,5,9,10,12,14,15,16,32,34

Orange-crowned Warbler
Leiothlypis celata

Global: 82,000,000
Continental U.S. & Canada: 82,000,000

Common

Orchard Oriole
Icterus spurius

Global: 12,000,000
Continental U.S. & Canada: 11,000,000

BCRBCC Breeding: 36

Osprey
Pandion haliaetus

Global: 1,200,000
Continental U.S. & Canada: 400,000

State Threatened: NJ, IL, SD

Ovenbird
Seiurus aurocapilla

Global: 26,000,000
Continental U.S. & Canada: 26,000,000

Common

Pacific-slope Flycatcher
Empidonax difficilis

Global: 9,500,000
Continental U.S. & Canada: 9,000,000

Common

Painted Bunting
Passerina ciris

Global: 15,000,000
Continental U.S. & Canada: 13,000,000

BCRBCC Breeding: 20,27,31,36,37

Pectoral Sandpiper
Calidris melanotos

Global: 1,600,000
Continental U.S. & Canada: 1,500,000

BCRBCC Non Breeding: 9,11,12,13,16,18,19,20,21,22,23,25,26,27,30,31,36,37

BCRBCC Breeding: 3

Peregrine Falcon
Falco peregrinus

Global: 340,000
Continental U.S. & Canada: 72,000

State Threatened: CT, NH, VA, ID, NM, TN, (TX, SC - ssp. anatum only)

State Endangered: MA, ME, NJ, NY, PA, RI, MI, MS, MO, SD, WI

Philadelphia Vireo

Global: 4,000,000
Continental U.S. & Canada: 4,000,000

Common

Vireo philadelphicus

Pied-billed Grebe
Podilymbus podiceps

Global: 3,100,000
Continental U.S. & Canada: 1,100,000

State Threatened: NH, NY

State Endangered: MA, CT, DE, NJ, RI

Pine Siskin
Spinus pinus

Global: 46,000,000
Continental U.S. & Canada: 45,000,000

Common

Pine Warbler
Setophaga pinus

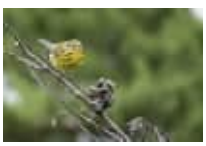
Global: 13,000,000
Continental U.S. & Canada: 13,000,000

Common

Global: 3,500,000
Continental U.S. & Canada: 3,000,000

BCRBCC Breeding: 34

Plumbeous Vireo
Vireo plumbeus



Prairie Warbler
Setophaga discolor

Global: 3,600,000
Continental U.S. & Canada: 3,600,000

State Endangered: MI

BCRBCC Breeding: 13,14,24,25,26,27,28,29,30,31

Global: 2,100,000
Continental U.S. & Canada: 2,100,000

BCRBCC Breeding: 21,22,24,25,26,27,28,29,30,37

Prothonotary Warbler

Protonotaria citrea

Purple Finch
Haemorhous purpureus

Global: 6,500,000
Continental U.S. & Canada: 6,500,000

Common

Purple Martin
Progne subis

Global: 9,300,000
Continental U.S. & Canada: 8,700,000

Common

Pyrrhuloxia
Cardinalis sinuatus

Global: 3,000,000
Continental U.S. & Canada: 1,600,000

BCRBCC Breeding: 18,19,20,33,34,35,36,37

Red Crossbill
Loxia curvirostra

Global: 26,000,000
Continental U.S. & Canada: 9,600,000

Common

Red-breasted Nuthatch
Sitta canadensis

Global: 20,000,000
Continental U.S. & Canada: 20,000,000

Common

Red-eyed Vireo
Vireo olivaceus

Global: 130,000,000
Continental U.S. & Canada: 130,000,000

Common

Red-naped Sapsucker
Sphyrapicus nuchalis

Global: 2,000,000
Continental U.S. & Canada: 2,000,000

Common

Red-shouldered Hawk
Buteo lineatus

Global: 1,900,000
Continental U.S. & Canada: 1,800,000

State Threatened: MI, WI

State Endangered: NJ

Red-tailed Hawk
Buteo jamaicensis

Global: 3,100,000
Continental U.S. & Canada: 2,800,000

Common

Red-winged Blackbird
Agelaius phoeniceus

Global: 180,000,000
Continental U.S. & Canada: 170,000,000

Common

Redhead
Aythya americana

Global: 1,200,000
Continental U.S. & Canada: 1,200,000

Common

Ring-billed Gull
Larus delawarensis

Global: 3,800,000
Continental U.S. & Canada: 3,700,000

Common

Ring-necked Duck
Aythya collaris

Global: 2,000,000
Continental U.S. & Canada: 2,000,000

Common

Ringed Kingfisher
Megaceryle torquata

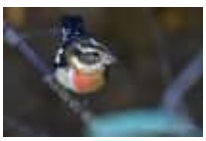
Global: 20,000,000
Continental U.S. & Canada: 500

