ADVANCED RAPID TRANSIT

North/South Corridor Project

Natural Resources Report

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VIA Advanced Rapid Transit

North/South Corridor Project

Natural Resources Report

Prepared for:

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ACRONYMS

Acronym/Abbreviation	Definition
ART	Advanced Rapid Transit
BFZ	Balcones Fault Zone
BGEPA	Bald and Golden Eagle Protection Act
CWA	Clean Water Act
EO	Executive Order
EOs	Element Occurrences
ESA	Endangered Species Act of 1973
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
IPAC	Information for Planning and Consultation (web tool by the United States Fish and Wildlife Service)
IRT	Information Request Tool (web tool by Texas Parks and Wildlife Department)
MBTA	Migratory Bird Treaty Act of 1918
N/S	North/South
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NWI	National Wetland Inventory
RTEST	Rare, Threatened, and Endangered Species (web tool by the Texas Parks and Wildlife Department)
SGCN	Species of Greatest Conservation Need
SWP3	Stormwater Pollution Prevention Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission for Environmental Quality
TEAM	Texas Ecosystem Analytical Mapper (web tool by the Texas Parks and Wildlife Department)
TPWD	Texas Parks and Wildlife Department
TxNDD	Texas Natural Diversity Database (records maintained by Texas Parks and Wildlife Department)
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

Acronym/Abbreviation	Definition
USGS	United States Geological Survey
VIA	VIA Metropolitan Transit
WOTUS	Waters of the United States

1. INTRODUCTION

The Federal Transit Administration (FTA) has initiated National Environmental Policy Act (NEPA) compliance for VIA Metropolitan Transit's (VIA) North/South (N/S) Advanced Rapid Transit (ART) Project. FTA has determined that the Project, an approximately 12-mile bus rapid transit line, locally known as ART, in San Antonio, Texas is a federal undertaking subject to NEPA. The project comprises 75 percent dedicated transit lanes and 25 percent mixed traffic operations and would include 26 branded stations with off-board fare collection, next bus messaging, public announcement systems, bike parking, and safety features such as security cameras and lighting. This Natural Resources Report describes regulatory requirements, existing conditions, and potential impacts to natural resources including water, geologic, and rare, threatened, and endangered resources. Appendix A includes a project location map.

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.

The team assessed the project's compliance with the water resources-related regulations that could be applicable to this project, including:

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

2.2 Methods

The project area for review of water resources encompasses the existing right-of-way within the project limits as well as those areas abutting the right-of-way. To determine the potential impacts on water resources within the project area, the team conducted desktop and field surveys. 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 Web Soil Survey tool, United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), and the proposed project design were reviewed as part of the desktop survey. The information gathered through the desktop survey was then verified by the team during the site visit by walking the project area. The site visit for the field survey occurred on March 1, 2022.

2.3 Description of Existing Conditions

There are six streams that cross the project area, and all belong to the San Antonio River Basin. The San Antonio River basin starts in the Texas Hill Country in Kerr and Medina counties and extends 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 two locations, is the most important river within the basin and flows 240 miles from Bexar County southwards to Refugio County (San Antonio River Authority, 2022). The river is fed by spring waters from the Edwards Aquifer. 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 (San Antonio River Authority, 2022). The northern portion of the proposed project along San Pedro near I-410 abuts the Edwards Aquifer Transition Zone (Edwards Aquifer Map in Appendix B). The transition zone is a strip of land where limestone features on the surface that are not part of the Edwards Aquifer, are permeable enough for surface water to potentially reach underground limestone features that are a part of the Edwards Aquifer.

The locations of the six streams, which were identified within the project area through NHD (NHD Map in Appendix B) and field-verified by team, include the following:

- An unnamed, channelized, intermittent stream crosses Isom Road just southwest of Sahara Drive
- An unnamed, channelized, intermittent stream crosses San Pedro Avenue just south of Sprucewood Lane
- Olmos Creek (perennial) crosses San Pedro Avenue just north of Basse Road through an existing channel
- The San Antonio River (perennial) crosses Navarro Street and North Mary's Street just north of Convent Street through an existing channel
- Two unnamed, perennial tributaries to the San Antonio River that are part of the River Walk Park cross Navarro Street and N. Mary's Street just north of West Crockett Street and just south of West Market Street through existing channels

The NWI data depicted riverine wetland types at all water crossings within the project area (NWI Map in Appendix B). However, during field survey, the team did not observe wetlands within the project area.

FEMA floodplains data showed that there are base (100-year) floodplains that cross the project area (Floodplains Map in Appendix B).

2.4 Potential Impacts

2.4.1 Long-term Operational Impacts

There would be no anticipated impacts to any of the streams identified within the project area because no work is proposed at water crossings. The proposed project is not anticipated to impact any regulated wetlands, given no wetlands were observed within the project area.

Overall, the project is not anticipated to involve any regulated activities within any WOTUS, including wetlands. A permit from the United States Army Corps of Engineers (USACE) under Section 404 of the CWA is not anticipated. 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 proposed project work 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 proposed work. Thus, the project is not anticipated to require any authorization or permitting under the Rivers and Harbors Act of 1899.

The project is subject to EO 11988 - Floodplain Management due to the floodplains which cross the project area (Floodplains Map in Appendix B). However, the proposed project would not involve a "significant encroachment" of the floodplains because it meets the following criteria outlined in the EO 111988:

- The proposed project would not have a significant potential to interrupt or terminate transportation facilities.
- The proposed project would not have a significant risk to or significant adverse impact on natural and beneficial floodplain values.
- The proposed project is not anticipated to increase the potential for property loss or increase the potential for hazard to life due to proposed project activities

Given the minimally disruptive nature of proposed project activities, the Edwards Aquifer Transition Zone, groundwater, and overall water quality are also not anticipated to be significantly impacted. Further, the proposed project is not anticipated to involve regulated activities related to regulated petroleum storage tanks, and therefore, requires no further coordination with TCEQ regarding the project's location in the Transition Zone.

2.4.2 Short-term Construction Impacts

The proposed project activities mostly involve restriping efforts with minimal construction taking place on previously disturbed or paved areas. There is a small potential for these construction activities to temporarily impact water quality. However, mitigation measures will 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 developed to ensure that the proposed project would comply with Section 402 of CWA and to prevent any temporary impacts to water quality. SWP3 mitigation measures 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.

3. GEOLOGIC ASSESSMENT

3.1 Regulatory Requirements

As part of the environmental review process, geologic and soil conditions were assessed within the project area. The Farmland Protection Policy Act (FPPA) requires projects to reduce to the extent practical the conversion of agricultural land uses to nonagricultural land uses. Agricultural land is identified, in part, by identifying prime, unique, statewide important or locally important farmlands and soils. The identification of unique geologic features and soil conditions is also required because portions of Karst Zones 2 and 3, which are karst regions that have a probability of containing suitable habitat for rare invertebrate species, cross the project area (Veni, 2002). These rare invertebrate species are protected under the Endangered Species Act of 1973 (ESA), which protects all federally listed endangered or threatened species and their critical habitats. The TCEQ also requires that the discovery of any new geologic features be reported to them for evaluation and coordination. Additionally, the proposed project would be partially located within the Edwards Aquifer Transition Zone, which requires the project to comply with the Edwards Aquifer Rules.

3.2 Methodology

The project area for review of water resources encompasses the existing right-of-way within the project limits as well as those areas abutting the right-of-way. On March 2, 2022, the team completed a site reconnaissance of the project area in general accordance and methodology described in the TCEQ's 2004 *Instructions to Geologists for Geologic Assessments* (see the TCEQ Geologic Assessment Form and its attachments in Appendix C). The TCEQ Form is a standardized checklist for the field geologist to use as part of any geologic assessment. Please note that this Geologic Assessment section of the report serves as Attachment C for the TCEQ Form. The Geologic Assessment of the project area was completed by a Texas Licensed Professional Geologist (#15113).

The geologist drove the right-of-way north and south for a high-level view. The geologist looked for outcrops and other easily recognizable geologic features. The geologist then traversed the existing right-of-way north and south on foot to look for any geologic features. At the time of the Geologic Assessment, the weather conditions were sunny, approximately 70° Fahrenheit with high visibility. There were no areas of ponding or pooling liquids and no areas with other obstacles that prevented a full visual inspection of the project area.

3.3 Description of Existing Conditions

3.3.1 Geology

Much of the surface of the project area consists of an existing roadway running in a generally north-south direction with east-west roadways at major and minor intersections. The roadways include associated infrastructure such as sidewalks, bus stations, and a railroad crossing within the right-of-way. Other infrastructure along the corridor includes manmade features such as drainage culverts, utilities (e.g., electric and telephone poles, telephone/cable access manholes, meters), water and gas meters, and underground sewer. Most of the project area is covered by pavement, ornamental brick roadways, sidewalks, and urban fill soils for grasses. In the project area, there is little evidence of karstic limestone rocks at the surface. The little outcropped karstic limestone that is present at the surface adjacent to the right-of-way is on the northeast corner of the intersection of San Pedro Avenue and West Dewey Place. This appeared to be Austin Chalk overlain unconformably (in a non-uniform, undulating depositional manner) by Pecan Gap Chalk. Of note, this outcrop is situated within the proximity or on one of four

identified faults that trend northeast-southwest within the project area. **Appendix C** contains the **Geologic Map** that depicts the dominant geologic formations and faults described below.

3.3.1.1 Formations

There are four dominant geologic formations within the project area: Fluviatile terrace deposits, Navarro Group and Marlbrook Marl, Pecan Gap Chalk, and the Austin Chalk formations (Barnes, V.L., 1981).

The Fluviatile terrace deposits are the youngest formation within the project area. These Quaternary deposits are the uppermost features within the vicinity of Olmos Creek and dominate the project area south of the intersection of San Pedro Avenue and West Elmira Street to the south beyond the limits of the project area. The Fluviatile terrace deposits in this area of Bexar County are generally gravel, limestone, dolomite, and chert. The depositional features include increasing amounts of sand, silt, and clay toward the southeast. Typically, in this area, the low terraced Fluviatile deposits are above flood level along entrenched streams, point bars, oxbows, and abandoned channel segments.

The Navarro Group and Marlbrook Marl are the second youngest formation within the project area. The upper portions of the Navarro Group and Marlbrook Marl are known to be up to 580 feet thick and are predominantly marl, clay, sandstone, and siltstone. Certain areas are known to be glauconitic and contain concretions of limonite and siderite with some concretions of siliceous limestone 2 to 10 feet in diameter. The sandstone beds within this formation have little lateral continuity. The lower portions are dominated by montmorillonitic, unctuous clays that weather to clayey soils. Within Bexar County, the maximum formation thickness of the lower portions of the Navarro Group and Marlbrook Marl is approximately 400 feet.

Although local faulting may result in angular nonconformities and disconformities, the Pecan Gap Chalk is typically situated below the Navarro Group and Marlbrook Marl within Bexar County. Within the project area, the Pecan Gap Chalk is situated between two, northeast-southwest trending faults that separate the formation from the Navarro Group and Marlbrook Marl formation and the Austin Chalk formation. The Pecan Gap Chalk is composed primarily of chalk and chalky marl and becomes more calcareous westward. This formation is seldom exposed and frequently associated with the more dominant Austin Chalk formation.

The Austin Chalk formation is briefly exposed adjacent to the right-of-way on the northeast corner of the intersection of San Pedro Avenue and West Dewey Place near San Pedro Springs Park along one of the four known faults within the right-of-way. The Austin Chalk formation is primarily chalk and marl, and the chalk is mostly microgranular calcite with some bentonitic seams. Pyrite nodules feathering to limonite is common. This formation tends to have occasional beds with large-scale cross-stratification. The Austin Chalk formation is locally fossiliferous. Bivalve fossils were observed by the team within the outcrop adjacent to the right-of-way. The maximum thickness is approximately 350 feet to 580 feet. Of importance, the Austin Chalk formation is locally known to be cavernous. Karstic cave features are known to exist at the adjacent San Pedro Springs Park (Reddell, James R., and Orion Kner, 1962).

3.3.1.2 Faulting

Regionally, Bexar County is separated into two distinct areas along the Balcones Fault Zone (BFZ). The Edwards Plateau is on the upthrown (upper blocks of the fault zone) side of the BFZ, and the Coastal Plain is on the downthrown side (Arnow, Ted, 1959). The project area is approximately located within the downthrown blocks (lower blocks of the fault zone) within the Coastal Plain, which is characterized by fault blocks comprised of marled limestones, clay, and poorly consolidated sands associated with ancient transgressive and regressive sea sequences toward the Gulf of Mexico.

There are four identified faults within the project area (Barnes V.L., 1981). The faults typically strike northeastward and dip southeast toward the Gulf of Mexico. The following is a summary of the four faults from north to south along San Pedro Avenue within the project area.

- The northernmost fault is an approximately 3.4-mile-long normal fault extending from northeast to southwest that passes through the project area near San Pedro Avenue and Ave Maria Drive.
- The next fault is an approximately 5.5-mile-long normal fault extending north-northeast to south-southwest and passes through the project area near San Pedro Avenue and Clower close to VIA bus stop #67746.
- The next fault is an approximately 3.4-mile-long normal fault extending north-northeast to south-southwest and passes through the project area near San Pedro Avenue between West Mulberry Street and West Huisache Street close to VIA bus stop #27246.
- The southernmost fault is an approximately 2.7-mile-long unspecified fault extending from northeast to southwest that passes through the project area near San Pedro Avenue close to VIA bus stop #47356.

There was little evidence that recharge of the Edwards Aquifer is enhanced through any of the features observed within the project area during the field survey. Since the entire project area has been built up with urban improvements, there was no visual evidence of faulting within the project area. A portion of the San Pedro Avenue is a bridge over Olmos Creek. Based on the scope of this Geologic Assessment, the team did not inspect the areas below the bridge within the Olmos Creek floodplain. However, from within the existing right-of-way, the team did not observe any fractures faults or recharge features from the San Pedro Avenue bridge over Olmos Creek. The area was heavily vegetated at the time of the site inspection on March 2, 2022

3.3.2 Soils

According to the United States Department of Agriculture (USDA) Web Soil Survey, the project area contains the soils described below (see **Appendix C** for the **Soils Map**). None of the soils encountered meet the USDA definition of a hydric soil. Hydric soils are formed under flooded or saturated conditions long enough for during the growing season to develop anaerobic conditions in the upper portions of that soil unit (USDA Web Soil Survey).

Austin silty clay, 1 to 3 percent slopes (AuB): This soil occupies summits and shoulders and occurs on interfluves, which are narrow and elongated ridges commonly found between valleys carved by separated streams. Slopes are generally one to three percent. The slopes are linear and convex and form from residuum weathered from chalk of Cretaceous-aged parent materials. The surface layer is typically silty clay from surface to approximately 29 inches and is generally underlain by bedrock. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Austin silty clay, 2 to 5 percent slopes (AuC): This soil occupies summits and shoulders and occurs on interfluves. Slopes are generally two to five percent. The slopes are linear and convex and form from residuum weathered from chalk of Cretaceous-aged parent materials. The surface layer is typically silty clay from surface to approximately 29 inches and is generally underlain by bedrock. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Brackett gravelly clay loam, 3 to 12 percent slopes (BrD): This soil occupies summits, shoulders, backslopes, and footslopes and occurs on interfluves and sideslopes. Slopes are generally three to twelve percent. The slopes are linear and convex and form from residuum weathered from limestone of Cretaceous-aged parent materials. The surface layer is typically gravelly clay loam from surface to five

inches, clay loam from five to sixteen inches, and is generally underlain by bedrock. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Whitewright-Austin complex, 1 to 5 percent slopes (BsC): This soil occupies summits and shoulders and occurs on interfluves. Slopes are generally one to three percent. The slopes are convex and form from residuum weathered from the Cretaceous-aged Austin Chalk formation. The surface layer is typically clay loam from surface to approximately six inches, silty clay from six to fifteen inches, and is generally underlain by bedrock. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Heiden clay, 3 to 5 percent slopes (HnC2): This soil occupies ridges and occurs on backslopes and side slopes. Slopes are generally three to five percent. The slopes are convex and form from clayey residuum weathered from mudstone parent materials. The surface layer is typically clay that extends to thicknesses greater than 80 inches. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Heiden-Ferris complex, 5 to 10 percent slopes, severely eroded (HoD3): This soil occupies ridges and occurs on backslopes and side slopes. Slopes are generally three to five percent. The slopes are convex and form from clayey residuum weathered from clayey shale of either Eagleford shale or Taylor marl. The surface layer is typically clay that extends to thicknesses greater than 80 inches. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Houston Black clay, 1 to 3 percent slopes (HsB): This soil occupies ridges and occurs on summit and shoulder interfluves. Slopes are generally one to three percent. The slopes are generally convex or linear and form from clayey residuum weathered from calcareous mudstone of Upper Cretaceous-aged parent material. The surface layer is typically clay that extends to thicknesses greater than 80 inches. This soil is moderately well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Houston Black clay, 3 to 5 percent slopes (HsC): This soil occupies ridges and occurs on the backslope and sideslopes of ridges. Slopes are generally three to five percent. The slopes are generally convex and form from clayey residuum weathered from calcareous mudstone of Upper Cretaceous-aged parent material. The surface layer is typically clay that extends to thicknesses greater than 80 inches. This soil is moderately well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Branyon clay, 0 to 1 percent slopes (HtA): This soil occupies stream terraces. Slopes are generally zero to one percent. The slopes are generally linear and convex and form from calcareous clayey alluvium derived from mudstones of Pleistocene-aged parent material. The surface layer is typically clay that extends to thicknesses greater than 80 inches. This soil is moderately well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Branyon clay, 1 to 3 percent slopes (HtA): This soil occupies stream terraces. Slopes are generally one to three percent. The slopes are generally linear and convex and form from calcareous clayey alluvium derived from mudstones of Pleistocene-aged parent material. The surface layer is typically clay that extends to thicknesses greater than 80 inches. This soil is moderately well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Houston Black gravelly clay, 1 to 3 percent slopes (HuB): This soil occupies ridges and occurs on the summits and shoulders of interfluves. Slopes are generally one to three percent. The slopes are generally convex and linear and form from clayey residuum weathered from calcareous mudstone of Upper Cretaceous-aged parent material. The surface layer is typically clay that extends to thicknesses

greater than 80 inches. This soil is moderately well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Lewisville silty clay, 1 to 3 percent slopes (LvB): This soil occupies stream terraces. Slopes are generally one to three percent. The slopes are generally linear and convex and form from calcareous clayey alluvium derived from mudstone. The surface layer is typically silty clay that extends to thicknesses greater than 80 inches. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Patrick soils, 1 to 3 percent slopes (PaB): This soil occupies paleoterraces, which are typically erosional features that retain the surface and alluvial origin deposits but do not grade in a manner consistent with present-day drainage patterns. Slopes are generally one to three percent. The slopes are generally convex and form from clayey alluvium of Quaternary age derived from mixed sources and/or sandy alluvium of Quaternary age derived from mixed sources. The surface layer is typically clay loam from surface to approximately 17 inches below grade, and very gravelly sands from 17 inches to 60 inches below grade. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Eckrant very cobbly clay, 5 to 15 percent slopes (TaC): This soil occupies ridges and occurs on the backslopes and side slopes. Slopes are generally five to fifteen percent. The slopes are generally linear and convex and form residuum weathered from limestone parent materials. The surface layer is very cobbly clay from surface to approximately 12 inches below grade before reaching bedrock. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Eddy gravelly clay loam, 1 to 8 percent slopes (Tb): This soil occupies ridges and occurs on the summits and shoulders of interfluves. Slopes are generally one to eight percent. The slopes are generally convex and form residuum weathered from Austin Chalk parent materials. The surface layer is gravelly clay loam to depths of four inches before reaching bedrock. This soil is well drained, and the depth to water table is more than 80 inches. This soil does not meet hydric criteria.

Tinn and Frio soils, 0 to 1 percent slopes (Tf): This soil occupies floodplains and are typically parallel to and slope toward water courses. The slopes are linear and form from calcareous loamy and/or clayey alluvium from Quaternary- and Cretaceous-aged parent materials derived from mixed sources. The surface layer is variable ranging to from less than one inch to more than 80 inches. This soil is moderately well drained, and the depth to water table is more than 80 inches.

During field survey, the team verified that the soil resembled the descriptions in the soil surveys obtained through the USDA's Web Soil Survey where soils were exposed within the project area. Overall, the proposed project area is completely contained within an urbanized area as determined by the United States Census Bureau. During field survey, the project team did not identify any farmlands or other agricultural uses.

3.4 Potential Impacts

3.4.1 Long-term Operational Impacts

3.4.1.1 Geologic Features

The proposed project is not anticipated to impact any known cave features of the San Pedro Springs Park, because the park is located outside of the project area. Also, given that the team did not observe any geologic features within the project area that could be impacted, the proposed project's potential for long-term operational impacts to geologic features is low.

3.4.1.2 Soils

Due to the minimally disruptive nature of the proposed project activities in an already highly disturbed setting, the proposed project's potential for impacts to native soils is low. Moreover, the proposed project would not be anticipated to cause any impacts to farmlands, including prime, unique, statewide important or locally important farmlands and soils since there were none identified within the project area.

3.4.2 Short-term Construction Impacts

3.4.2.1 Geologic Features

The existing urban development within the project area predates comprehensive records, and karstic limestone features are known to exist within the region. Therefore, there is a small potential for encountering undocumented karstic limestone features during construction.

3.4.2.2 Soils

During the construction phase, temporary disturbance of native soils within the project area may occur.

3.5 Recommended Mitigation Measures

3.5.1 Long-Term Operational Mitigation Measures

Given no significant impacts to geologic features or native soils, there are no long-term operational mitigation measures recommended.

3.5.2 Short-Term Construction Mitigation Measures

3.5.2.1 Geologic Features

If karstic limestone features are discovered during construction, work should stop, and the TCEQ should be notified immediately so that the features can be evaluated.

3.5.2.2 Soils

Disturbance to native soils would be minimized by limiting construction activities to already disturbed areas where no native soils are exposed, to the extent practicable.