Common

Rock Wren
Salpinctes obsoletus

Global: 4,100,000
Continental U.S. & Canada: 3,400,000

Common



Rose-breasted Grosbeak
Pheucticus ludovicianus

Global: 4,700,000
Continental U.S. & Canada: 1,700,000

BCRBCC Breeding: 13,14

Roseate Spoonbill
Platalea ajaja

Global: 170,000
Continental U.S. & Canada: 11,000

Common

Ross's Goose
Anser rossii

Global: 2,100,000
Continental U.S. & Canada: 1,600,000

Common

Ruby-crowned Kinglet

Global: Not yet available
Continental U.S. & Canada: Not yet available

Common

Regulus calendula

Ruby-throated Hummingbird
Archilochus colubris

Global: 36,000,000
Continental U.S. & Canada: 36,000,000

Common

Ruddy Duck
Oxyura jamaicensis

Global: 1,700,000
Continental U.S. & Canada: 1,300,000

BCRBCC Breeding: 101

Ruddy Ground-Dove
Columbina talpacoti

Global: Not yet available
Continental U.S. & Canada: 50

Common

Rufous Hummingbird
Selasphorus rufus

Global: 22,000,000
Continental U.S. & Canada: 22,000,000

BCRBCC Breeding: 5,9,10

Rufous-crowned Sparrow
Aimophila ruficeps

Global: 1,200,000
Continental U.S. & Canada: 600,000

BCRBCC Breeding: 20

Rusty Blackbird

Global: 6,800,000
Continental U.S. & Canada: 6,800,000

State Endangered: VT

Euphagus carolinus

BCRBCC Non Breeding: 22,23,24,26,27,28,29,30

Sage Thrasher

Oreoscoptes montanus

Global: 6,400,000
Continental U.S. & Canada: 6,400,000

BCRBCC Breeding: 9

Sandhill Crane

Antigone canadensis

Global: 560,000
Continental U.S. & Canada: 500,000

Federally Endangered: Ssp. pulla only - wherever found

State Threatened: OH, (CA - ssp. tabida only)

State Endangered: WA (ssp. tabida only), MS (ssp. pulla only)

Savannah Sparrow

Passerculus sandwichensis

Global: 170,000,000
Continental U.S. & Canada: 170,000,000

State Threatened: NJ

State Endangered: CA (ssp. beldingi only)