4. SPECIES ANALYSIS

4.1 Regulatory Requirements

The N/S ART Project is required to comply with the ESA, Migratory Bird Treaty Act of 1918 (MBTA), Bald and Golden Eagle Protection Act (BGEPA), and EO 13112—Invasive Species. The ESA protects all federally listed endangered or threatened species and their critical habitats. The MBTA 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. Similarly, the BGEPA prohibits the "taking" of any Bald or Golden Eagles, including their parts, nests, or eggs, unless the Secretory 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 (USFWS). EO 13112 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.

Texas state law also prohibits the harm to state-listed species as codified in Chapters 67 and 68 of the Texas Parks and Wildlife Code and Sections 65.171-65.176 of Title 31 of the TAC.

The City of San Antonio Unified Development Code Chapter 35, Section 523 codifies the City's tree preservation ordinance. The ordinance provides protection for the City's existing significant and heritage trees.

4.2 Methods

The project area for review of protected species and critical habitat encompasses the existing right-of-way within the project limits as well as those areas abutting the right-of-way. To determine if the proposed project would affect or impact any protected species or critical habitats, the team used the USFWS Information for Planning and Consultation (IPAC) system to pull a list of federally endangered or threatened species that may occur within the project area and review whether any critical habitats occurred within project area. The IPAC system was also used to determine the migratory birds which could potentially occur within the project area and their breeding seasons. Furthermore, the team used the Texas Parks and Wildlife Department's (TPWD) Rare, Threatened, and Endangered Species of Texas (RTEST) tool to pull 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. To aid in the desktop survey for suitable species habitats, the team used TPWD's Texas Ecosystem Analytical Mapper (TEAM) tool to obtain a map shapefile and list of ecosystems within a 300-foot buffer of the project area. The team used TPWD's Texas Natural Diversity Database (TxNDD) Information Request Tool (IRT) to obtain a shapefile 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. Other credible sources such as NatureServe and Texas A&M University's Texas Breeding Bird Atlas were used to gather information on preferred habitat and range of protected species.

The team conducted a desktop survey of vegetation within the project area by reviewing Google Earth aerial imagery and data from TPWD's TEAM tool. On March 1, 2022, the team conducted a field survey through the project area, including visual inspection of potential suitable habitat with the project's existing right-of-way. The purpose of the field survey was to verify desktop survey data and gather on-the-ground data of vegetation and evidence of protected species.

The team used the information collected from the desktop and field surveys, supplemented with data collected from the geological and water resources surveys, to create maps and tables to determine the potential effects and impacts of the proposed project on protected species. The effect/impact determination for each federally or state-listed species was made by first considering if the vegetation, soils, and waters within the project area could provide suitable habitat for each species, then by considering if the proposed project activities could potentially affect or impact the suitable habitat. TxNDD's records of EOs were also taken into consideration. For SGCN species, the team made determinations 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 had 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 team took the presence of suitable habitat and proposed project activities into consideration when determining "take" calls for birds protected by the MBTA and BGEPA federal regulations.

During field survey, the team also looks for any signs of mowing and disturbance on grassy areas within the right-of-way.

4.3 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 Map in Appendix D).

The entire limits of the city of San Antonio 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.

The project area is located within a highly urbanized area. The desktop survey found that approximately 98 percent of the project area could be considered Urban High Intensity (impermeable paved surfaces with no vegetation) or Urban Low Intensity (mowed, maintained, and landscaped vegetated areas with some permeability). However, there was the potential for the occurrence of other ecosystems in select locations within project area such as Native Invasive: Deciduous Woodland or Texas Blackland Tallgrass Prairie (see Table 4-1).

Table 4-1 Desktop vs. Field-Verified Vegetation Summary Table

Ecosystems	TEAM* Vegetation (percent)	Field-Verified Vegetation (percent)
Barren	0.10	0.00
Native Invasive: Deciduous Woodland	0.71	0.00
Native Invasive: Juniper Shrubland	0.17	0.00
Open Water	0.06	0.00
Row Crops	0.19	0.00
Southeastern Great Plains Floodplain Forest	0.45	0.00
Texas Blackland Tallgrass Prairie	0.17	0.00
Urban High Intensity	54.54	87.23
Urban Low Intensity	43.60	12.77
Total	100.00	100.00

Source: TPWD's TEAM Data, 2022

The team's field survey verified that approximate 13 percent of the project area was Urban Low Intensity, and the remainder was Urban High Intensity. The team did not observe other ecosystems within the project area. The **Ecosystems Vegetation Map** in **Appendix D** depicts areas where Urban Low Intensity was identified during the field survey. Urban High Intensity is not depicted in the vegetation map since there was no vegetation observed in those paved and/or impermeable areas.

Areas within the project area that are vegetated include areas that are mowed, landscaped, or otherwise maintained. These vegetated areas, although small, could serve as potential habitat for some protected species. According to TxNDD, there are records of EOs within a 1-mile buffer of project area of for Correll's false dragon-head, eastern spotted skunk, western spotted skunk, plains spotted skunk, and Texas shiner. The **TxNDD Element Occurrence Map** in **Appendix D** depicts where within the project area records of occurrence have been found for these species.

There were several trees within the project area identified through desktop and field survey that could qualify as significant trees (measuring 6 inches or more for large trees; one truck of at least 10 inches or more for Ashe juniper, Huisache, Mesquite, Arizona ash, and Hackberry; and trunks of at least 5 inches for Texas Persimmon, Texas Redbud, Texas Mountain Laurel, Condalia, Possumhaw, and Hawthorne) or heritage trees (24 inches or more or at least one trunk of 12 inches or more for small species).

4.3.1 Federal and State Protected Species

According to USFWS IPAC, there are no critical habitats within the project area, but there are several federally listed species with potential for occurrence within the project area. The full **USFWS IPAC List** can be found in **Appendix D**. According to TPWD RTEST list, there are over a 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 D**.

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

4.3.2 Migratory Birds and Bald Eagles

According to the IPAC system, there were eight migratory birds that had the potential for occurrence within the project area. There was no suitable habitat within the project area for any of the eight migratory birds listed. According to the TPWD RTEST list for Bexar County, only the Bald Eagle had the potential for occurrence within the entire county. There was no suitable habitat within the project area for the bald eagle. The **MBTA and BGEPA Species Analysis Table** in **Appendix D** discusses the typical habitats and the explanation for habitat determinations within the project area in more detail.

4.3.3 Invasive Species

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

4.4 Potential Effects/Impacts

4.4.1 Long-term Operational Effects/Impacts

4.4.1.1 Vegetation

The proposed project could impact trees protected under the City of San Antonio's tree preservation ordinance due to the construction of sidewalks and stations and due to roadway realignment.

4.4.1.2 Federal and State Protected Species

The team made an effect and/or impact determination for federal and state protected species listed in USFWS and TPWD species lists, respectively. The only federally listed species that had a "may affect, but is not likely to adversely affect/adversely modify critical habitat" determination is the Monarch Butterfly. The team determined that all other species were to experience "no effect" or "no impact". Since the Monarch butterfly is a candidate for federal listing, it does not require coordination with the USFWS. The comprehensive table, named **Federal and State Listed Species Analysis Table**, with effect/impact determination calls can be found in **Appendix D**.

Impact determinations were also made for all the species designated by TPWD as SGCNs within Bexar County (see **TPWD RTEST List** in **Appendix D**). The following are only the SGCNs that had a "may impact" call.

- Woodhouse's toad (*Anaxyrus woodhousii*)
- Black-capped Vireo (*Vireo atricapilla*)
- Eastern spotted skunk (*Spilogale putorius*)
- Northern yellow bat (*Lasiurus intermedius*)
- Low spurge (*Euphorbia peplidion*)
- Osage Plains false foxglove (*Agalinis densiflora*)
- Parks' jointweed (*Polygonella parksii*)
- Sandhill woolywhite (*Hymenopappus carrizoanus*)
- 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 calls can be found in the **SGCNs Analysis Table** found in **Appendix D.**

4.4.1.3 Migratory Birds and Bald Eagles

The team determined that none of the birds protected under MBTA or BGEPA would be "taken" due to proposed project activities, because there was no suitable habitat within project area for the birds. The complete **MBTA and BGEPA Species Analysis Table** is provided in **Appendix D.**

4.4.1.4 Invasive Species

The long-term operational activities of the project could further the spread of invasive grasses.

4.4.2 Short-term Construction Effect/Impacts

4.4.2.1 Vegetation

No short-term construction impacts would be anticipated to vegetation or heritage trees due to the proposed project.

4.4.2.2 Federal and State Protected Species

Any 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: unintentional destruction of nest, den, or home; and injury, or death of an individual of the species. This includes the Monarch butterfly and the following SGCN species:

- Woodhouse's toad (*Anaxyrus woodhousii*)

- Black-capped Vireo (*Vireo atricapilla*)
- Eastern spotted skunk (*Spilogale putorius*)
- Northern yellow bat (*Lasiurus intermedius*)
- Low spurge (*Euphorbia peplidion*)
- Osage Plains false foxglove (*Agalinis densiflora*)
- Parks' jointweed (*Polygonella parksii*)
- Sandhill woolywhite (*Hymenopappus carrizoanus*)
- Tree dodder (*Cuscuta exaltata*)
- Wright's milkvetch (*Astragalus wrightii*)
- Plateau spot-tailed earless lizard (*Holbrookia lacerata*)
- Tamaulipan spot-tailed earless lizard (*Holbrookia subcaudalis*)

4.4.2.3 Migratory Birds and Bald Eagles

Construction activities are not anticipated to impact any of the species protected by the MBTA or the BGEPA within the project area, since there is no suitable habitat for those species.

4.4.2.4 Invasive Species

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

4.5 Recommended Mitigation Measures

4.5.1 Long-term Operational Mitigation Measures

4.5.1.1 Vegetation

To the extent practical, the proposed project team will refine design to avoid and/or minimize impacts to trees identified as significant and heritage trees under the City of San Antonio's tree preservation ordinance. If the design is unable to avoid impacts to protected trees, the project team will coordinate with the City of San Antonio and follow all applicable requirements.

4.5.1.2 Federal and State Protected Species

The potential long-term operational effects or impacts to the Monarch Butterfly, the candidate species and the twelve TPWD designated SGCNs would be mitigated through implementing the following recommended mitigation measures:

1. Seeds for native grasses should be spread on grassy areas within project area to help restore them in this region.
2. More native trees should be added to the landscaped areas within the project area.

The team will coordinate with TPWD for SGCNs which may be impacted by the project to determine potential best management practices for mitigating potential short-term harm. Any mitigation measures recommended by TPWD during coordination should also be implemented.

4.5.1.3 Migratory Birds and Bald Eagles

No mitigation measures for long-term effects/impacts are necessary to comply with MBTA or BGEPA since there is no suitable habitat for these protected species within project area.

4.5.1.4 Invasive Species

The mitigation measures recommended for the protection of federal and state protected species would also ensure the project complies with the EO 13112 on invasive species. They would help prevent further

spread of invasive species and aid in restoration of native species to the extent practicable in the long-term.

4.5.2 Short-term Constructions Mitigation Measures

4.5.2.1 Vegetation

During construction, trees identified as significant or heritage would be protected from harm related to construction activities.

4.5.2.2 Federal and State Protected Species

The potential short-term construction effects or impacts to the Monarch Butterfly, the candidate species and the twelve TPWD designated SGCNs would be mitigated through implementing the following recommended mitigation measures during construction:

1. Tree removal, especially removal of oak trees, palm trees, and other landscaped deciduous trees within the project area, should be avoided to the extent practicable for construction.
2. Disturbance (beyond regular mowing and maintenance of grassy areas) should be limited to those areas where new sidewalks or other paved facilities are proposed to be constructed.

The team will coordinate with TPWD for SGCNs which may be impacted by the project to determine potential best management practices for mitigating potential short-term harm. Any mitigation measures recommended by TPWD during coordination should also be implemented.

If karst features (e.g., caves, voids) are encountered during construction, the team would evaluate the void for the presence of karst invertebrate habitat using reconnaissance excavation and evaluation procedures outlined by USFWS protocols (2015). If a feature is determined to contain potential karst invertebrate habitat, presence/absence surveys would be conducted by a 10(a)(1)(A) permitted scientist. If a discovered feature is determined to be occupied or presumed occupied by a listed karst invertebrate, then VIA would stop work in the area and initiate formal consultation with USFWS.

4.5.2.3 Migratory Birds and Bald Eagles

No mitigation measures for short-term effects/impacts are necessary to comply with MBTA or BGEPA since there is no suitable habitat for these protected species within project area.

4.5.2.4 Invasive Species

The mitigation measures recommended for the protection of federal and state protected species would also ensure the project complies with the Executive Order (EO) 13112 on invasive species. They would help prevent further spread of invasive species and aid in restoration of native species to the extent practicable in the long-term.

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APPENDIX A GENERAL MAPS AND PHOTOLOG

Project Location Map

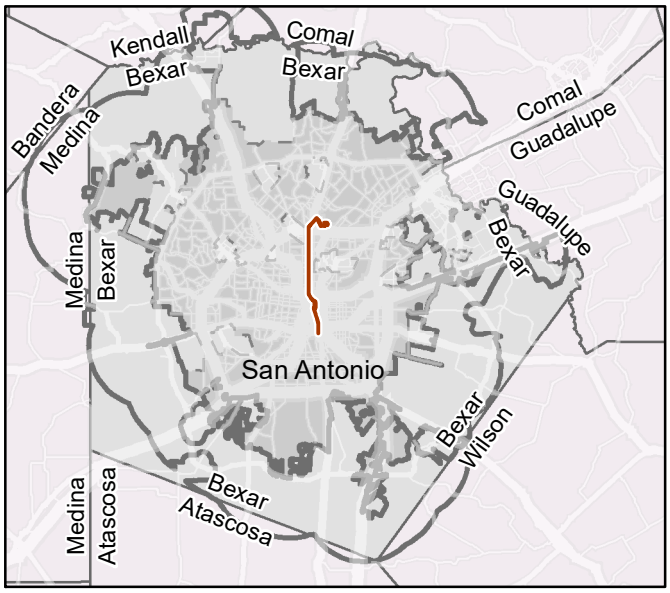
Topographic Map

Overall Photolog

Project Location Map

LEGEND

ART North/South Project Alignment



Sources: VIA (N/S proposed corridor and N/S Stations); TxDOT (city and county boundaries, roads, railroads); City of San Antonio (channels, central business district boundary)

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Topographic Map

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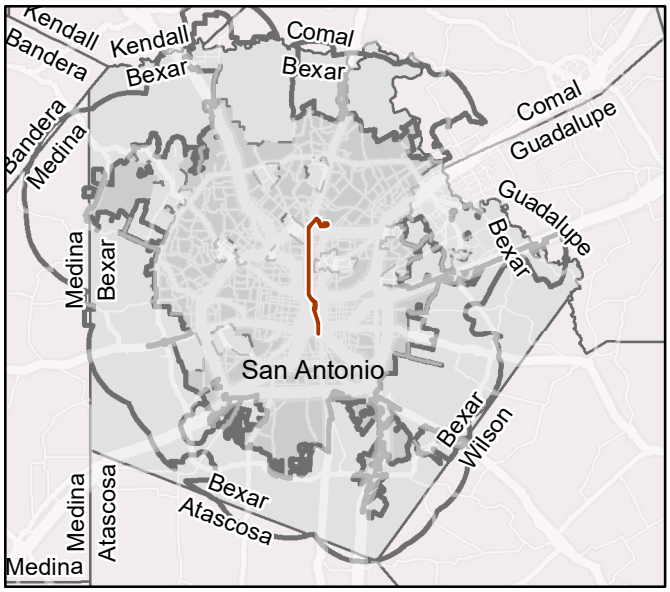
ART North/South Project Alignment



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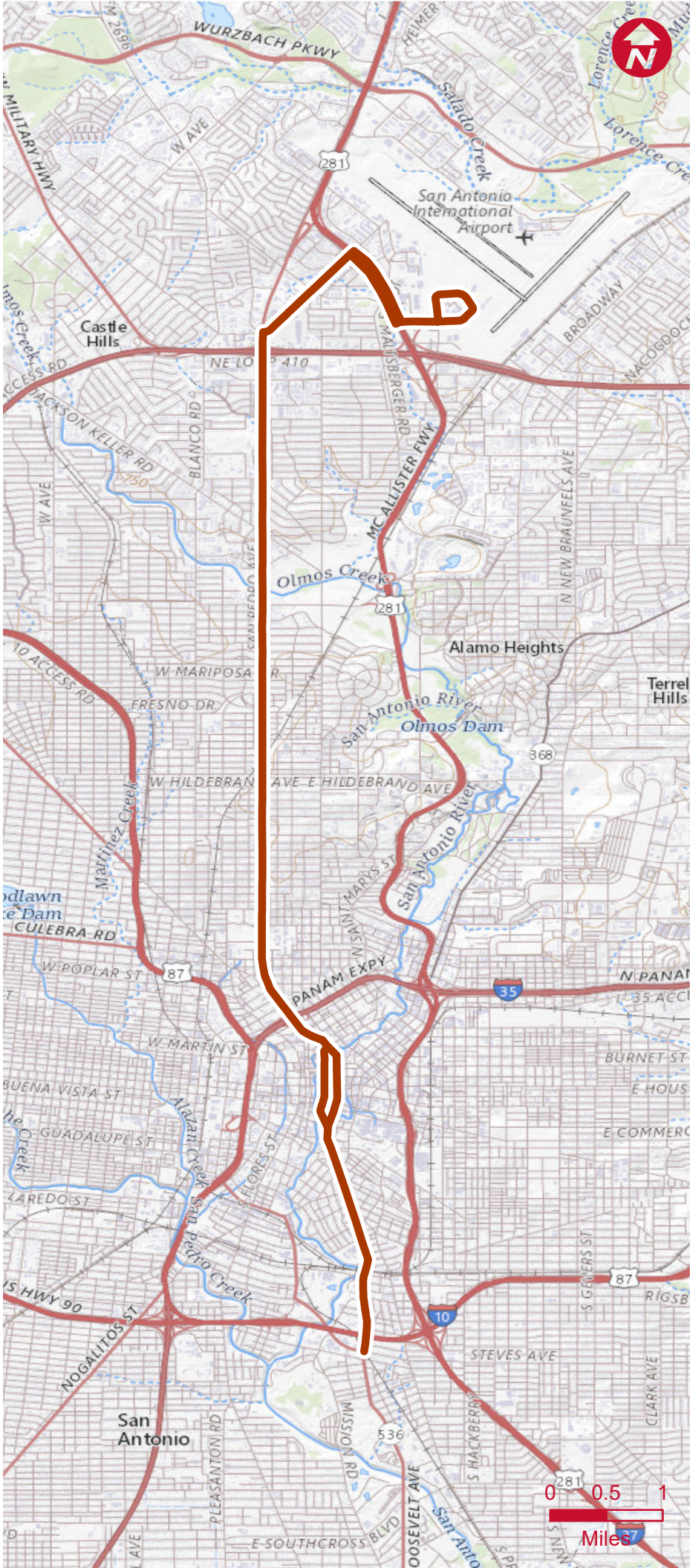


Natural Resources Photo Log

Photos taken during March 1st, 2022 Field Survey

Photo 1 – South terminus of the project area. Facing northwest. On Roosevelt Avenue located near intersection of Roosevelt Avenue and Steves Avenue.

Photo 2 – Near northeastern terminus of the project area. Facing southwest. On Isom Road located near the intersection of Oasis Street and Isom Road.

Natural Resources Photo Log

Photos taken during March 1st, 2021 Field Survey

Photo 3 – East terminus of the project area. Facing west. On Ramsey Road located near the intersection of East Ramsey Road and Jones Maltsberger Road.

Photo 4 – West of bridge at Olmos Creek. Facing north. On San Pedro Avenue located near the intersection of San Pedro Avenue and Basse Road.

Natural Resources Photo Log

Photos taken during March 1st, 2022 Field Survey

Photo 5 – East of bridge at San Antonio River crossing. Facing northeast. On North St. Mary's Street south of the intersection of Navarro Street and North St. Mary's Street.

Photo 6 – Maintained, and landscaped deciduous trees and mowed grasses within the median on West Woodlawn Avenue represent Urban Low Intensity. Facing east. At the intersection of San Pedro Avenue and West Woodlawn Avenue.

Photo 7 – General character of project area with mostly paved areas and some landscaped vegetation. Landscaped trees represent Urban Low Intensity. Facing north. On St. Mary's Street near the intersection of East Nueva Street, Navarro Street, and St. Mary's Street.

Photo 8 – Abandoned swallow's nest under the Interstate 10 bridge over Roosevelt Avenue within project area.

APPENDIX B WATER RESOURCES

Edwards Aquifer Map

National Hydrography Dataset Map

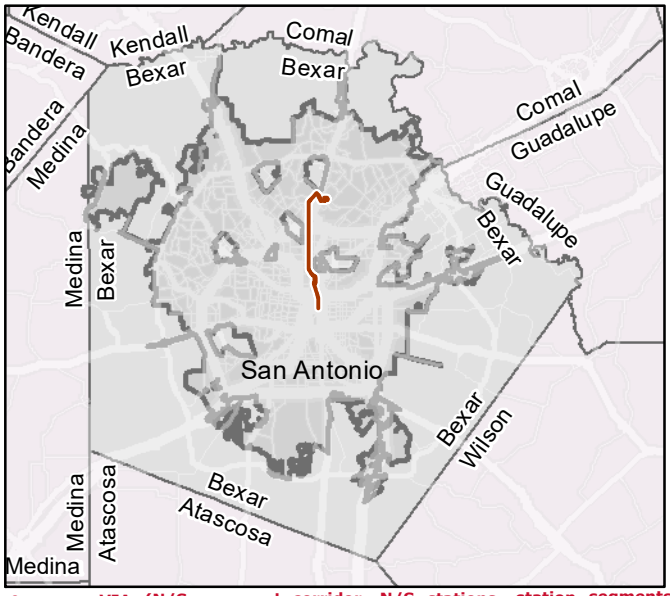
National Wetland Inventory Map

FEMA Floodplains Map

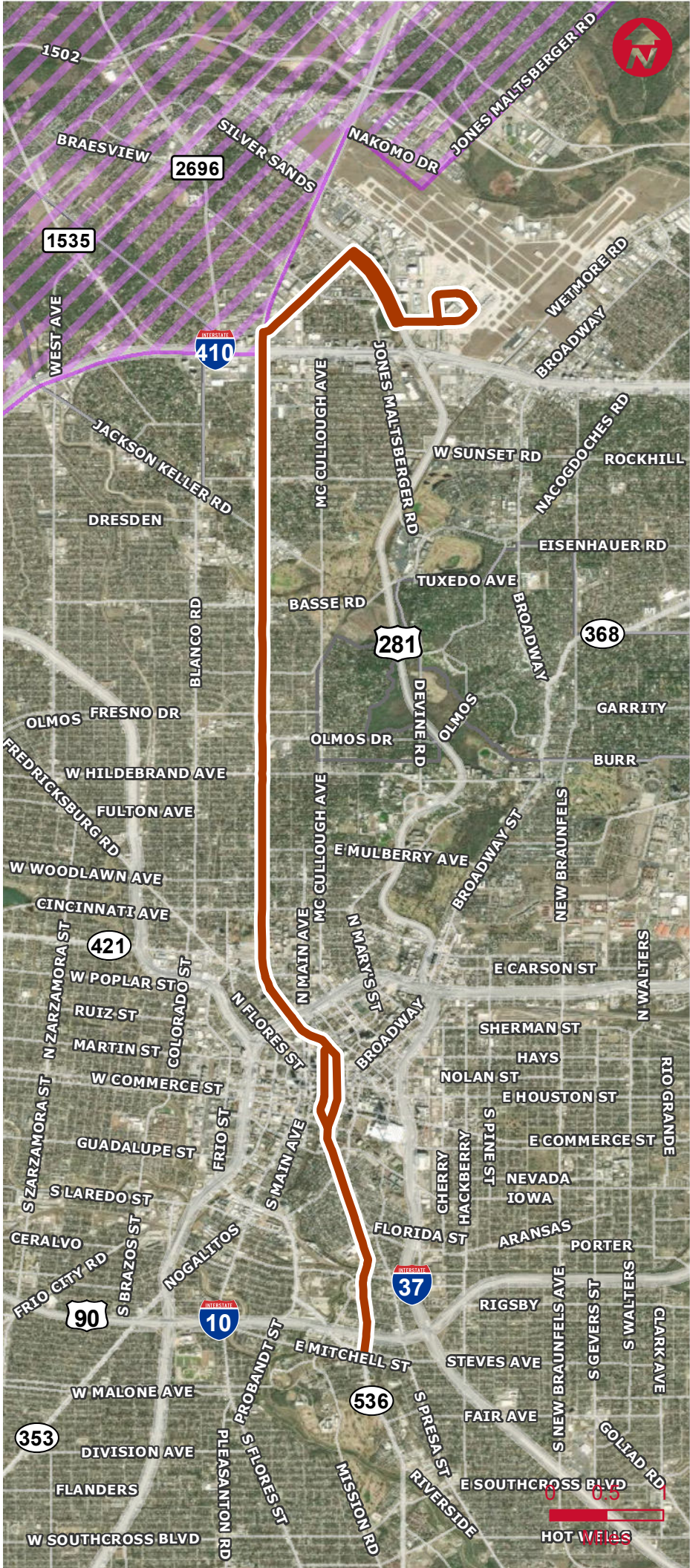
Edwards Aquifer Map

LEGEND

- ART North/South Project Alignment
- Edwards Aquifer Transition Zone



Sources : VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); TCEQ (Edwards aquifer)



National Hydrography Dataset Map

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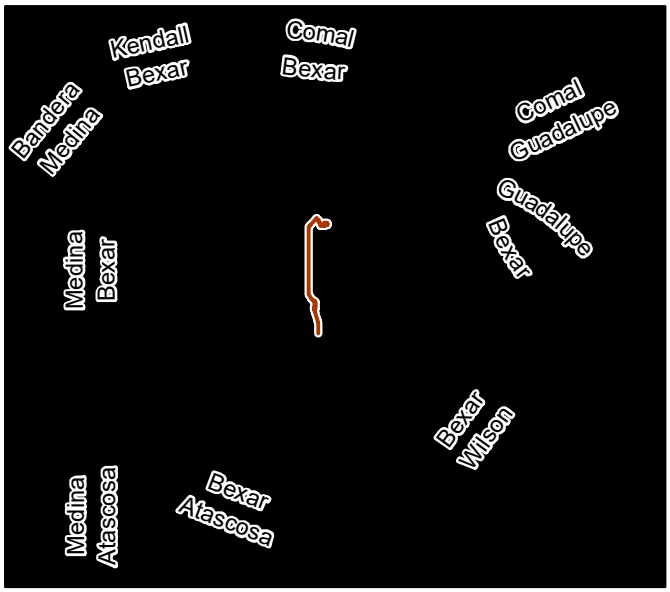
- ART North/South Project Alignment
- Flowline



Sources: VIA (N/S proposed corridor and N/S Stations); TxDOT (city and county boundaries, roads, railroads); City of San Antonio (channels, central business district boundary)

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National Wetland Inventory Map

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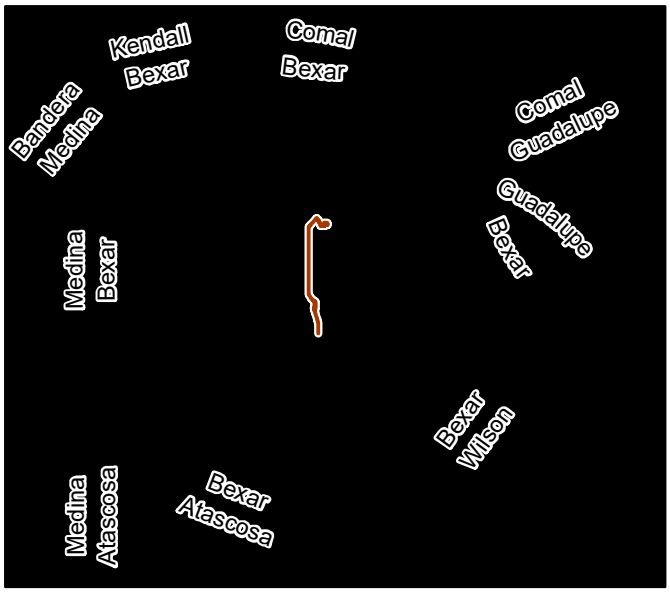
- ART North/South Project Alignment
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine



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Base (100-year) Floodplain Map

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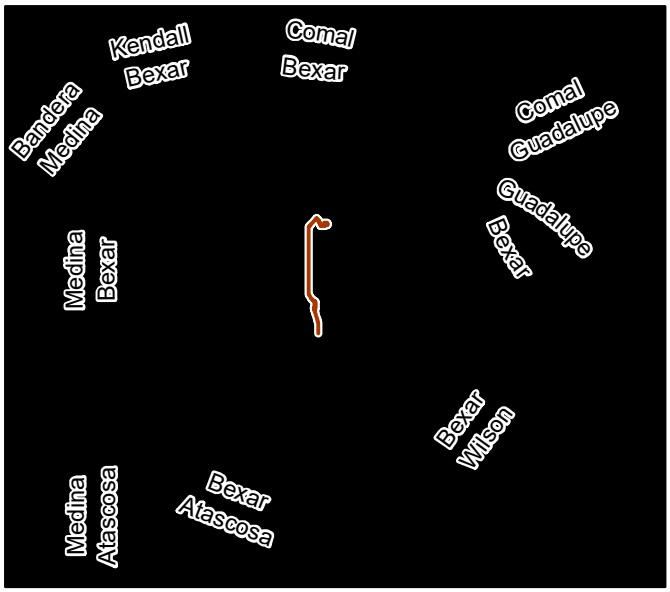
- ART North/South Project Alignment
- Base (100-year) Floodplain



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APPENDIX C GEOLOGIC ASSESSMENT

TCEQ Geologic Assessment Form

Table 1 – Soil Units, Infiltration Properties, and Thickness Table

Attachment A: Geologic Features Table

Attachment B: Stratigraphic Columns Table

Attachment D: Site Geologic Map and Soils Map

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Andrew Feigenbaum Telephone: 512-726-3836

Date: March 5, 2022 Fax: _____

Representing: WSP (Name of Company and TBPG or TBPE registration number) TBPG License No. 50561

Signature of Geologist:

Regulated Entity Name: n/a

Project Information

1. Date(s) Geologic Assessment was performed: March 2, 2022
2. Type of Project:

   ☐ WPAP ☐ AST
   ☐ SCS ☐ UST
3. Location of Project: Artesian within Edwards Aquifer

   ☐ Recharge Zone
   ☒ Transition Zone
   ☐ Contributing Zone within the Transition Zone

4. [X] **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. [X] Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
See attached table		

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.
B. Soils having a moderate infiltration rate when thoroughly wetted.
C. Soils having a slow infiltration rate when thoroughly wetted.
D. Soils having a very slow infiltration rate when thoroughly wetted.

6. [X] **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. [X] **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. [X] **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1”: 400'

   Applicant's Site Plan Scale: 1" = _____'
   Site Geologic Map Scale: 1" = _____'
   Site Soils Map Scale (if more than 1 soil type): 1" = _____'

9. Method of collecting positional data:

   [X] Global Positioning System (GPS) technology.
   [ ] Other method(s). Please describe method of data collection: _____

10. [X] The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. [X] Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☐ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

☒ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☐ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)

- ☐ The wells are not in use and have been properly abandoned.
- ☐ The wells are not in use and will be properly abandoned.
- ☐ The wells are in use and comply with 16 TAC Chapter 76.

☒ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

15. ☐ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

TABLE 1- SOIL UNITS, INFILTRATION CHARACTERISTICS & THICKNESS			
Soil Name	**Map Unit Symbol**	**Group***	**Thickness (feet)**
Austin silty clay	AuB/AuC	D	2.5
Brackett gravelly clay loam	BrD	D	1.5
Whitewright-Austin complex	BsC	D	1.25
Heiden clay	HnC2	D	6.6
Heiden-Ferris complex	HoD3	D	6.6
Houston Black Clay	HsB/HsC	D	6.6
Branyon clay	HtA/HtB	D	6.6
Houston Black gravelly clay	HuB	D	6.6
Lewisville silty clay	LvB	B	5.8
Patrick soils	PaB	B	5
Eckrant very cobbly clay	TaC	D	2.5
Eddy gravelly clay loam	Tb	D	0.25
Tinn and Frio soils	Tf	D	6.6

GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: VIA N/S CORRIDOR STUDY																	
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	

NO FEATURES IDENTIFIED WITHIN THE RIGHT OF WAY CONSIDERATIONS.

* DATUM:_____

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

ANDREW FEIGENBAUM, TX PG #15113

Date MARCH 21, 2022

Sheet 1 of 1

TCEQ-0585-Table (Rev. 10-01-04)

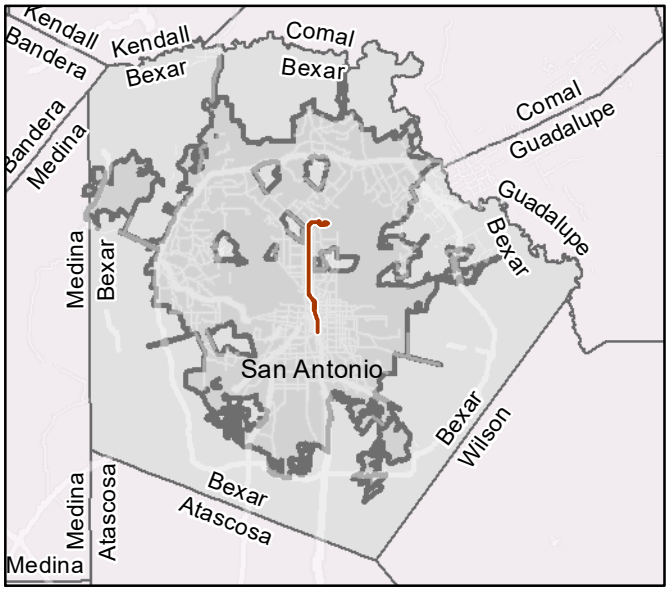
ATTACHMENT B- STRATIGRAPHIC COLUMNS

System	Series	Group	Stratigraphic Unit	Approx. Max Thickness (ft.)	Lithology
Quaternary	Recent & Pleistocene		Fluviatile terrace deposits	45	gravel, sand, silt, clays
Cretaceous	Gulfian	Taylor	Navarro Group and Marlbrook Marl	580	marl, clay, sandstone, and siltstone, tends to be glauconitic with concretions of limonite and siderite
			Pecan Gap Chalk	400	chalk and chalky marl
		Austin Group	Austin Chalk	580	chalk and marl,ledge forming, locally highly fossiliferous, locally known to be cavernous

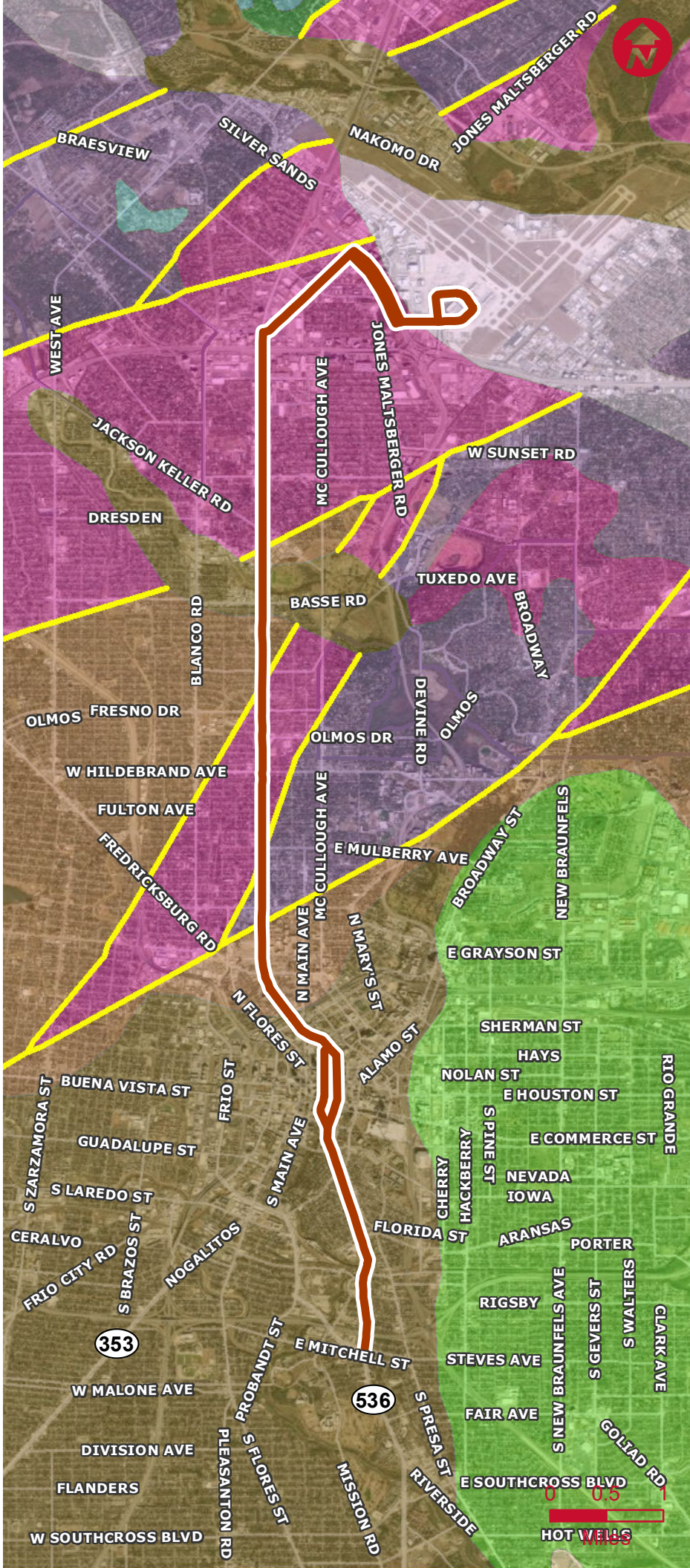
Geologic Map

LEGEND

- ART North/South Project Alignment
- Fault
- Austin Chalk
- Buda Limestone and Del Rio Clay, undivided
- Navarro Group and Marlbrook Marl, undivided
- Pecan Gap Chalk
- Midway Group, undivided
- Uvalde Gravel
- Leona Formation
- Terrace deposits
- Water



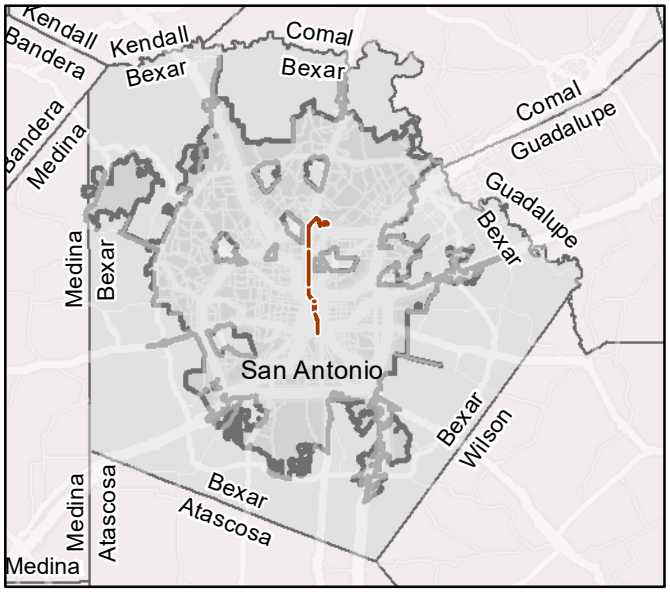
Sources: VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); USGS (faults, formations)



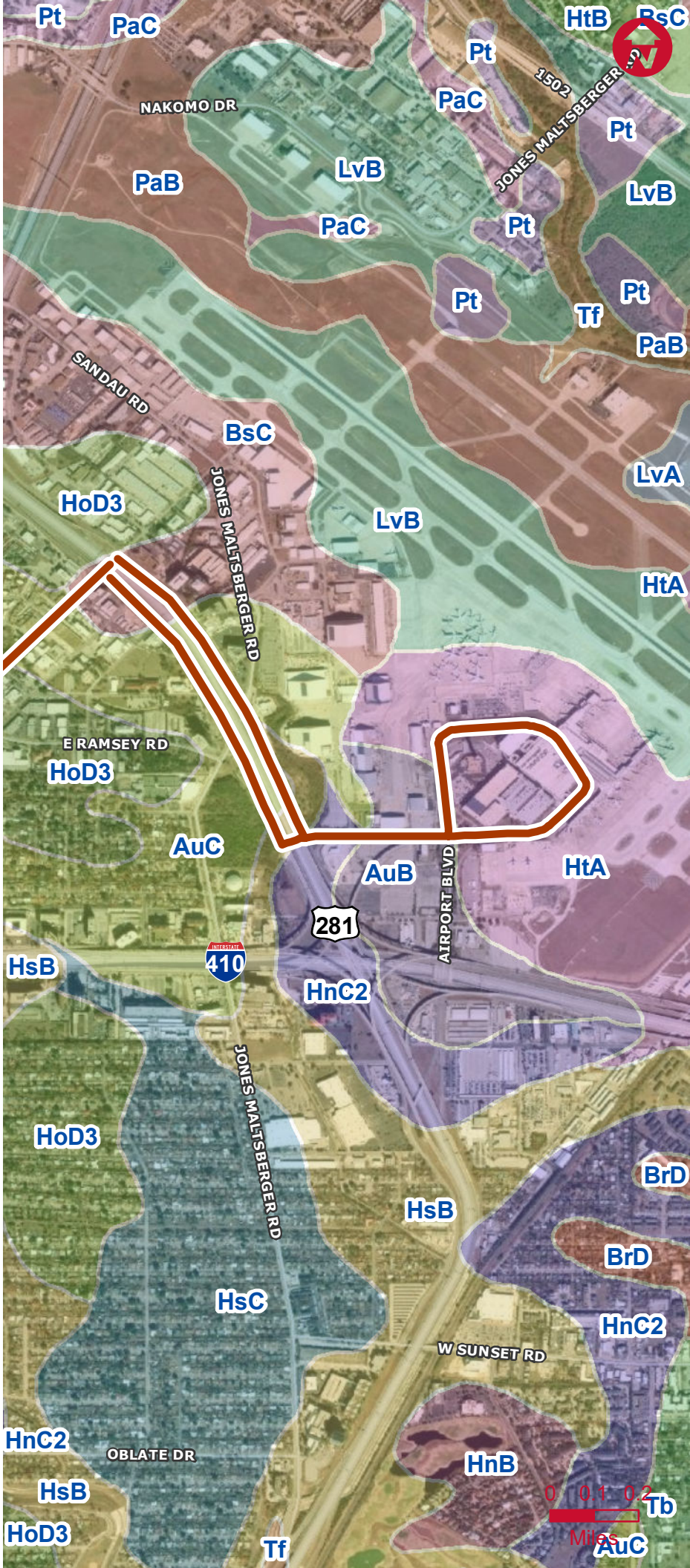
Soils Map

LEGEND

- ART North/South Project Alignment
- Austin silty clay, 1 to 3 percent slopes
- Austin silty clay, 2 to 5 percent slopes, moderately eroded
- Brackett gravelly clay loam, 3 to 12 percent slopes
- Branyon clay, 0 to 1 percent slopes
- Branyon clay, 1 to 3 percent slopes
- Eckrant cobbly clay, 1 to 8 percent slopes
- Eddy gravelly clay loam, 1 to 8 percent slopes
- Heiden clay, 1 to 3 percent slopes
- Heiden clay, 3 to 5 percent slopes, eroded
- Heiden-Ferris complex, 5 to 10 percent slopes, severely eroded
- Houston Black clay, 1 to 3 percent slopes
- Houston Black clay, 3 to 5 percent slopes
- Lewisville silty clay, 0 to 1 percent slopes
- Lewisville silty clay, 1 to 3 percent slopes
- Patrick soils, 1 to 3 percent slopes, rarely flooded
- Patrick soils, 3 to 5 percent slopes, rarely flooded
- Pits and Quarries, 1 to 90 percent slopes
- Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded
- Whitewright-Austin complex, 1 to 5 percent slopes



Sources: VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); NRCS (soils)