BCRBCC Breeding: 32

Say's Phoebe

Sayornis saya

Global: 5,900,000
Continental U.S. & Canada: 5,000,000

Common

Scarlet Tanager

Piranga olivacea

Global: 2,600,000
Continental U.S. & Canada: 2,600,000

BCRBCC Breeding: 30

Scissor-tailed Flycatcher
Tyrannus forficatus

Global: 9,100,000
Continental U.S. & Canada: 7,900,000

Common

Scott's Oriole
Icterus parisorum

Global: 4,900,000
Continental U.S. & Canada: 1,700,000

BCRBCC Breeding: 34,35

Semipalmated Sandpiper
Calidris pusilla

Global: 2,300,000
Continental U.S. & Canada: 2,300,000

BCRBCC Non Breeding: 12,13,14,22,23,24,26,27,30,31, 101

Sharp-shinned Hawk
Accipiter striatus

Global: 1,000,000
Continental U.S. & Canada: 410,000

Federally Endangered: Ssp. venator only - wherever found

State Endangered: CT

Snow Goose
Anser caerulescens

Global: 16,000,000
Continental U.S. & Canada: 15,000,000

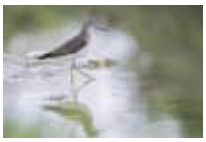
Common

Snowy Egret
Egretta thula

Global: 2,100,000
Continental U.S. & Canada: 220,000

State Threatened: CT

State Endangered: OH, MO



Solitary Sandpiper
Tringa solitaria

Global: 190,000
Continental U.S. & Canada: 190,000

BCRBCC Breeding: 4

Song Sparrow
Melospiza melodia

Global: 130,000,000
Continental U.S. & Canada: 130,000,000

BCRBCC Breeding: 32

Sora
Porzana carolina

Global: 4,400,000
Continental U.S. & Canada: 4,400,000

Common

Spotted Sandpiper
Actitis macularius

Global: 660,000
Continental U.S. & Canada: 660,000

Common

Spotted Towhee
Pipilo maculatus

Global: 40,000,000
Continental U.S. & Canada: 35,000,000

Common

Sprague's Pipit
Anthus spragueli

Global: 1,400,000
Continental U.S. & Canada: 1,400,000

State Endangered: MN

BCRBCC Non Breeding: 18,19,21,25,34,35,36,37

BCRBCC Breeding: 11,17

Stilt Sandpiper
Calidris

Global: 1,200,000
Continental U.S. & Canada: 1,200,000

Common

himantopus

Summer Tanager
Piranga rubra

Global: 12,000,000
Continental U.S. & Canada: 11,000,000

Common

Swainson's Hawk
Buteo swainsoni

Global: 900,000
Continental U.S. & Canada: 820,000

State Threatened: CA

Swainson's Thrush
Catharus ustulatus

Global: 120,000,000
Continental U.S. & Canada: 120,000,000

Common

Swainson's Warbler
Limnothlypis swainsonii

Global: 160,000
Continental U.S. & Canada: 160,000

State Endangered: DE, MD, MO

Swallow-tailed Kite
Elanoides forficatus

Global: 260,000
Continental U.S. & Canada: 12,000

State Threatened: TX

State Endangered: MS, SC

BCRBCC Breeding: 25,26,27,31,37

Swamp Sparrow
Melospiza georgiana

Global: 23,000,000
Continental U.S. & Canada: 23,000,000

Common

Tennessee Warbler
Leiothlypis peregrina

Global: 110,000,000
Continental U.S. & Canada: 110,000,000

Common

Thick-billed Longspur
Rhynchophanes mccownii

Global: 840,000
Continental U.S. & Canada: 840,000

State Threatened: NE

BCRBCC Non Breeding: 19,20,35

BCRBCC Breeding: 10,11,17,18

Tree Swallow
Tachycineta bicolor

Global: 19,000,000
Continental U.S. & Canada: 19,000,000

Common

Tricolored Heron
Egretta tricolor

Global: 190,000
Continental U.S. & Canada: 58,000

Common

Tropical Parula
Setophaga pitiayumi

Global: 20,000,000
Continental U.S. & Canada: 5,000

State Threatened: TX

Turkey Vulture
Cathartes aura

Global: 28,000,000
Continental U.S. & Canada: 8,400,000

Common

Upland Sandpiper
Bartramia longicauda

Global: 750,000
Continental U.S. & Canada: 750,000

State Threatened: ME, NY, WI

State Endangered: MA, CT, DE, MD, NH, NJ, PA, VT, OH, IN, WA