Soils Map

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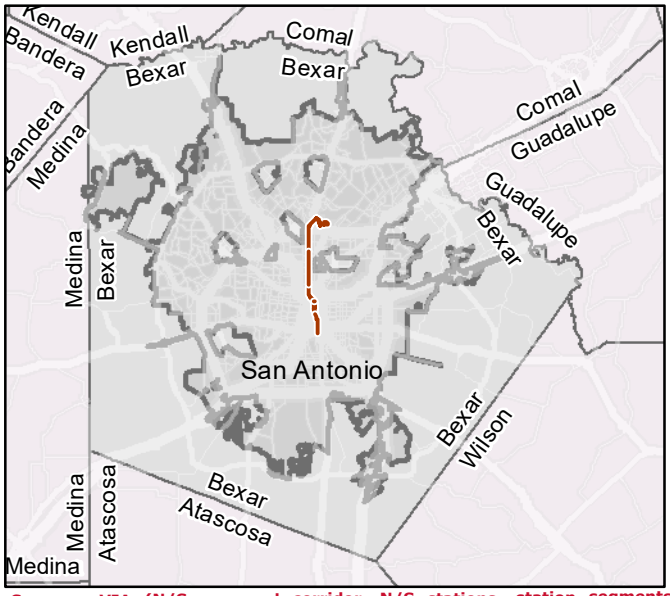
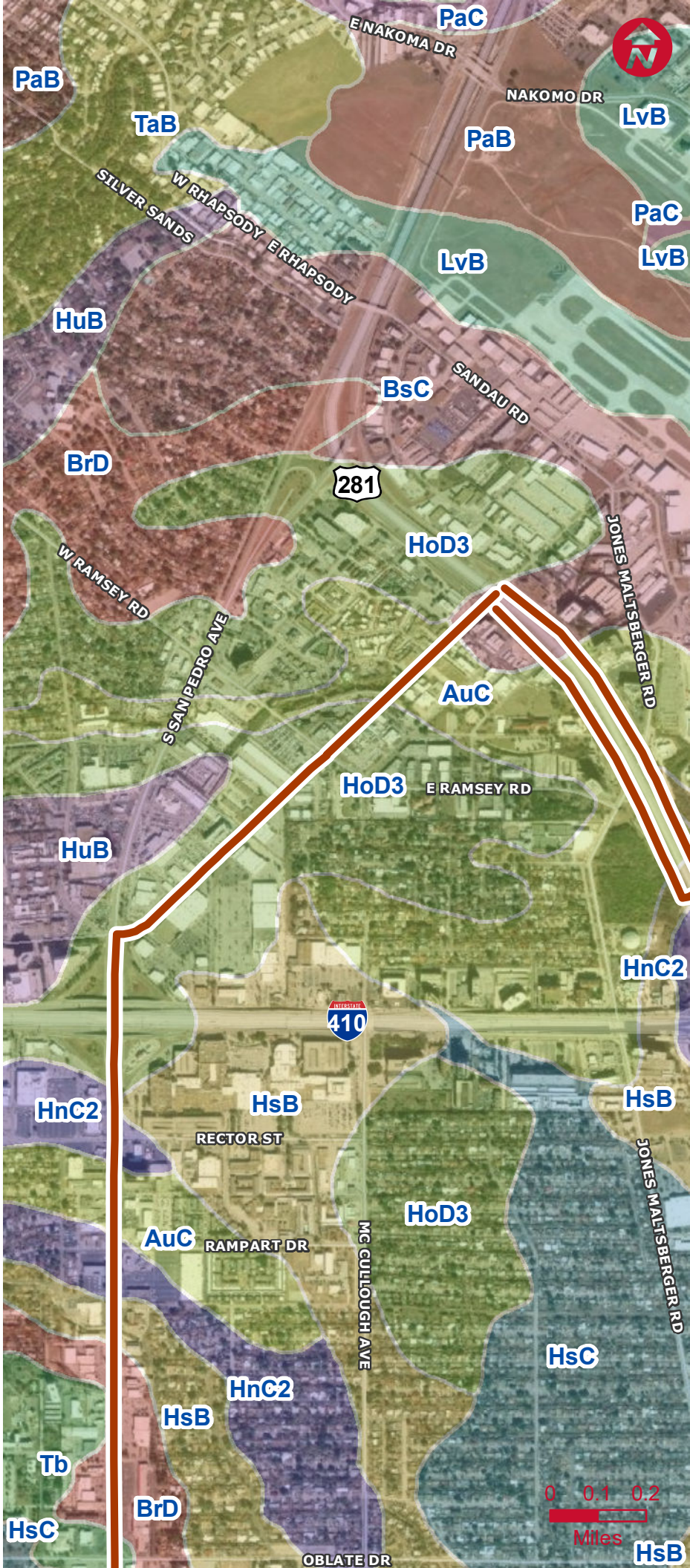
- Heiden-Ferris complex, 5 to 10 percent slopes, severely eroded
- Houston Black clay, 1 to 3 percent slopes
- Houston Black clay, 3 to 5 percent slopes
- Houston Black gravelly clay, 1 to 3 percent slopes
- Lewisville silty clay, 1 to 3 percent slopes
- Patrick soils, 1 to 3 percent slopes, rarely flooded
- Patrick soils, 3 to 5 percent slopes, rarely flooded
- Pits and Quarries, 1 to 90 percent slopes
- Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded
- Whitewright-Austin complex, 1 to 5 percent slopes



Sources: VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); NRCS (soils)



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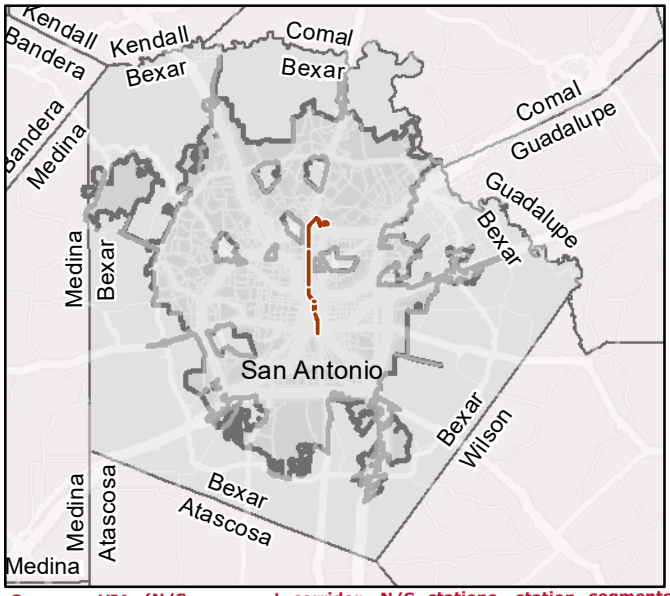
- Heiden-Ferris complex, 5 to 10 percent slopes, severely eroded
- Houston Black clay, 1 to 3 percent slopes
- Houston Black clay, 3 to 5 percent slopes
- Houston Black gravelly clay, 1 to 3 percent slopes
- Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded



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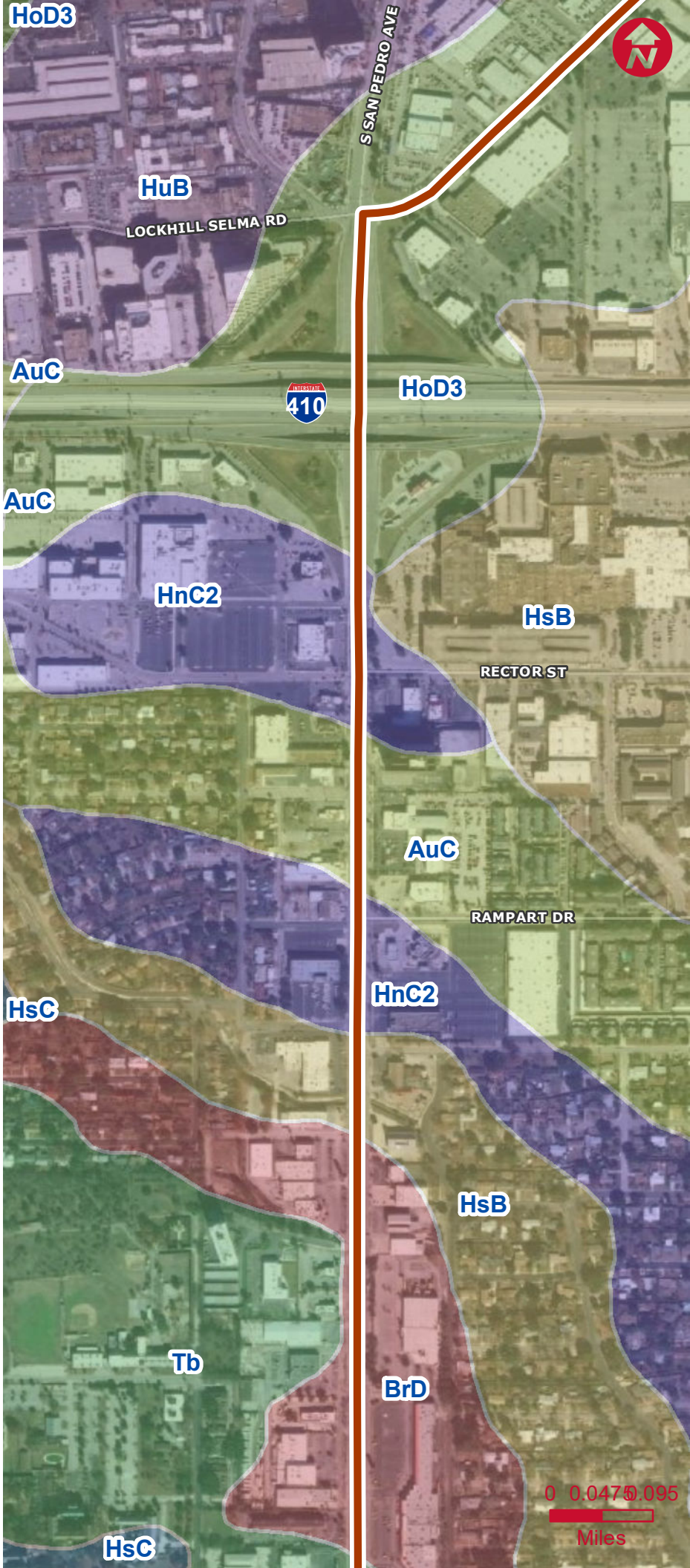

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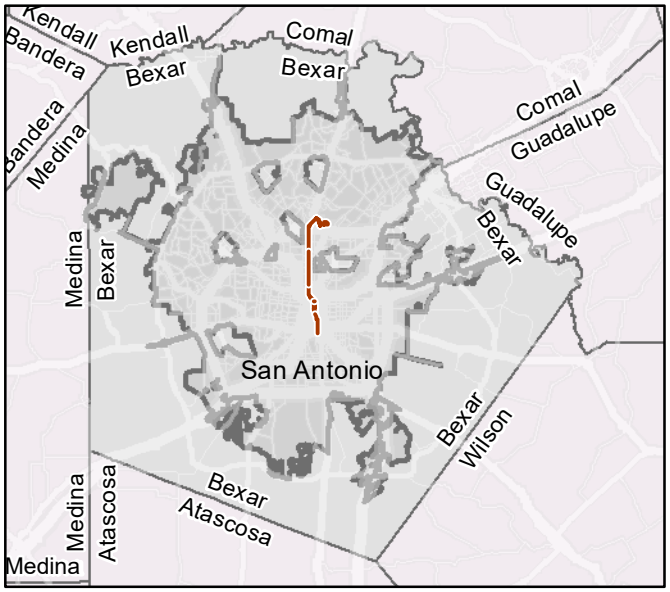
- Heiden-Ferris complex, 5 to 10 percent slopes, severely eroded
- Houston Black clay, 1 to 3 percent slopes
- Houston Black clay, 3 to 5 percent slopes
- Lewisville silty clay, 0 to 1 percent slopes
- Lewisville silty clay, 1 to 3 percent slopes
- Pits and Quarries, 1 to 90 percent slopes
- Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded



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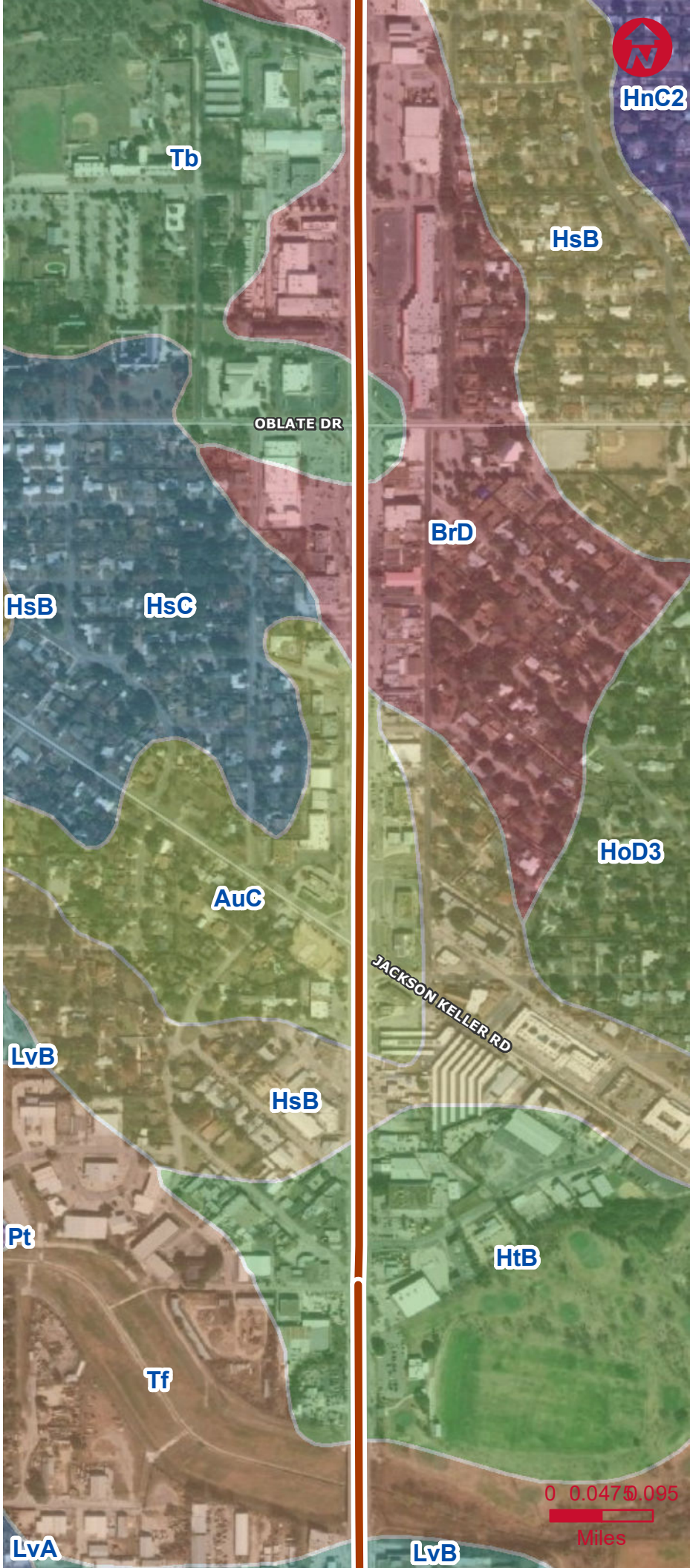

Soils Map

LEGEND

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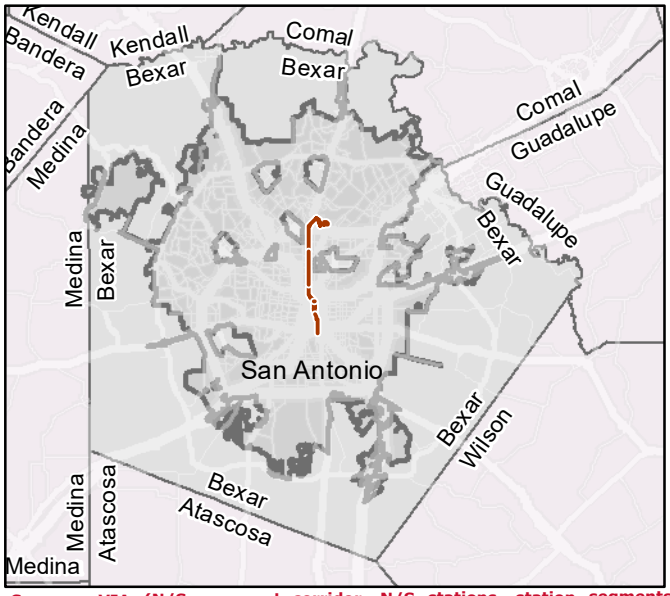
- Austin silty clay, 1 to 3 percent slopes
- Austin silty clay, 2 to 5 percent slopes, moderately eroded
- Branyon clay, 1 to 3 percent slopes
- Eckrant very cobbly clay, 5 to 15 percent slopes
- Houston Black clay, 1 to 3 percent slopes
- Lewisville silty clay, 0 to 1 percent slopes
- Lewisville silty clay, 1 to 3 percent slopes
- Pits and Quarries, 1 to 90 percent slopes
- Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded



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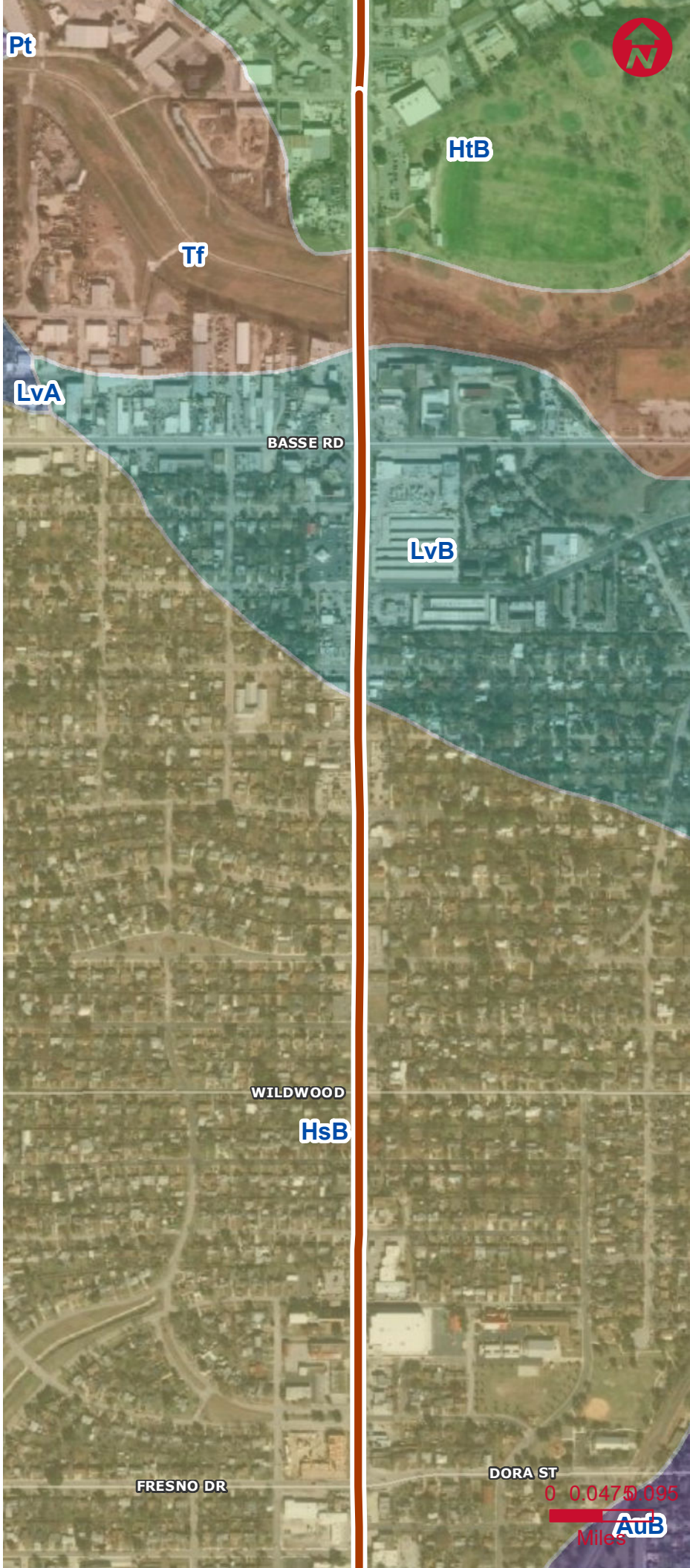

Soils Map

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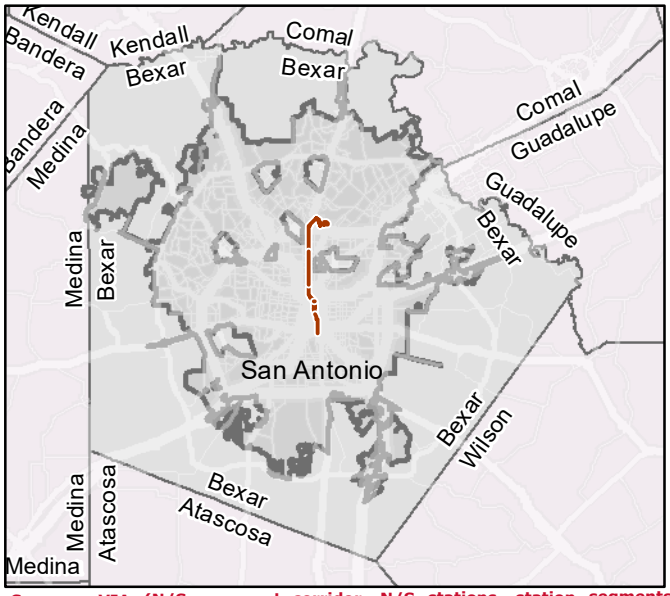
- Houston Black clay, 1 to 3 percent slopes
- Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded



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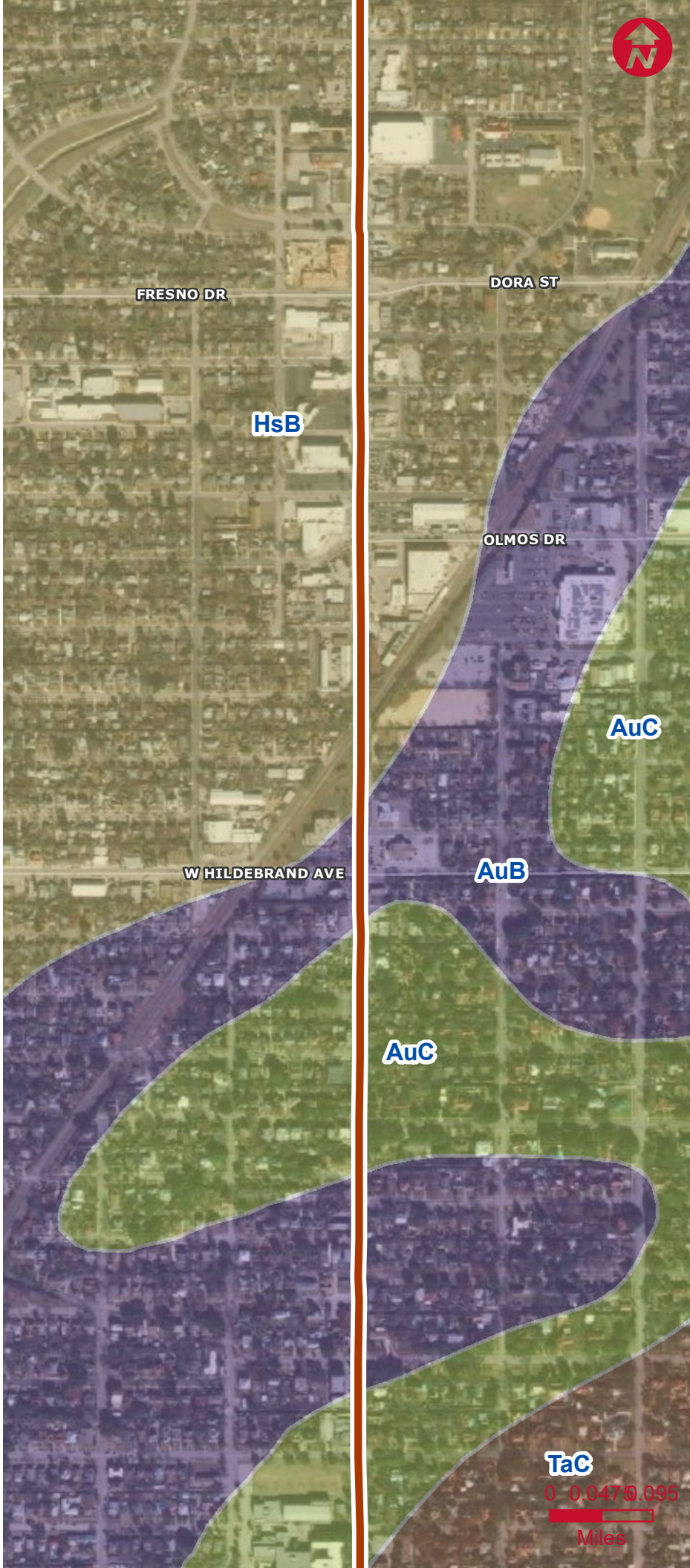

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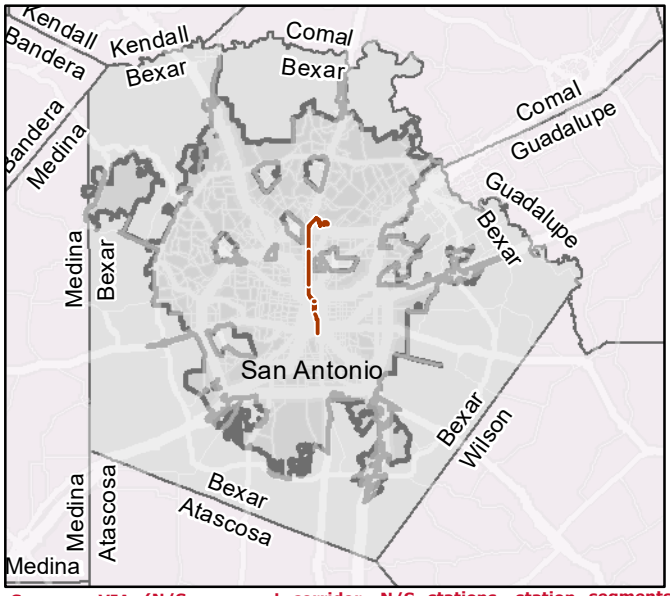
- Houston Black clay, 1 to 3 percent slopes
- Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded



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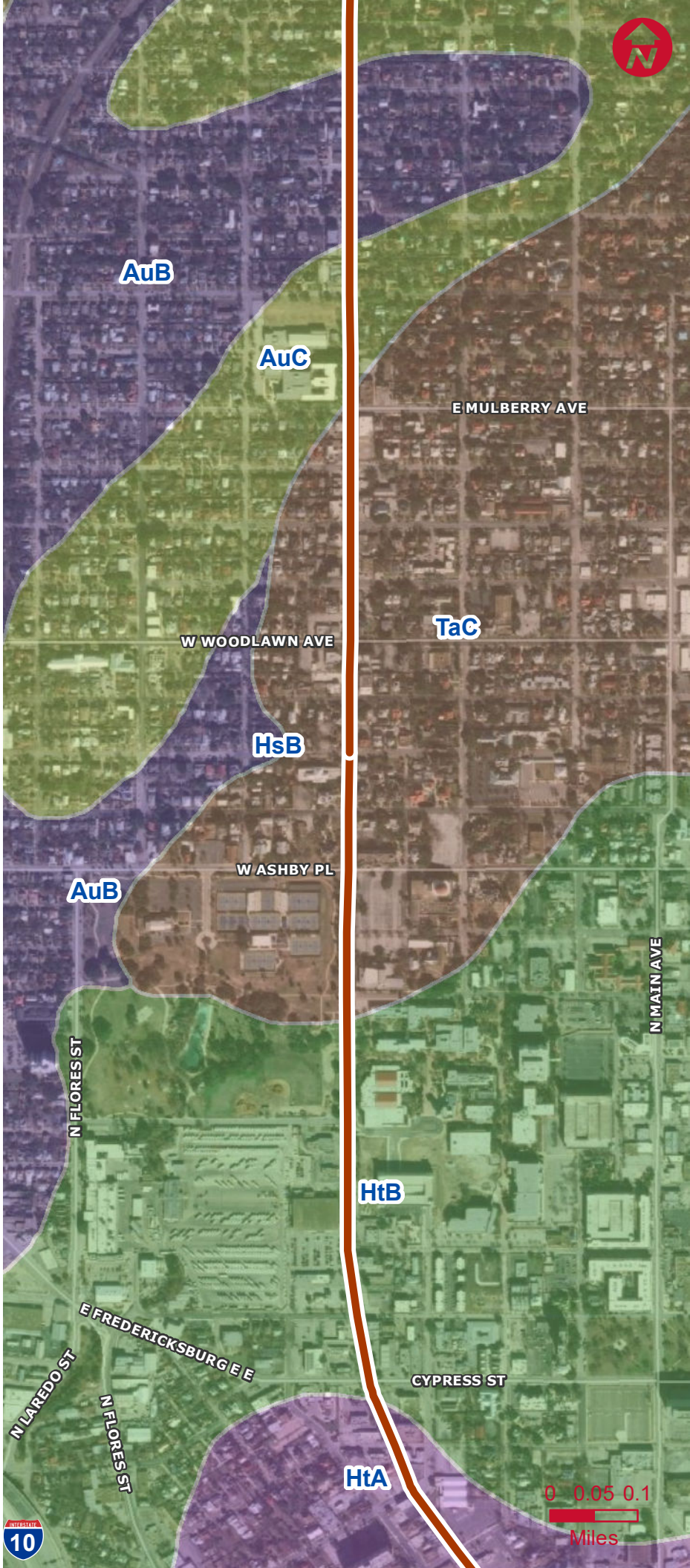

Soils Map

LEGEND

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- Austin silty clay, 1 to 3 percent slopes
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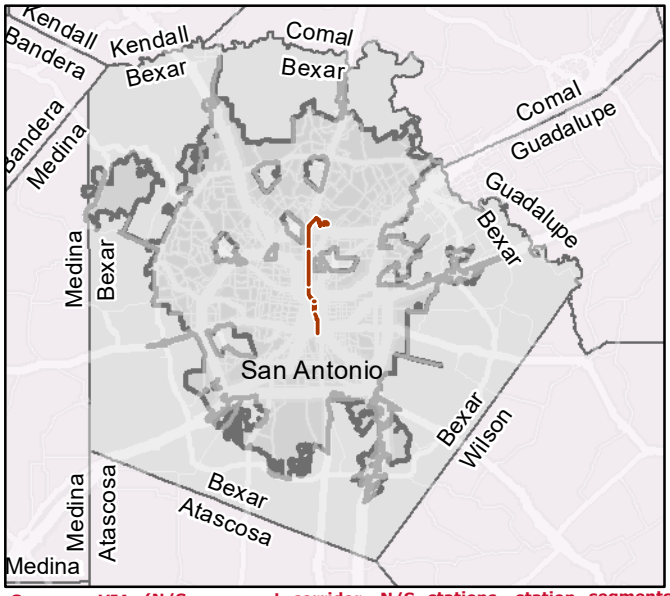

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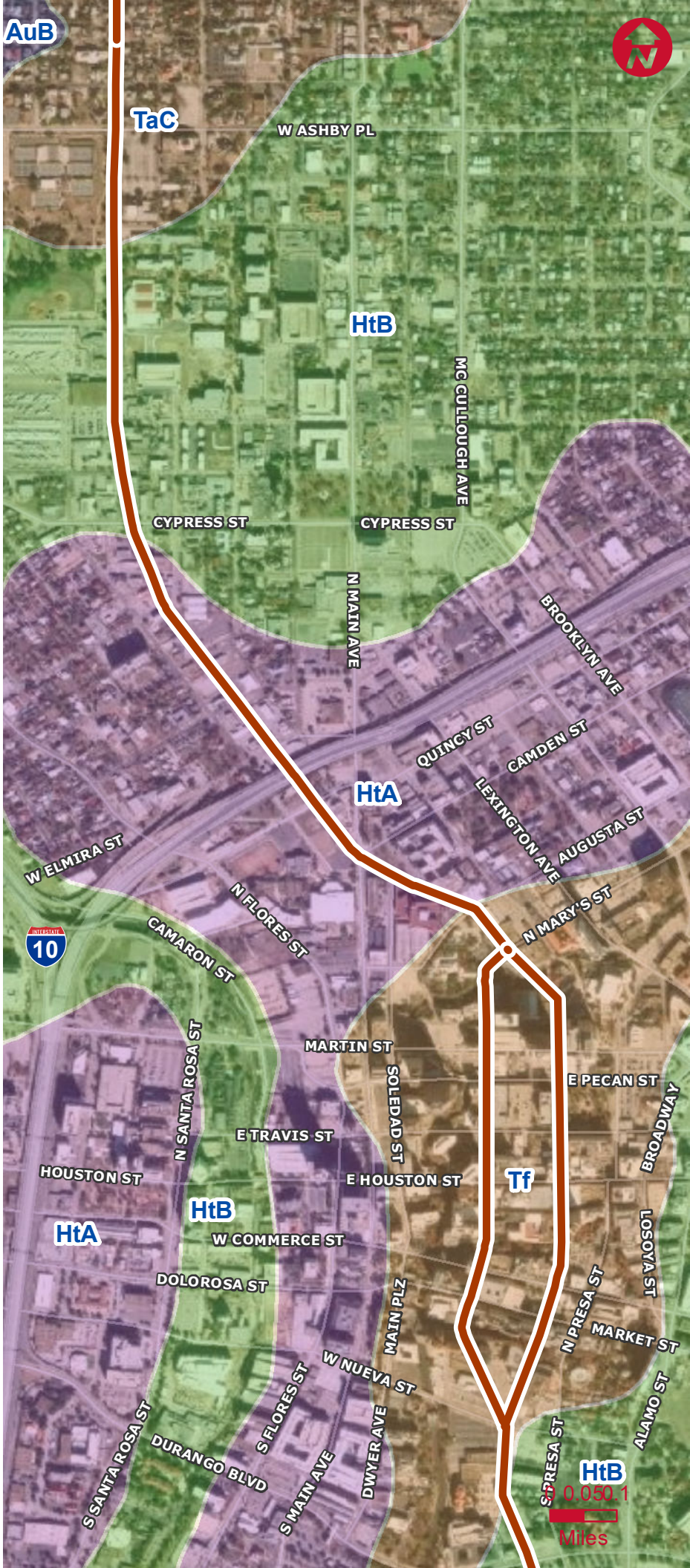
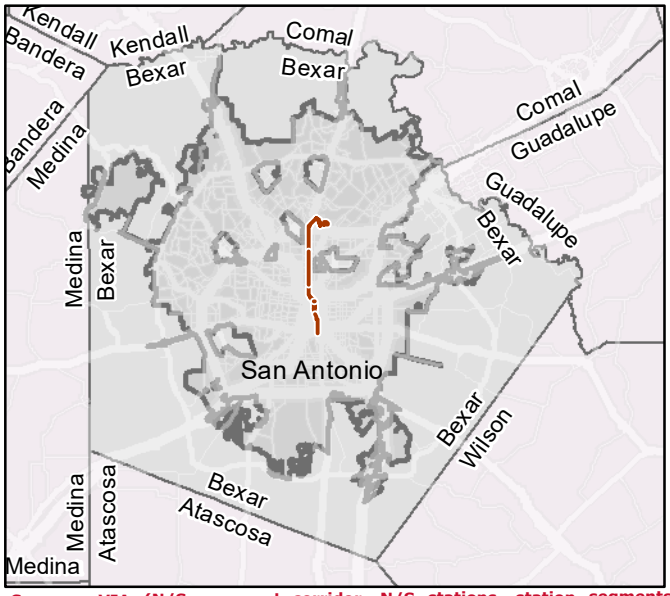


Soils Map

LEGEND

- ART North/South Project Alignment
- Branyon clay, 0 to 1 percent slopes
- Branyon clay, 1 to 3 percent slopes
- Lewisville silty clay, 1 to 3 percent slopes
- Loire clay loam, 0 to 2 percent slopes, occasionally flooded
- Patrick soils, 1 to 3 percent slopes, rarely flooded
- Sunev clay loam, 1 to 3 percent slopes
- Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded



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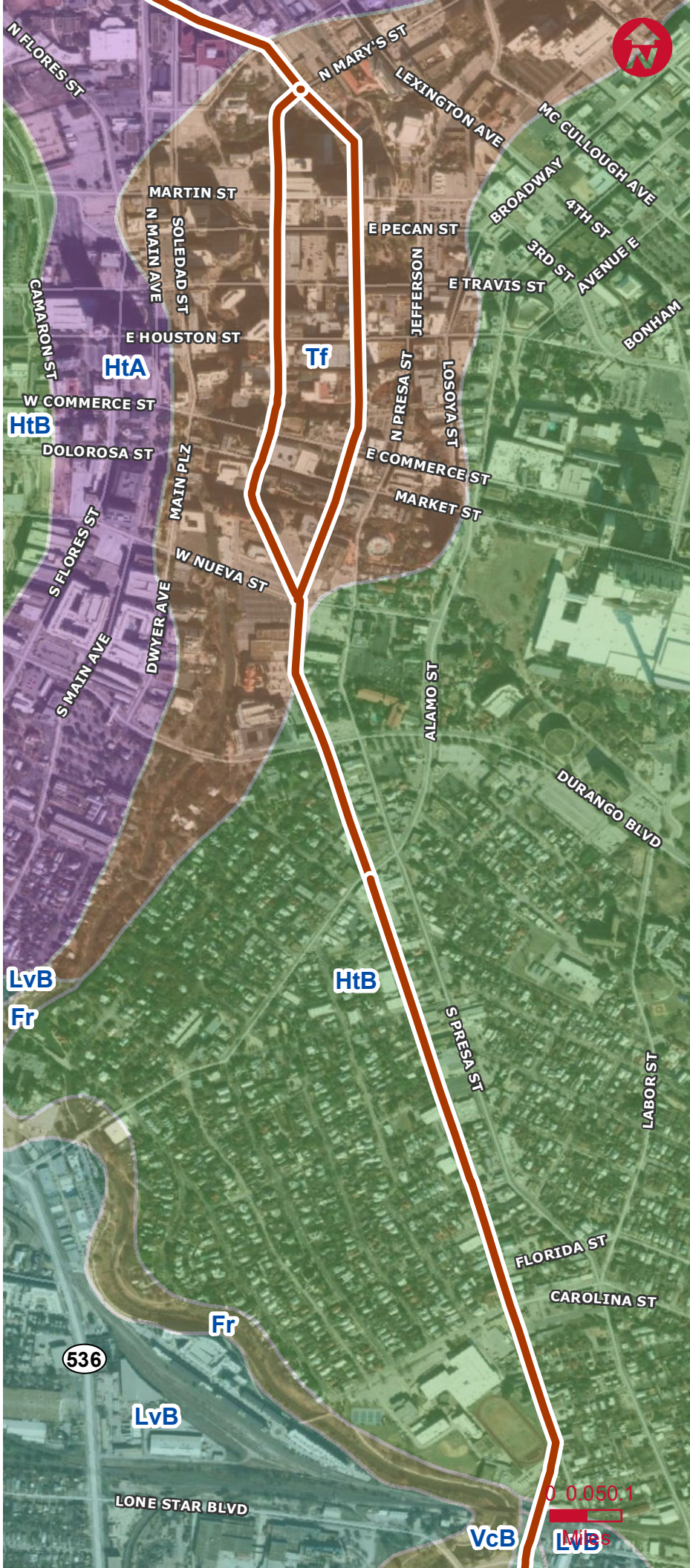
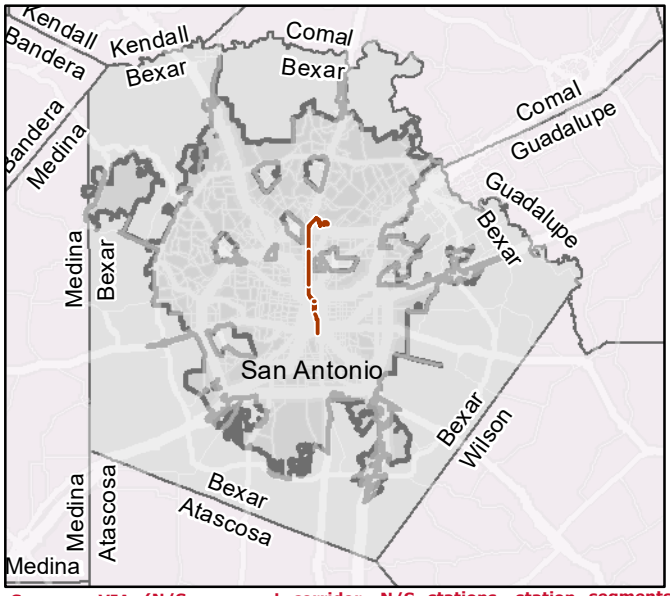


Soils Map

LEGEND

- ART North/South Project Alignment
- Branyon clay, 0 to 1 percent slopes
- Branyon clay, 1 to 3 percent slopes
- Lewisville silty clay, 1 to 3 percent slopes
- Loire clay loam, 0 to 2 percent slopes, occasionally flooded
- Patrick soils, 1 to 3 percent slopes, rarely flooded
- Rock outcrop-Olmos complex, 5 to 25 percent slopes
- Sunev clay loam, 1 to 3 percent slopes



Sources: VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); NRCS (soils)

APPENDIX D BIOLOGICAL RESOURCES

Ecoregions Map

Ecosystems Vegetation Map

TxNDD Element Occurrence Map

USFWS IPAC List

TPWD RTEST List

Federal and State Listed Species Analysis

SGCN Analysis

MBTA and BGEPA Species Analysis

Ecoregions of Texas

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/Fayette 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

Level III and IV Ecoregions of Texas

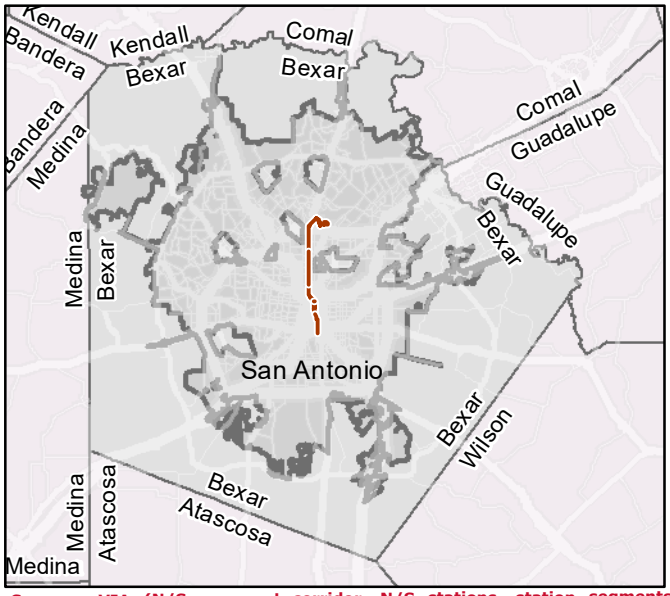
Source: Griffith et al., 2007

Field Verified Vegetation - Ecosystems Map

LEGEND

ART North/South Project Alignment

Urban Low Intensity



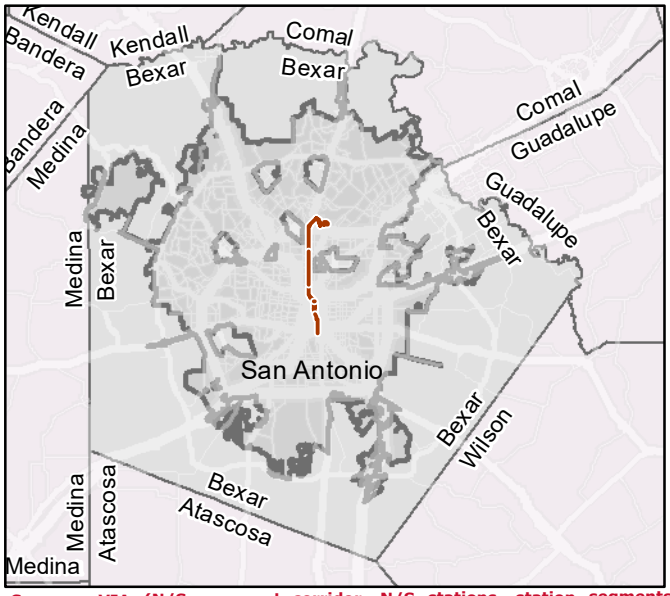
Sources: VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); VIA Team (vegetation)