BCRBCC Breeding: 13,22,23

Veery
Catharus fuscescens

Global: 11,000,000
Continental U.S. & Canada: 11,000,000

BCRBCC Breeding: 12,14

Verdin
Auriparus flaviceps

Global: 7,200,000
Continental U.S. & Canada: 3,800,000

BCRBCC Breeding: 33

Vermilion Flycatcher
Pyrocephalus rubinus

Global: 15,000,000
Continental U.S. & Canada: 540,000

Common

Vesper Sparrow
Pooecetes gramineus

Global: 35,000,000
Continental U.S. & Canada: 35,000,000

State Threatened: MA

State Endangered: CT, NJ

BCRBCC Breeding: 5

Virginia Rail
Rallus limicola

Global: 240,000
Continental U.S. & Canada: 230,000

State Endangered: IN

Warbling Vireo
Vireo gilvus

Global: 53,000,000
Continental U.S. & Canada: 52,000,000

Common

Western Bluebird
Sialia mexicana

Global: 7,100,000
Continental U.S. & Canada: 5,700,000

Common

Western Kingbird
Tyrannus verticalis

Global: 30,000,000
Continental U.S. & Canada: 29,000,000

Common

Western Meadowlark
Sturnella neglecta

Global: 100,000,000
Continental U.S. & Canada: 95,000,000

Common

Western Sandpiper
Calidris mauri

Global: 3,500,000
Continental U.S. & Canada: 3,500,000

Common

Western Scrub-Jay
Aphelocoma

Global: 1,600,000
Continental U.S. & Canada: 1,300,000

Common

californica

Western Tanager
Piranga ludoviciana

Global: 15,000,000
Continental U.S. & Canada: 15,000,000

Common

White Ibis
Eudocimus albus

Global: 2,400,000
Continental U.S. & Canada: 1,200,000

Common

White-crowned Sparrow
Zonotrichia leucophrys

Global: 79,000,000
Continental U.S. & Canada: 79,000,000

Common

White-eyed Vireo
Vireo griseus

Global: 24,000,000
Continental U.S. & Canada: 22,000,000

Common

White-faced Ibis
Plegadis chihi

Global: 7,200,000
Continental U.S. & Canada: 1,300,000

State Threatened: |TX|

White-tailed Hawk
Geranoaetus albicaudatus

Global: 2,000,000
Continental U.S. & Canada: 10,000

State Threatened: |TX|

White-tailed Kite
Elanus leucurus

Global: 260,000
Continental U.S. & Canada: 16,000

Common

White-throated Sparrow
Zonotrichia albicollis

Global: 160,000,000
Continental U.S. & Canada: 160,000,000

Common

White-tipped Dove
Leptotila verreauxi

Global: 20,000,000
Continental U.S. & Canada: 10,000

Common

White-winged Dove
Zenaida asiatica

Global: 14,000,000
Continental U.S. & Canada: 5,200,000

Common

Willet
Tringa semipalmata

Global: 250,000
Continental U.S. & Canada: 250,000

BCRBCC Non Breeding: 5,32,33

BCRBCC Breeding: 9,10,11,14,15,17,19,27,30,31,37

Willow Flycatcher
Empidonax traillii

Global: 8,100,000
Continental U.S. & Canada: 8,100,000

Federally Endangered: Ssp. extimus only - wherever found

State Endangered: CA (CO, TX, NM - ssp. extimus only)

Wilson's Phalarope
Phalaropus tricolor

Global: 1,500,000
Continental U.S. & Canada: 1,500,000

State Threatened: MN

Wilson's Snipe
Gallinago delicata

Global: 2,000,000
Continental U.S. & Canada: 2,000,000

Common

Wilson's Warbler
Cardellina pusilla

Global: 81,000,000
Continental U.S. & Canada: 81,000,000

Common

Winter Wren
Troglodytes hiemalis

Global: 11,000,000
Continental U.S. & Canada: 11,000,000

Common

Wood Duck
Aix sponsa

Global: 4,600,000
Continental U.S. & Canada: 4,600,000

Common

Wood Stork
Mycteria americana

Global: 450,000
Continental U.S. & Canada: 16,000

Federally Threatened: AL, FL, GA, MS, NC, SC

State Threatened: TX

State Endangered: GA, MS, SC

Wood Thrush

Global: 12,000,000
Continental U.S. & Canada: 12,000,000

BCRBCC Breeding:

Hylocichla mustelina

12,13,14,22,23,24,25,26,27,28, 29,30

Worm-eating Warbler
Helmitheros vermivorum

Global: 780,000
Continental U.S. & Canada: 780,000

State Endangered: WI

Yellow Warbler
Setophaga petechia

Global: 97,000,000
Continental U.S. & Canada: 93,000,000

Common

Yellow-bellied Flycatcher
Empidonax flaviventris

Global: 13,000,000
Continental U.S. & Canada: 13,000,000

State Endangered: PA

Yellow-bellied Sapsucker
Sphyrapicus varius

Global: 14,000,000
Continental U.S. & Canada: 14,000,000

Common

Yellow-billed Cuckoo
Coccyzus americanus

Global: 9,600,000
Continental U.S. & Canada: 8,400,000

Federally Threatened: Western DPS only

State Threatened: MT

State Endangered: CA, ID

BCRBCC Breeding: 28

Yellow-breasted Chat
Icteria virens

Global: 17,000,000
Continental U.S. & Canada: 15,000,000

State Endangered: CT, RI

BCRBCC Breeding: 30

Yellow-crowned Night-Heron
Nyctanassa violacea

Global: 400,000
Continental U.S. & Canada: 130,000

State Threatened: NJ, WI

State Endangered: DE, PA, IN

Yellow-headed Blackbird
Xanthocephalus xanthocephalus

Global: 11,000,000
Continental U.S. & Canada: 11,000,000

State Endangered: IN

BCRBCC Breeding: 16

Yellow-rumped Warbler
Setophaga coronata

Global: 170,000,000
Continental U.S. & Canada: 170,000,000

Common

Yellow-throated Vireo
Vireo flavifrons

Global: 4,700,000
Continental U.S. & Canada: 4,700,000

Common

Yellow-throated Warbler
Setophaga dominica

Global: 2,000,000
Continental U.S. & Canada: 2,000,000

State Threatened: MI

State Endangered: WI

Zone-tailed Hawk

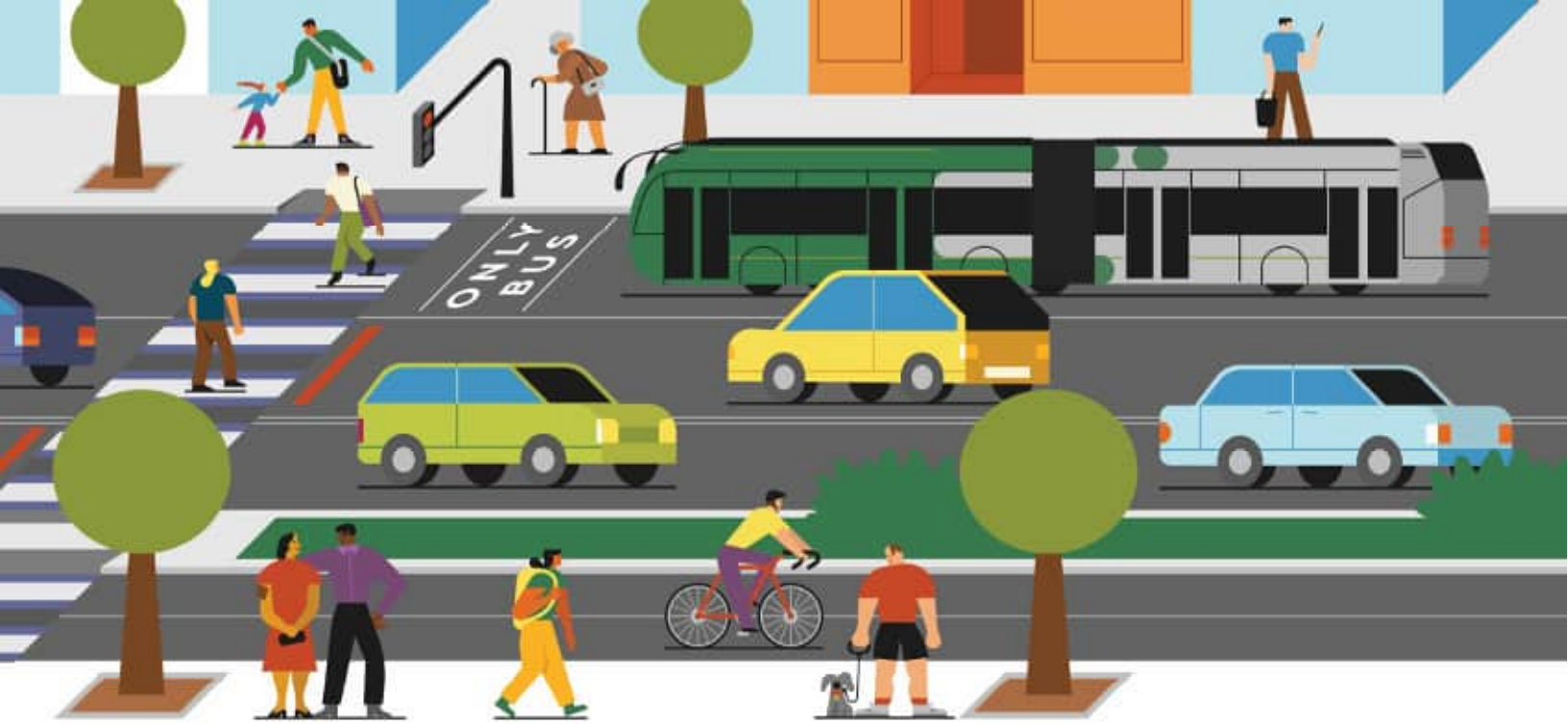
Buteo albonotatus

Global: 2,000,000

Continental U.S. & Canada: 6,200

State Threatened: |TX|

BGEPA Species Analysis Table								
Common Name	Scientific Name	Habitat	Potential Breeding Season in Bexar County	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Take Determination	Explanation for Take Determination	Presence/ Absence survey conducted?
Bald Eagle	*Haliaeetus leucocephalus*	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds	Breeds from late October to early May - *Texas A&M Texas Breeding Bird Atlas*	No	There are no tall trees or cliffs next to water within the project area. There are larger trees near water at Elmendorf Lake Park, which is located right outside of project area. However, no project activities would occur within the park. No eagles or eagle nests were observed within or around the project area during site visit conducted on January 16th, 2025. Any occurrence of species within the project area is anticipated to be temporary and incidental.	No Take or Kill	Species use of habitat in action area is anticipated to be temporary and incidental. No work is anticipated to occur in the waters or parks located within the action area as part of proposed project. Species is not expected to be effected, taken, or killed.	No



QUESTIONS?

To learn more about this Project and download materials, visit **KeepSAmoving.com**.

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