Field Verified Vegetation - Ecosystems Map

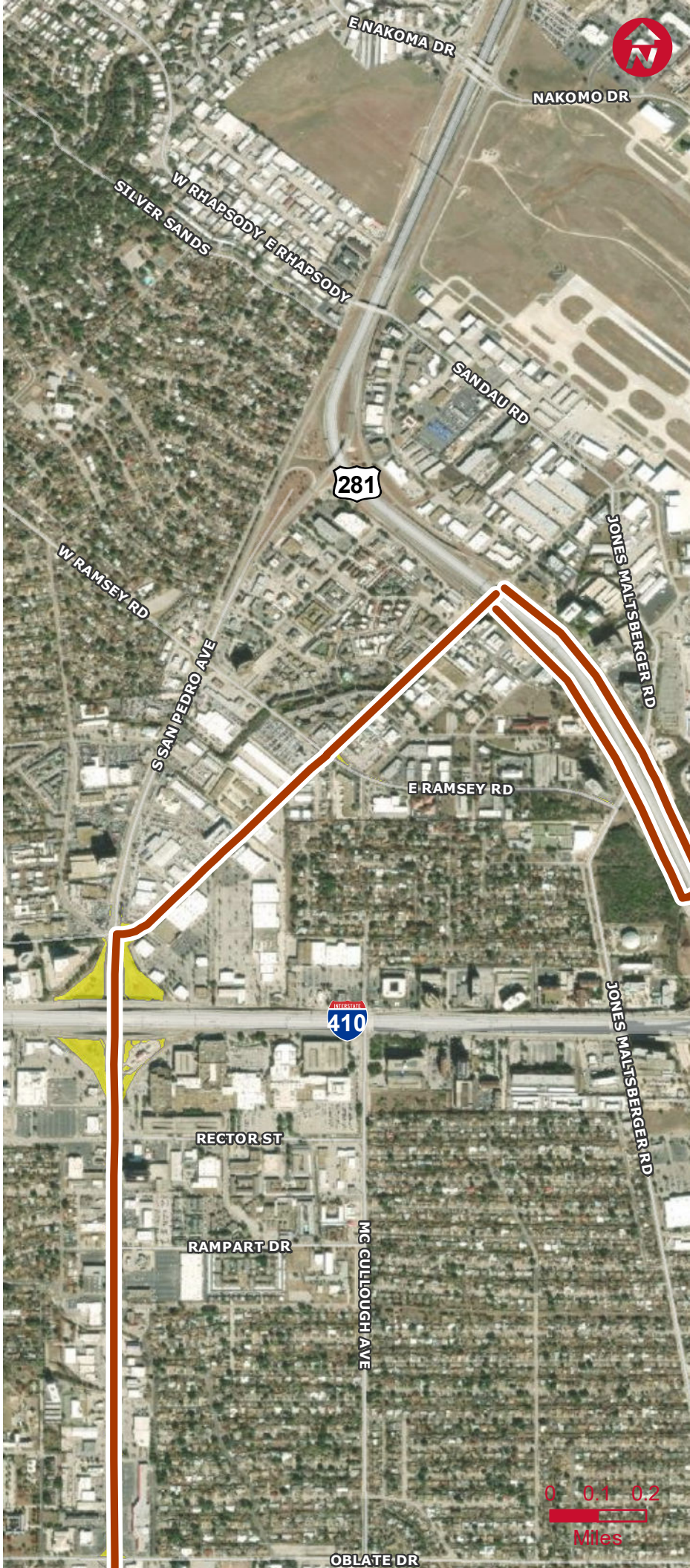
LEGEND

ART North/South Project Alignment

Urban Low Intensity



Sources: VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); VIA Team (vegetation)

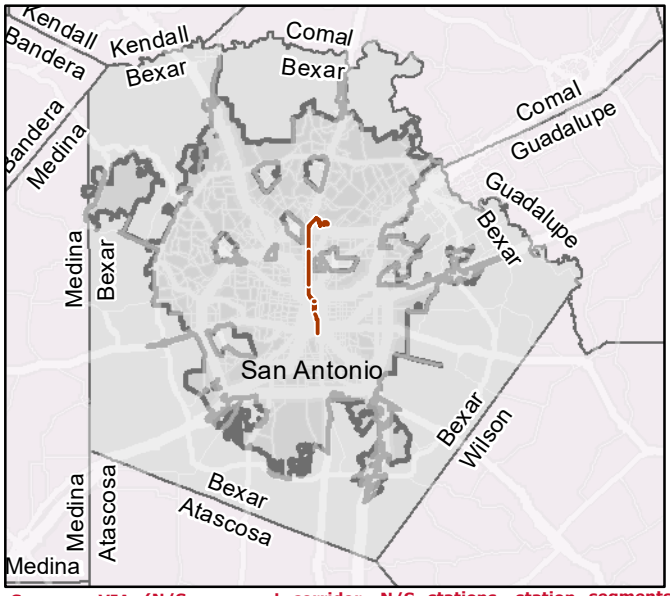


Field Verified Vegetation - Ecosystems Map

LEGEND

ART North/South Project Alignment

Urban Low Intensity



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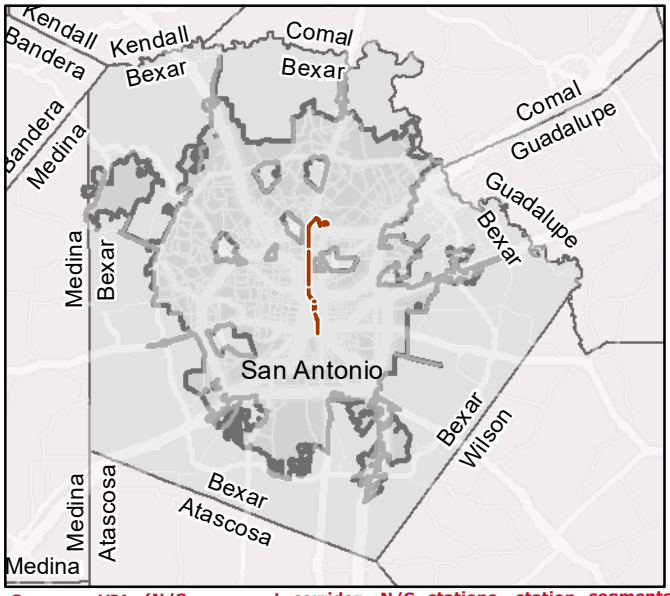
Field Verified Vegetation - Ecosystems Map

LEGEND

ART North/South Project Alignment

Urban Low Intensity



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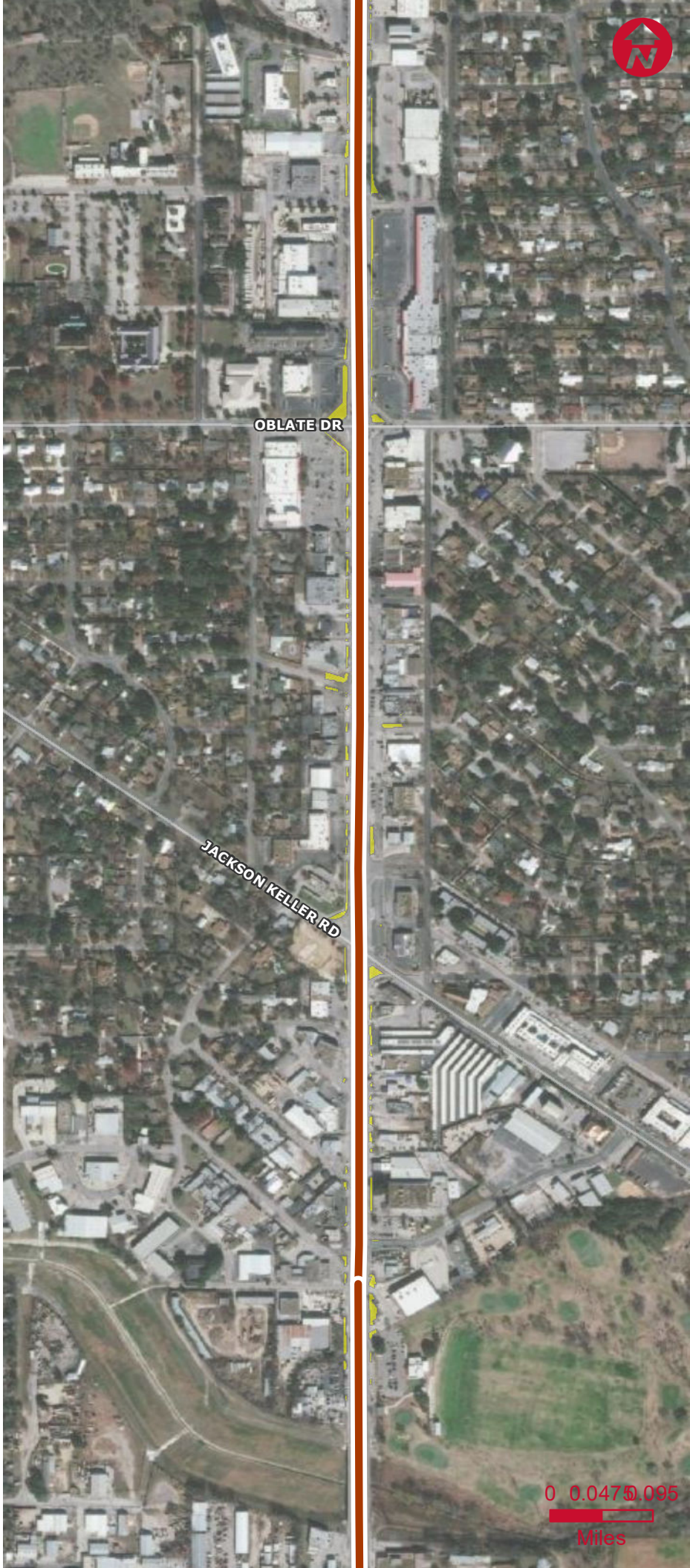
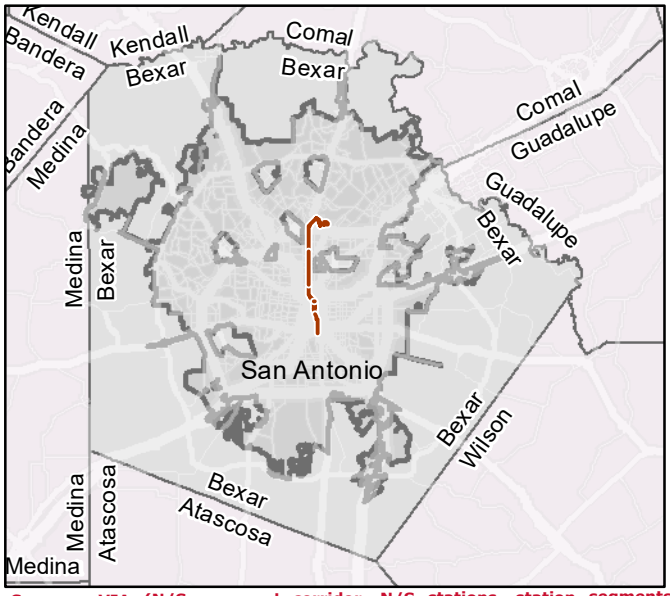


Field Verified Vegetation - Ecosystems Map

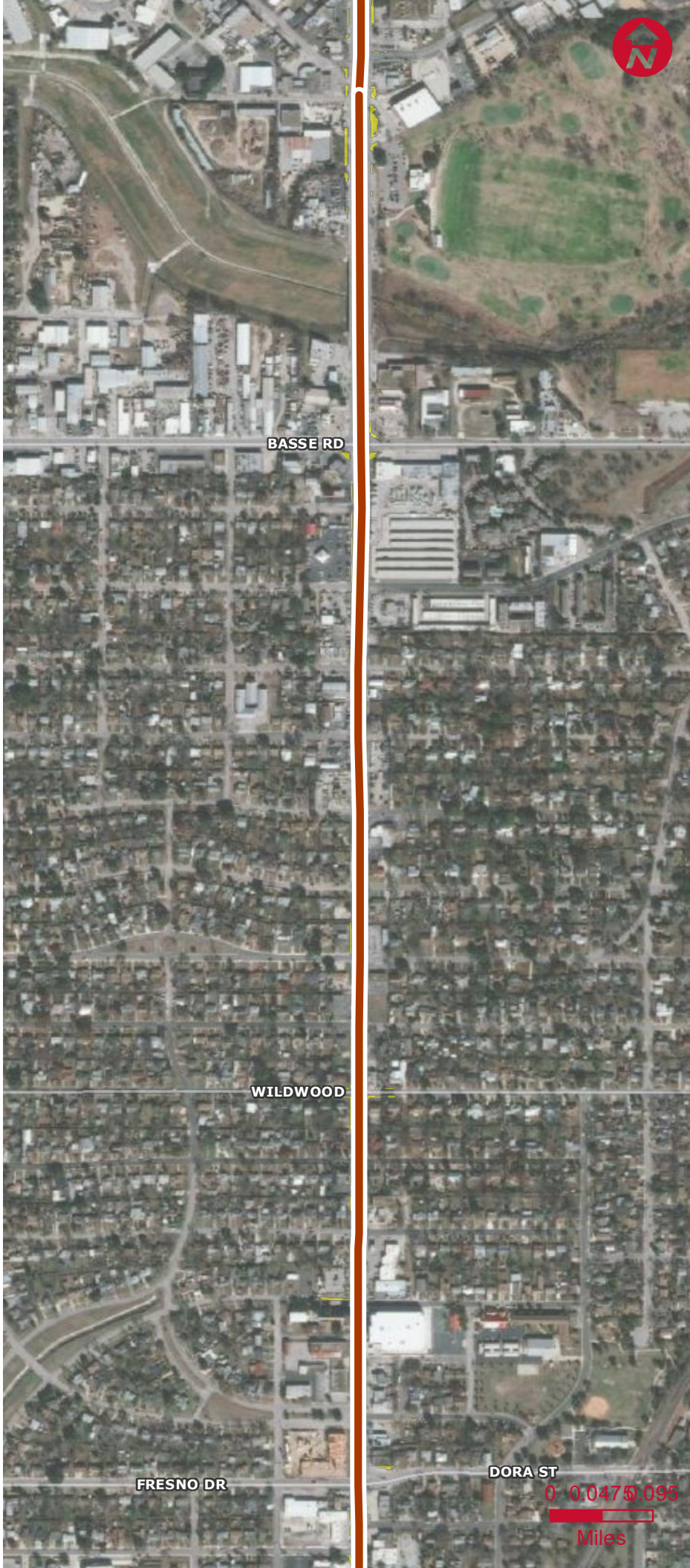
LEGEND

ART North/South Project Alignment

Urban Low Intensity



Sources: VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); VIA Team (vegetation)



Field Verified Vegetation - Ecosystems Map

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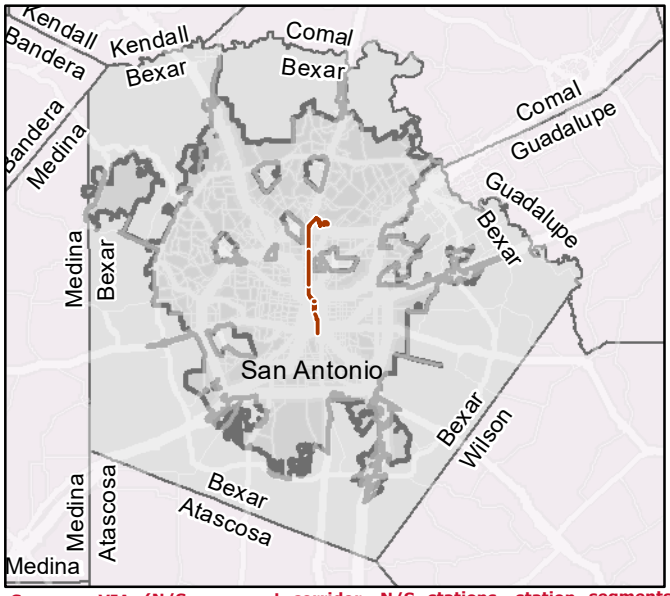
ART North/South Project Alignment

Urban Low Intensity



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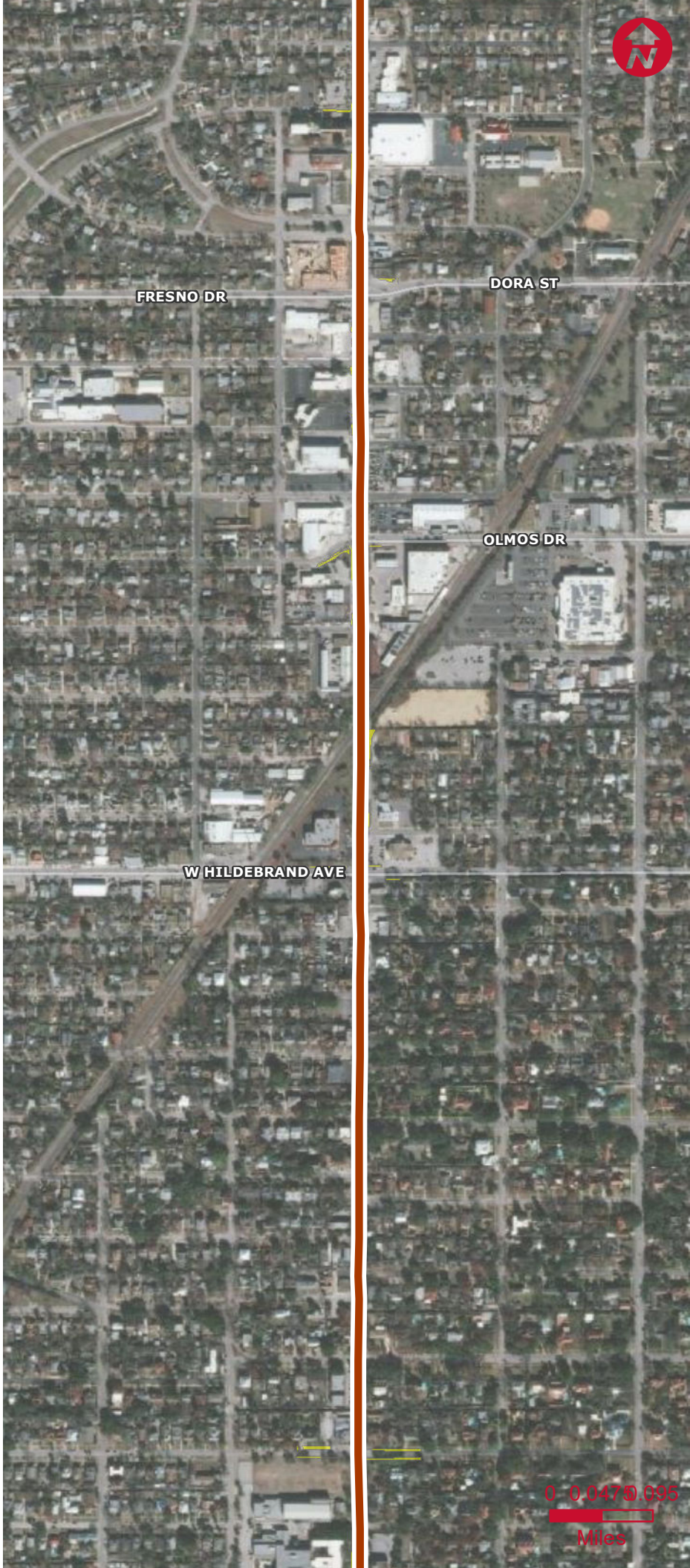
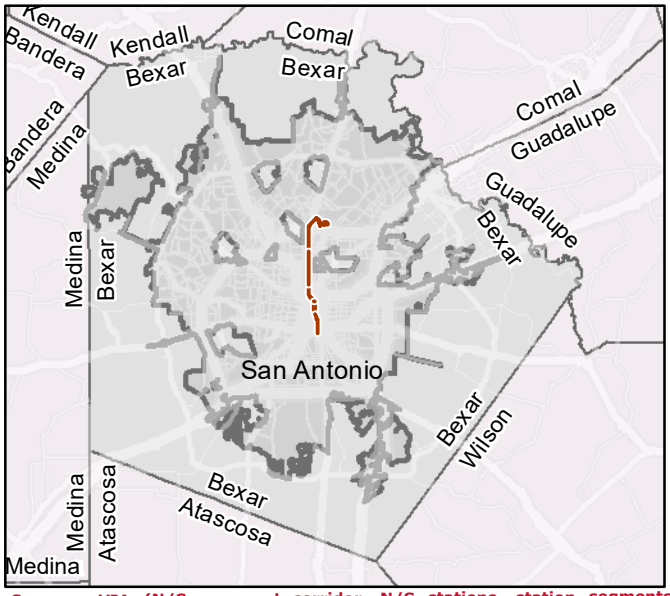


Field Verified Vegetation - Ecosystems Map

LEGEND

ART North/South Project Alignment

Urban Low Intensity



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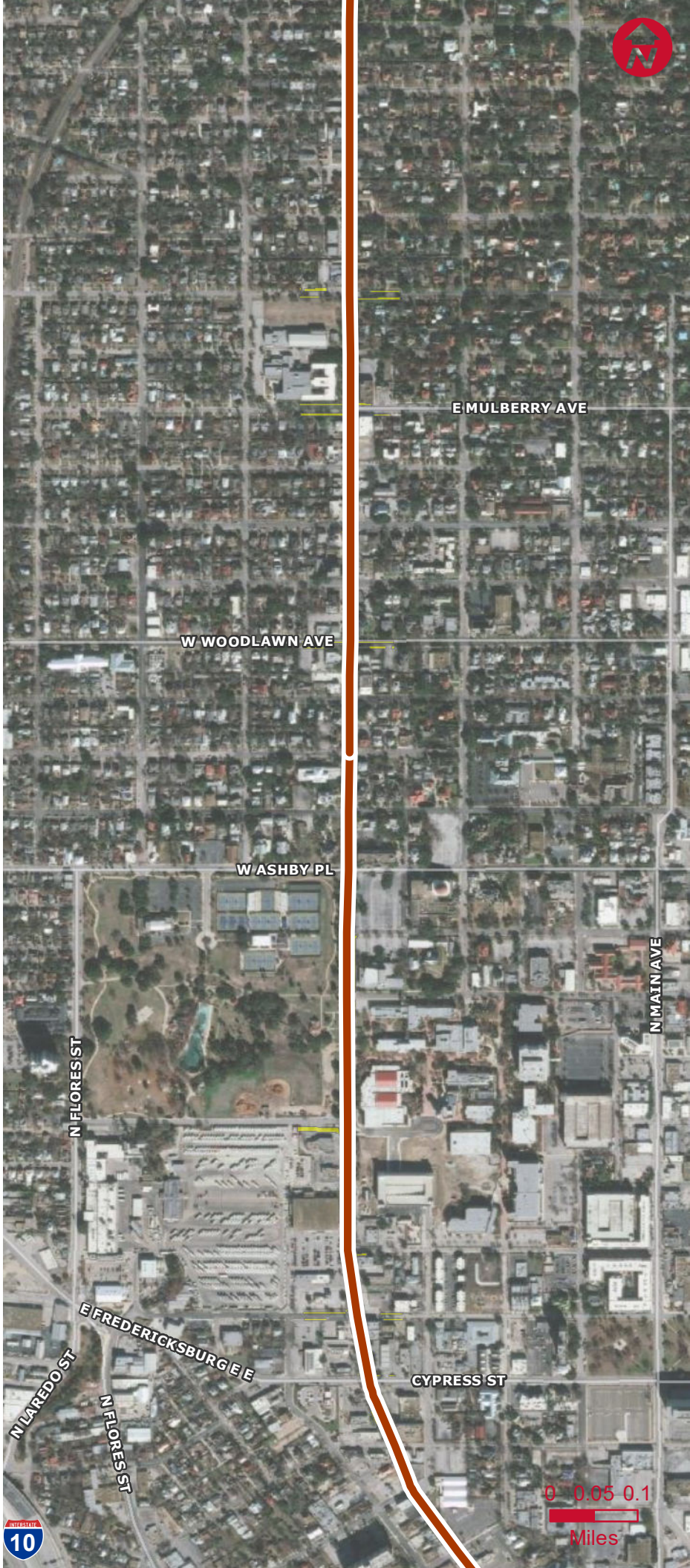
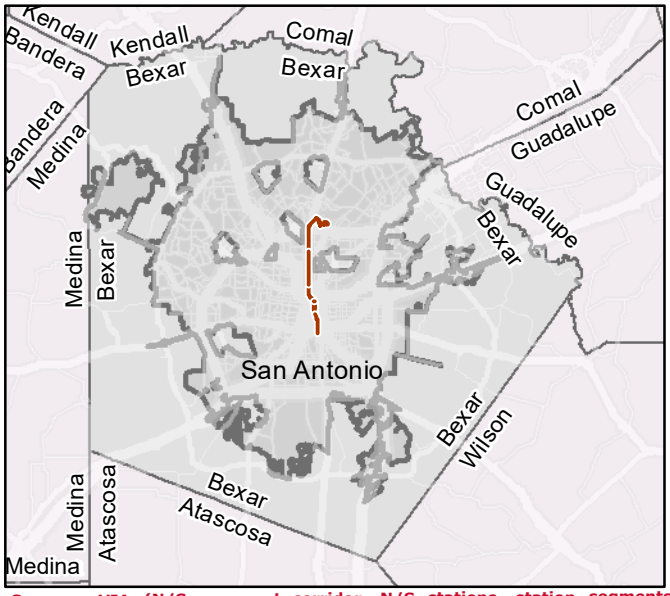


Field Verified Vegetation - Ecosystems Map

LEGEND

ART North/South Project Alignment

Urban Low Intensity



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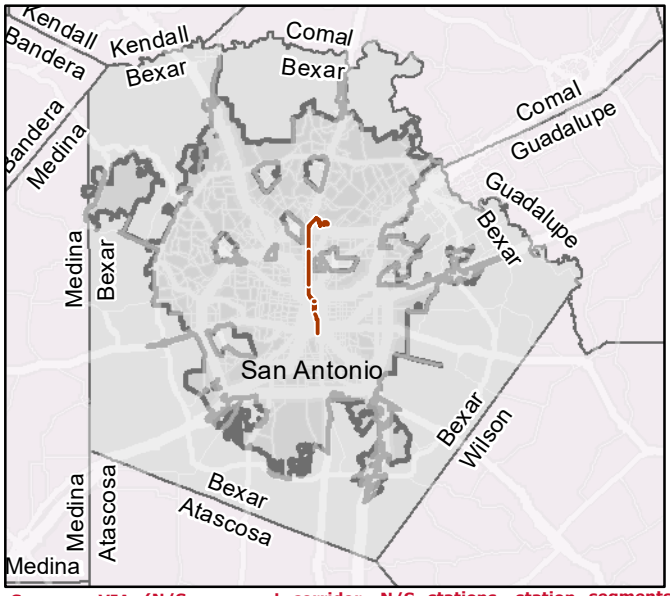
Field Verified Vegetation - Ecosystems Map

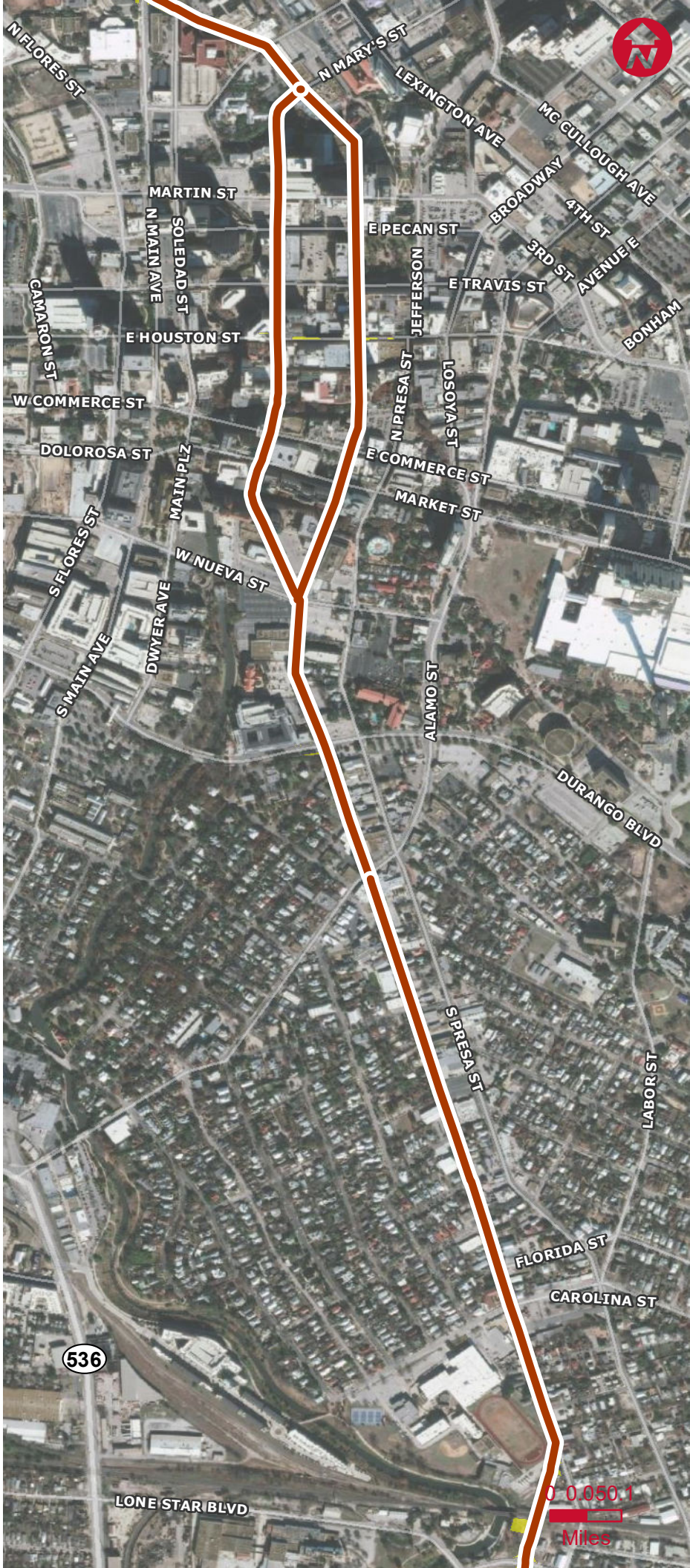
LEGEND

ART North/South Project Alignment

Urban Low Intensity



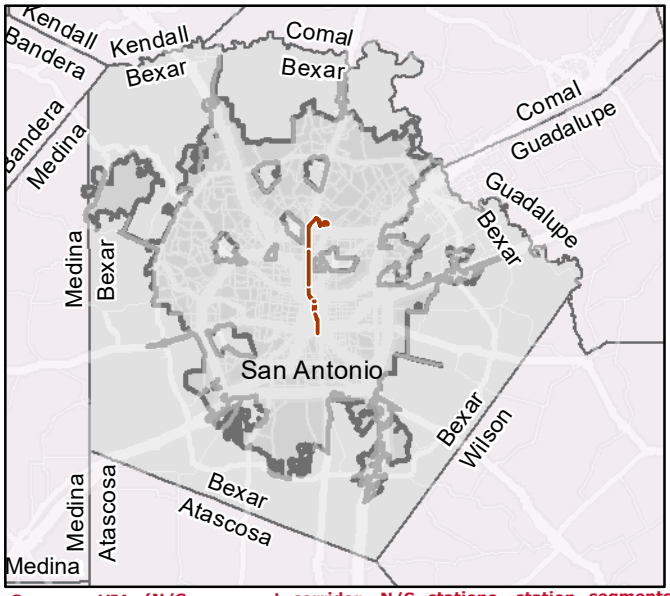
Sources: VIA (N/S proposed corridor, N/S stations, station segments, intersecting transit routes); TxDOT (city and county boundaries, roads, railroads); VIA Team (vegetation)



Field Verified Vegetation - Ecosystems Map

LEGEND

- ART North/South Project Alignment
- Urban Low Intensity



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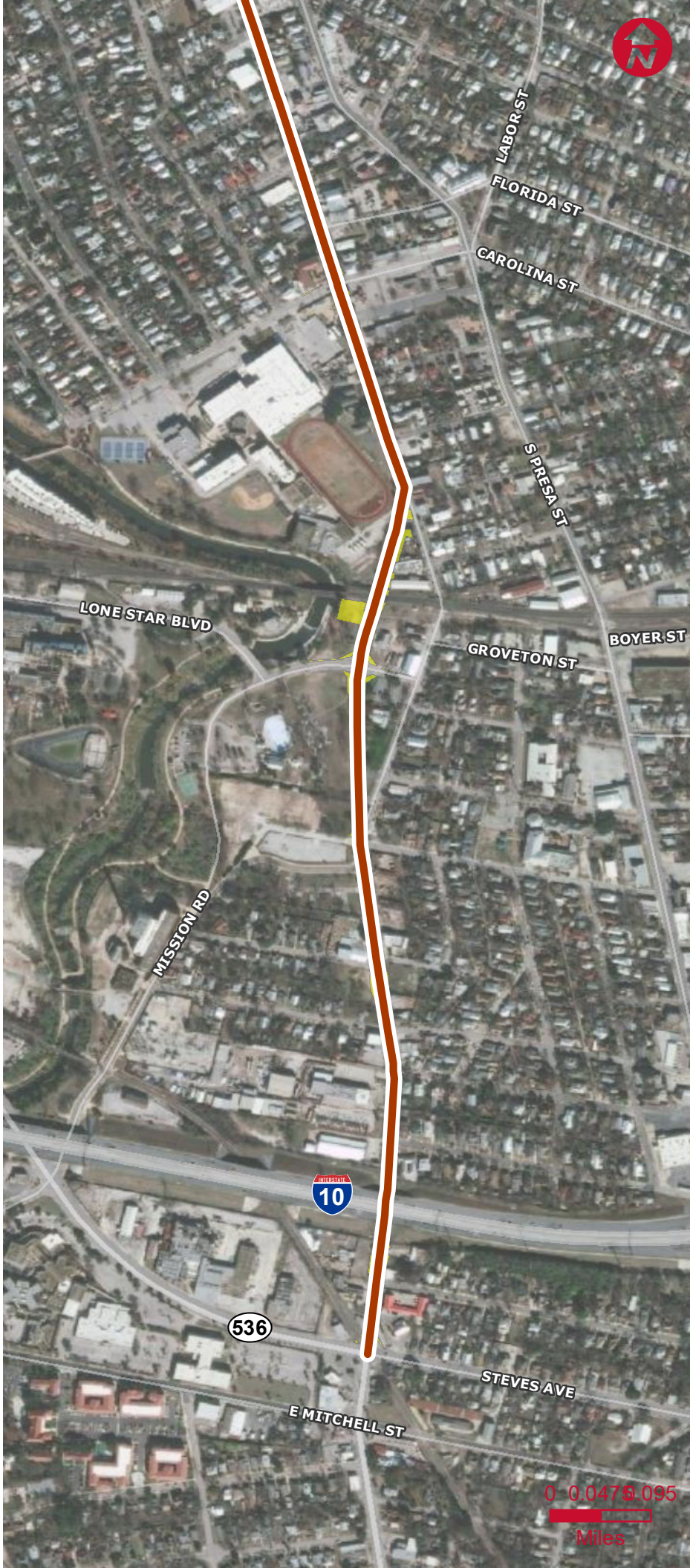
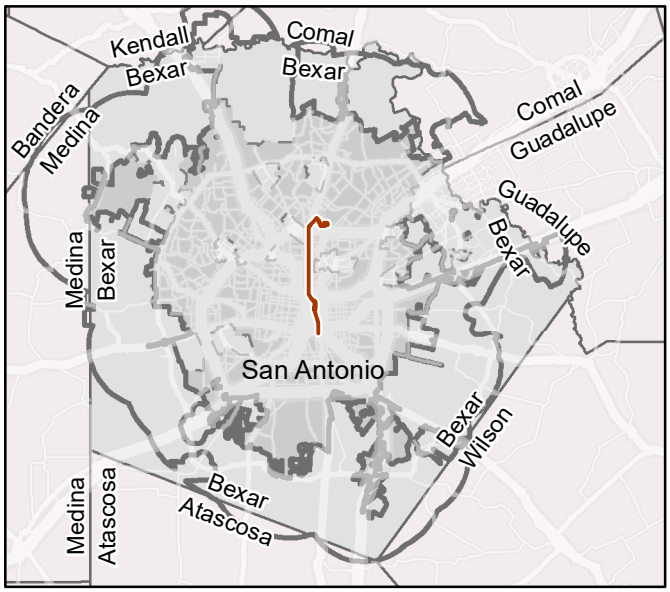


Element Occurence Map

LEGEND

- ART North/South Project Alignment
- Correll's False Dragon-Head Identified
- Eastern Spotted Skunk Identified
- Plains Spotted Skunk Identified
- Texas Shiner Identified
- Western Spotted Skunk Identified



Sources: VIA (N/S proposed corridor and N/S Stations); TxDOT (city and county boundaries, roads, railroads); City of San Antonio (channels, central business district boundary)

0 0.5 1 Miles

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
Phone: (512) 490-0057 Fax: (512) 490-0974
http://www.fws.gov/southwest/es/AustinTexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To: April 01, 2022
Project Code: 2022-0006552
Project Name: VIA ART Revised

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 ECOS-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 ECOS-IPaC system by completing the same process used to receive the enclosed list.

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

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

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

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.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/birds/policies-and-regulations.php.

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/birds/bird-enthusiasts/threats-to-birds.php.

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/birds/policies-and-regulations/executive-orders/e0-13186.php.

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
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
(512) 490-0057

Project Summary

Project Code: 2022-0006552
Event Code: None
Project Name: VIA ART Revised
Project Type: Road/Hwy - Maintenance/Modification
Project Description: Transit Improvement
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@29.4644189,-98.49930877384895,14z

Counties: Bexar County, Texas

Endangered Species Act Species

There is a total of 21 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA 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.

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. The location of the critical habitat is not available. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. 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. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6374	Threatened
Texas Blind Salamander *Eurycea rathbuni* No critical habitat has been designated for this species. 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. The location of the critical habitat is not available. 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. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6942	Endangered
[no Common Name] Beetle *Rhadine infernalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3804	Endangered
Comal Springs Dryopid Beetle *Stygoparnus comalensis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7175	Endangered
Comal Springs Riffle Beetle *Heterelmis comalensis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3403	Endangered
Helotes Mold Beetle *Batrisodes venyivi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1149	Endangered
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Arachnids

NAME	STATUS
Braken Bat Cave Meshweaver *Cicurina venii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7900	Endangered
Cokendolpher Cave Harvestman *Texella cokendolpheri* There is **final** critical habitat for this species. The location of the critical habitat is not available. 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. The location of the critical habitat is not available. 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. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/553	Endangered
Madla Cave Meshweaver *Cicurina madla* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2467	Endangered
Robber Baron Cave Meshweaver *Cicurina baronia* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2361	Endangered

Crustaceans

NAME	STATUS
Peck's Cave Amphipod *Stygobromus (=Stygonectes) pecki* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8575	Endangered

Flowering Plants

NAME	STATUS
Bracted Twistflower *Streptanthus bracteatus* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2856	Proposed Threatened
Texas Wild-rice *Zizania texana* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/805	Endangered

Critical habitats

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

IPaC User Contact Information

Agency: WSP USA
Name: Sally Amaye
Address: 1601 South Mopac Expressway Suite 325D
City: Austin
State: TX
Zip: 78746
Email sally.amaye@wsp.com
Phone: 7377033926

Lead Agency Contact Information

Lead Agency: Federal Transit Administration

Last Update: 3/17/2022

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: N
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: SU

ARACHNIDS

Braken Bat Cave meshweaver *Cicurina venii*

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

Federal Status: LE	State Status:	SGCN: Y

BEXAR COUNTY

ARACHNIDS

Endemic: Y | Global Rank: G1 | State Rank: S1

Cokendolpher Cave harvestman *Texella cokendolpheri*

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

Federal Status: LE | 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: LE | 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: LE | 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: LE | State Status: | SGCN: Y

Endemic: Y | Global Rank: G1 | State Rank: S1

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

No accepted common name *Speodesmus reddelli*

Habitat description is not available at this time.

Federal Status: | State Status: | SGCN: Y

Endemic: | Global Rank: GNR | State Rank: SNR

Robber Baron Cave meshweaver *Cicurina baronia*

BEXAR COUNTY

ARACHNIDS

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

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

ARTHROPODS

No accepted common name *Speodesmus falcatus*

Habitat description is not available at this time.

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

No accepted common name *Speodesmus ivyi*

Habitat description is not available at this time.

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

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: Y
Endemic: N	Global Rank: G5	State Rank: S3B,S3N

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: G3	State Rank: S3B

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

BEXAR COUNTY

BIRDS

Franklin's gull *Leucophaeus pipixcan*

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*

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: LE	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: DL: Delisted	State Status:	SGCN: Removed from Y
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

mountain plover *Charadrius montanus*

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

piping plover *Charadrius melodus*

BEXAR COUNTY

BIRDS

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

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

tropical parula *Setophaga pitiayumi*

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

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

western burrowing owl *Athene cunicularia hypugaea*

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

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

white-faced ibis *Plegadis chihi*

Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

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

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.

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

BEXAR COUNTY

BIRDS

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

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

zone-tailed hawk *Buteo albonotatus*

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

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

CRUSTACEANS

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

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

BEXAR COUNTY

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

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:	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

BEXAR COUNTY

INSECTS

Helotes mold beetle *Batrisodes venyivi*

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

Federal Status: LE	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

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 *Dichopetala catinata*

Habitat description is not available at this time.

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

No accepted common name *Dichopetala seeversi*

Habitat description is not available at this time.

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

No accepted common name *Nectopsyche texana*

Riparian, Riverine

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

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

BEXAR COUNTY

INSECTS

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Cotalpa conclamara*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Cotinis boylei*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Rhadine exilis*
Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County
Federal Status: LE 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: LE State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S1

No accepted common name *Rhadine bullis*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Bombus variabilis*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G1G2 State Rank: SNR

No accepted common name *Megachile parksi*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Global Rank: GH State Rank: SNR

MAMMALS

big brown bat *Eptesicus fuscus*

BEXAR COUNTY

MAMMALS

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

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

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

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 red bat *Lasiurus borealis*

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

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

BEXAR COUNTY

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.

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

hoary bat *Lasiurus cinereus*

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

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

long-tailed weasel *Mustela frenata*

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

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

mountain lion *Puma concolor*

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

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

northern yellow bat *Lasiurus intermedius*

Occurs mainly along the Gulf Coast but inland specimens are not uncommon. Prefers roosting in spanish moss and in the hanging fronds of palm trees. Common where this vegtation occurs. Found near water and forages over grassy, open areas. Males usually roost solitarily, whereas females roost in groups of several individuals.

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

swamp rabbit *Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

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

tricolored bat *Perimyotis subflavus*

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

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

BEXAR COUNTY

MAMMALS

western hog-nosed skunk *Conepatus leuconotus*

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

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

western spotted skunk *Spilogale gracilis*

Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. In semi-arid brushlands in U.S., in wet tropical forests in Mexico. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.

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

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

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

BEXAR COUNTY

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.

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

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

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: S5

slender glass lizard *Ophisaurus attenuatus*

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

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

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 garter snake *Thamnophis sirtalis annectens*

BEXAR COUNTY

REPTILES

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: Y	Global Rank: G5T4	State Rank: S1

Texas horned lizard *Phrynosoma cornutum*

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

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

Texas indigo snake *Drymarchon melanurus erebennus*

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

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

Texas tortoise *Gopherus berlandieri*

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

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

timber (canebrake) rattlesnake *Crotalus horridus*

Terrestrial: Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.

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

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: G5	State Rank: S3

BEXAR COUNTY

REPTILES

western hognose snake *Heterodon nasicus*

Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.

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

western rattlesnake *Crotalus viridis*

Terrestrial: Dry desert and prairie grasslands, shrub desert rocky hillsides; edges of arid and semi-arid river breaks.

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

PLANTS

awnless leastdaisy *Chaetopappa imberbis*

In woodlands on lomas of Carrizo sand (TEX-LL specimens Carr 23875, 12507). 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: PT	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

BEXAR COUNTY

PLANTS

bristle nailwort *Paronychia setacea*

Flowering vascular plant endemic to eastern southcentral Texas, occurring in sandy soils

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

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*

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

BEXAR COUNTY

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

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

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: G2G3	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*

BEXAR COUNTY

PLANTS

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

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

spreading leastdaisy *Chaetopappa effusa*

Limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, 300-500 m elevation; Perennial; Flowering (May) July-Oct

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

sycamore-leaf snowbell *Styrax platanifolius ssp. platanifolius*

BEXAR COUNTY

PLANTS

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

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 ssp. 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*

BEXAR COUNTY

PLANTS

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

woolly butterfly-weed *Gaura villosa 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; April (Diggs et al. 1999).

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

Federal and State Listed Species

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 are no springs or caves with rocky or cobble beds within the project area.	-	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.	Yes	There are streams which cross the project area.	LT	No effect	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	Texas Blind Salamander	Eurycea rathbuni	Aquatic and subterranean; streams and caves.	Yes	There are streams within the project area but there are no caves.	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	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 are no springs or caves with rocky or cobble beds within the project area.	-	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	Braken Bat Cave meshweaver	Cicurina venii	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	No	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project area that could be affected.	No
Bexar	Arachnids	Cokendolpher Cave harvestman	Texella cokendolpheri	Small, eyeless harvestman; karst features in north and northwest Bexar County.	No	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project area that could be affected.	No
Bexar	Arachnids	Government Canyon Bat Cave meshweaver	Cicurina vespera	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	No	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project area that could be affected.	No
Bexar	Arachnids	Government Canyon Bat Cave spider	Neoleptoneta microps	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	No	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project 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	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project 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	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	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

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	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	There were no stands of Ashe juniper with various oaks observed within the project area during biological field survey conducted on March 1st, 2022. The various landscaped and maintained deciduous trees within existing right-of-way is unlikely to suitable for nesting for the species.	LE	No effect	E	No impact	Species preferred habitat does not occur within the project area that could be impacted or affected.	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,	No	The project area is not located along the Gulf Coast. There are no beaches, sandflats, dunes, or algal flats within the project area.	LT	No effect	T	No impact	The project area is outside of the species known range.	No
Bexar	Birds	Reddish Egret	Egretta rufescens	Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear	No	The project area is not located along the Texas Gulf Coast. There are no shallow salt ponds, brackish marshes, tidal flats, or dry coastal islands within the project area.	-	N/A	T	No impact	The project 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	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 project area.	LT	No effect	T	No impact	The project area is outside of the species known range.	No
Bexar	Birds	Tropical Parula	Setophaga pitiayumi	Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.	No	There are no semi-tropical evergreen woodlands, or dense or open woods within the project area. The landscaped and maintained trees along the edges of the San Antonio River within the project area are unlikely to be suitable for the species.	-	N/A	T	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	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.	-	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

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	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 project area.	LE	No effect	E	No impact	Species preferred habitat does not occur within the project 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	There are no large tracts of bald cypress or red mangrove within the project area. There are no prairie ponds, flooded pastures or fields, shallow standing water, mudflats, wetlands, or tall snags within the project area. However, there are ditches within the project area. Any use of ditches within project area for foraging 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
Bexar	Birds	Zone-tailed Hawk	Buteo albonotatus	Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions	No	The project area is not located in arid open country. There are no mesas, mountain countries, woodlands, wooded canyons, desert mountains, low deserts, or mature conifers in mountainous regions. Any use of trees along water crossings by the species as stopover habitat is anticipated to be temporary and incidental.	-	N/A	T	No impact	Species preferred habitat does not occur within the project area that could be impacted.	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 surveys conducted on March 1st and 2nd, 2022. The project area is not located near the Comal Springs or Hueco Springs.	LE	No effect	E	No impact	Species preferred habitat does not occur within the project area that could be impacted or affected.	No
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 project area is not near or along the San Marcos or Comal rivers.	LE	No effect	E	No impact	The project 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 project area during the field surveys conducted on March 1st and 2nd, 2022.	-	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

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	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 project area during the field surveys conducted on March 1st and 2nd, 2022.	-	N/A	T	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Insects	a ground beetle	Rhadine exilis	Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County	No	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	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	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	LE	No effect	-	N/A	Species preferred habitat does not occur within the project area that could be affected.	No
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 project area.	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 project area is not near or along the San Marcos or Comal Springs.	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	There were no karst features observed within the project area during the geological field survey conducted on March 2nd, 2022.	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	Th mowed and maintained grassy areas within the project area are likely to have milkweed plants preferred by the species.	C	May affect, but is not likely to adversely affect/adversely modify critical habitat	-	N/A	Species preferred habitat does occur within the project area that could be affected.	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 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.	-	N/A	T	No impact	Species preferred habitat does not occur within the project area that could be impacted.	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. 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

Federal and State Listed Species

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	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 streams which cross the project area.	PE	No effect	T	No impact	No work is anticipated to occur in water crossings located within the project 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, but there are no oak juniper woodlands, canyon bottoms, or steep to moderate slopes within the project area.	PT	No effect	-	N/A	Species preferred habitat does not occur within the project 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 and water less than 1 m deep within the project area.	LE	No effect	E	No impact	Species preferred habitat does not occur within the project area that could be affected or impacted. No work is anticipated to occur in water crossings located within the project 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	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 biological field survey conducted on March 1st, 2022.	-	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, sandy well-drained soils within the project area. There were no burrows observed during field survey. 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

Species of Greatest Conservation Need

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination	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.	No	There are no lentic freshwater habitats within the project area. There were no burrows observed during the field survey conducted on March 1st, 2022. There are no fishless pools of water for breeding within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Amphibians	Strecker's chorus frog	Pseudacris streckeri	Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.	No	There are no wooded floodplains, flats, prairies, cultivated fields, or marshes within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Amphibians	Valdina Farms sinkhole salamander	Eurycea troglodytes	Aquatic; springs, streams and caves with rocky or cobble beds.	Yes	There are no springs or caves within the project area but there are streams which cross the project area.	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No
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.	Yes	The mowed and maintained grasses within the project area may provide suitable terrestrial habitat for the species. Stream crossings within the project area may provide suitable aquatic habitat for the species.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
Bexar	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	No	There are no tall trees or cliffs suitable for nesting within the project area. All trees near water within the project area are fairly short to medium sized. The species may use water crossings near project area for foraging. 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 expected to be impacted.	No
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	Yes	There are no oak-juniper woodlands within the project area. There are deciduous trees within the project area that may provide insects for foraging.	May impact	Species preferred foraging habitat does occur within the project area that could be impacted.	No
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 lands	No	There are no shortgrass habitats with patches of bare ground within the project area. Mowed and maintained grasses within the project area is unlikely to be suitable for the species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Birds	Franklin's Gull	Leucophaeus pipixcan	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.	No	There are no wetlands, lake shores, or islands within the project area suitable for roosting. The project area is not along the Gulf coastline.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	There are no sand beaches, flats, bays, inlets, lagoons, or islands within the project area. There are no sand or gravel bars, inland beaches, wastewater treatment plants, or gravel mines within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No

Species of Greatest Conservation Need

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination	Explanation for Impact Determination	Presence/ Absence survey conducted?
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.	No	The project area is located in an urban setting, which the species tends to avoid. There are also no agricultural lands, or shortgrass habitats within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Birds	Mountain Plover	Charadrius montanus	Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous	No	There are no high plains, shortgrass prairies or plains, or bare plowed dirt fields.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Birds	Western Burrowing Owl	Athene cunicularia hypugaea	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows	No	There are no prairies, plains, or savannas within the project area. There were no burrows observed within the project area during the biological field survey conducted on March 1st, 2022. There are vacant lots adjacent to the project area which may be suitable for the species. 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 expected to be impacted.	No
Bexar	Crustaceans	Cascade Cave amphipod	Stygobromus dejectus	Subaquatic crustacean; subterranean obligate; in pools	No	There are no pools, caves, karst, or other geologic features which could create a link to subterranean habitats within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Crustaceans	Ezell's Cave amphipod	Stygobromus flagellatus	Known only from artesian wells	No	There are no artesian wells within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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.	No	The project area is not located within the Edwards Plateau ecoregion. The Colorado River system, Nueces River system, and the Blanco River system do not cross the project area. There are no lentic aquatic habitats within the project area.	No impact	The project area is outside of the species known range.	No
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.	Yes	The San Antonio River and its tributaries cross the project area. The channel at the San Antonio River is a deep chute and the bottom is made from rock.	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No
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.	Yes	Although the project area is not located in the Edwards Plateau ecoregion, TxNDD records show that the species has been observed within a 1-mile buffer of the project area in the San Antonio River system.	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No
Bexar	Insects	a caddisfly	Nectopsyche texana	Riparian, Riverine	Yes	There are riparian corridors within the project area at water crossings.	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No
Bexar	Insects	a cave obligate beetle	Batrisodes shadeae	This species was recently described from a single cave in Bexar Co., Texas (Chandler et al., 2009).	No	There are no caves within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No

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County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination	Explanation for Impact Determination	Presence/ Absence survey conducted?
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	No	There are no mesquite scrub or pine woodland habitats within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Mammals	big brown bat	Eptesicus fuscus	Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.	No	There are no wooded areas or woodlands within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	Yes	There are bridges within the project area which could provide suitable roosting habitat for the species. There are also buildings adjacent to the project area which could provide suitable habitat for the species. There are no high canyon walls with cracks or crevices.	No impact	Proposed project work is not anticipated to disturb or displace any bridges or buildings.	No
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	No	There are no dry, flat, grasslands with sparse vegetation within project area. There were also no mounds or burrows observed during the biological field survey conducted on March 1st, 2022. Grassy areas within mowed and maintained ROW of project area are not big enough for the large family groups of the species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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.	Yes	There are bridges within the project area which could provide suitable roosting habitat for the species. There are also buildings adjacent to the project area which could provide suitable habitat for the species. There were also abandoned swallow's nests observed under a bridge within the project area during the field survey conducted on March 1st, 2022.	No impact	Proposed project work is not anticipated to disturb or displace any bridges or buildings.	No
Bexar	Mammals	eastern red bat	Lasiurus borealis	Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of wandering migration". Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East	No	There are no forests areas or cottonwood stands within the project area. The project area is not along the coastline.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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.	Yes	Larger grassy areas within the project area may be suitable for this generalist species. Texas Natural Diversity Database (TxNDD) records show that this species and the subspecies have been observed within a one-mile radius of the project area.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No

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County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination	Explanation for Impact Determination	Presence/ Absence survey conducted?
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.	No	There are no forests or lowland deserts within the project area. The species may occur incidentally and temporarily within the project area due to nearby water crossings and forested areas.	No impact	Species preferred habitat does not occur within the project area that could be impacted. Species use of project area is anticipated to be temporary and incidental.	No
Bexar	Mammals	long-tailed weasel	Mustela frenata	Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.	No	There are no brushlands, fence rows, upland woods, bottomland hardwoods, forest edges, or rocky desert scrub habitats within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Mammals	mountain lion	Puma concolor	Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.	No	There are no rugged mountains within the project area. Riparian zones at water crossings within project area are not likely to be large enough to be suitable for the species.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Mammals	Northern yellow bat	Lasiurus intermedius	Occurs mainly along the Gulf Coast but inland specimens are not uncommon. Prefers roosting in spanish moss and in the hanging fronds of palm trees. Common where this vegetation occurs. Found near water and forages over grassy, open areas. Males usually roost solitarily, whereas females roost in groups of several individuals.	Yes	There are palm trees within project area. There are also water crossings and large grassy areas within the project area which may be suitable for foraging.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
Bexar	Mammals	swamp rabbit	Sylvilagus aquaticus	Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.	Yes	There are no cypress bogs or marshes within project area. However, the San Antonio River and other waters cross the project area. Floodplains also cross the project area.	No impact	No work is anticipated to occur at water crossings within project area as part of proposed project. Floodplains within the project area are not anticipated to be impacted by proposed project work since the vast majority of project area is already developed and paved over.	No
Bexar	Mammals	tricolored bat	Perimyotis subflavus	Forest, woodland and riparian areas are important. Caves are very important to this species.	Yes	There are no forests, woodlands within project area. Though there are riparian areas around water crossing within project area, the absence of caves within project area not very suitable for the species.	No impact	Species preferred habitat does not occur within the project area. No work is anticipated to occur in water crossings located within the project area as part of proposed project.	No
Bexar	Mammals	western hog-nosed skunk	Conepatus leuconotus	Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes	No	There are no woodlands, deserts or rugged rocky canyons within the project area. Grassy areas in project area are mowed and maintained and not part of grasslands.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No

Species of Greatest Conservation Need

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Bexar	Mammals	western spotted skunk	Spilogale gracilis	Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. In semi-arid brushlands in U.S., in wet tropical forests in Mexico. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.	Yes	There are TxNDD records of species occurrence within a 1-mile buffer of project area. However, there are no brushy canyons, rocky outcrops, semi-arid bruslands, or dens within project area. There were no burrows observed within the project area during the biological field survey conducted on March 1st, 2022. Species occurrence within 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 expected to be impacted.	No
Bexar	Mollusks	mimic cavesnail	Phreatodrobia imitata	Subaquatic; only known from two wells penetrating the Edwards Aquifer	No	There are no wells within the project area. There are no pools, caves, karst, or other geologic features which could create a link to subterranean habitats within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Plants	awnless leastdaisy	Chaetopappa imberbis	In woodlands on lomas of Carrizo sand (TEX-LL specimens Carr 23875, 12507). Mar- May.	No	There are no woodlands within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	Yes	The species could potentially occur on clayey soils on the banks of water crossings within the project area.	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No
Bexar	Plants	bigflower cornsalad	Valerianella stenocarpa	Usually along creek beds or in vernally moist grassy open areas (Carr 2015).	Yes	There are there are grassy open areas within the project area with potential for moisture suitable to the species. There are also creek beds at water crossings within project area.	No impact	No work is anticipated at the large open grassy areas observed near intersection of I-410 and San Pedro Ave within the project area. No work is anticipated to occur in water crossings located within the project area as part of proposed project.	No
Bexar	Plants	bristle nailwort	Paronychia setacea	Flowering vascular plant endemic to eastern southcentral Texas, occurring in sandy soils	No	There are no sandy soils within the top 17 inches of soil within the project area according to the USDA's web soil survey.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Plants	Buckley tridens	Tridens buckleyanus	Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov	No	There are no juniper-oak woodlands on rocky limestone slopes within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Plants	Burridge greenthread	Thelesperma burridgeanum	Sandy open areas; Annual; Flowering March-Nov; Fruiting March-June	No	There are no sandy soils within the top 17 inches of soil within the project area according to the USDA's web soil survey.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	Yes	The species could potentially occur on silty clay loam soils along streamsides of water crossings within the project area. Moreover, there are TxNDD records showing the occurrence of this species within a one-mile buffer of project area.	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No
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	No	There are no oak woodlands within the project area. The project area is not located on Coastal Bend, in Queen City, or on Llano Uplift.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	No	The project area is not located within the Edwards Plateau, Callahan Divide, or Lampasas Cutplain. The project area is not located in Brewster County	No impact	The project area is outside of the species known range.	No

Species of Greatest Conservation Need

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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	Yes	The water crossings within project area are likely to have gravelly beds given presence of gravelly soils throughout the project area (USDA).	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No
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	No	There are no oak-juniper woodlands on steep rocky banks and ledges.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	No	There are no oak-juniper woodlands on rocky limestone slopes or canyons within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	No	There are no oak woodlands or oak-juniper woodlands or rocky limestone slopes within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	Yes	There are grassy areas within the project area that may have suitable moisture levels preferred by the species	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
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	Yes	The water crossings within project area are likely to have gravelly beds given presence of gravelly soils throughout the project area (USDA). There are no limestone slopes within project area.	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No
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	Yes	The project area is not located on a coastal plain of central or south Texas.	No impact	The project area is outside of the species known range.	No
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	Yes	There are grassy areas on gravelly well drained soils within project area (USDA).	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
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	Yes	The project area is not part of the Post Oak Savanna landscapes. There are no sandhill barrens within the project area. However, there are mowed and maintained grassy areas along the right-of-way which may be suitable for the species.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
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	No	The project area is not located within the Edwards Plateau, Llano Uplift, or Lampasas Cutplain.	No impact	The project area is outside of the species known range.	No
Bexar	Plants	plateau milkvine	Matelea edwardsensis	Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June	No	There are no juniper-oak or oak-juniper woodlands within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	Yes	The mowed and maintained grasses within the project area may provide suitable habitat for the species.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
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	No	There are no grasslands and shrublands within the project area. Grassy areas within mowed and maintained right-of-way are not part of dry sites.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No

Species of Greatest Conservation Need

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination	Explanation for Impact Determination	Presence/ Absence survey conducted?
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. Restricted to narrow part of Rio Grande Plain of Texas and northern Mexico. Specifically, it is known from Jim Wells and Live Oak counties in Texas and Tamaulipas, Mexico (Poole et al. 2007). - *NatureServe*	No	There are no Tamaulipan thorn shrublands or Tamaulipan grasslands within the project area. The project area is not located in Jim Wells, or Live Oak counties in Texas or in Tamaulipas, Mexico.	No impact	The project area is outside of the species known range.	No
Bexar	Plants	spreading leastdaisy	Chaetopappa effusa	Limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, 300-500 m elevation; Perennial; Flowering (May) July-Oct	No	There are no limestone cliffs, ledges, bluffs, steep hillsides, seepy areas, oak-juniper, oak, or mixed deciduous woods.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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.	No	There are no oak-juniper woodlands within the project area. There are deciduous trees within the project area that may provide insects for foraging.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	Yes	The grassy areas within project area near intersection of I-410 and San Pedro Ave may be suitable for the growth of this shrubby species.	No impact	No work is anticipated at the large open grassy areas observed near intersection of I-410 and San Pedro Ave within the project area.	No
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	No	There are no juniper-oak woodlands or shrublands within the project area. There are no dry shelves above creeks within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	No	There are no mesic woodlands, stream terraces, or canyon slopes within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	No	There are no sandy soils within the top 17 inches of soil according to the USDA's web soil survey. There are no deep sand plains, sand hills, grasslands, or oak woods within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	No	There are no juniper-oak woodlands on dry rocky slopes, rock outcrops, or canyons within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Plants	threeflower penstemon	Penstemon triflorus ssp. triflorus	Occurs sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands (Carr 2015).	No	There are no rock outcrops or grasslands associated with juniper-oak woodlands within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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	Yes	There are *Quercus* trees and other woody plants that are maintained as part of landscape areas within the project. These woody plants and trees may provide suitable habitat for this parasitic species.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
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).	No	The project is not located in the Edwards Plateau ecoregion or in north-central Texas.	No impact	The project area is outside of the species known range.	No
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.	No	The project is not located in the Rio Grande Plains region of Texas.	No impact	The project area is outside of the species known range.	No
Bexar	Plants	Wright's milkvetch	Astragalus wrightii	On sandy or gravelly soils; April (Diggs et al. 1999).	Yes	There are gravelly soils within the project area according to the USDA's web soil survey.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No

Species of Greatest Conservation Need

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination	Explanation for Impact Determination	Presence/ Absence survey conducted?
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.	No	There are no forests, fields, forest-brush, forest-field ecotones, or shallow pools of water within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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).	Yes	There are flat cleared and disturbed areas and graded roadways within the project area.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
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.	No	There are no native grassland habitats within the project area. All grassy areas are disturbed.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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.	Yes	There are open grassy areas within the project area at the intersection of I-410 and San Pedro Ave which may be suitable for the species despite being mowed and maintained. There are also stream crossings within the project area where this species may occur.	No impact	No work is anticipated at the large open grassy areas observed near intersection of I-410 and San Pedro Ave within the project area. No work is anticipated to occur in water crossings located within the project area as part of proposed project.	No
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).	Yes	There are flat cleared and disturbed areas and graded roadways within the project area.	May impact	Species preferred habitat does occur within the project area that could be impacted.	No
Bexar	Reptiles	Texas garter snake	Thamnophis sirtalis annectens	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.	No	There are no open areas in the vicinity of streams within the project area. There are modified open areas near streams adjacent to the project area. Species use of habitat at water crossings within project area is anticipated to be temporary and incidental.	No impact	Species preferred habitat does not occur within the project area that could be impacted. Species use of habitat at water crossings within project area is anticipated to be temporary and incidental. No work is anticipated at water crossings within the project area as part of proposed work.	No
Bexar	Reptiles	Texas indigo snake	Drymarchon melanurus erebennus	Terrestrial: Thornbush-chaparral woodland of south Texas, in particular dense riparian corridors. Can do well in suburban and irrigated croplands. Requires moist microhabitats, such as rodent burrows, for shelter.	No	There are no thornbrush-chaparral woodlands of south Texas, no dense riparian corridors, and no suburban or irrigated croplands within the project area. There were no burrows observed within the project area during the field survey conducted on March 1st, 2022.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Reptiles	timber (canebrake) rattlesnake	Crotalus horridus	Terrestrial: Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.	No	There are no swamps, upland pine or deciduous woodlands, abandoned farmlands, limestone bluffs, or sandy top soil within the project area. The floodplains and black clay within the project area do not have dense ground cover which included plants like grapevines or palmettos.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
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.	Yes	There are shallow streams which cross the project area. But there are no prairie grasslands, pastures, fields, sandhills, or open woodlands within the project area.	No impact	No work is anticipated at water crossings within the project area as part of proposed work.	No

Species of Greatest Conservation Need

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination	Explanation for Impact Determination	Presence/ Absence survey conducted?
Bexar	Reptiles	western hognose snake	Heterodon nasicus	Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.	No	There are no shrub encroached grasslands, shortgrass or mixed grass prairies, or arid landscapes within the project area.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No
Bexar	Reptiles	western rattlesnake	Crotalus viridis	Terrestrial: Dry desert and prairie grasslands, shrub desert rocky hillsides; edges of arid and semi-arid river breaks.	No	There are no dry deserts, prairies grasslands, or shrub desert rocky hillsides within the project area. The project area is not part of an arid or semi-arid environment.	No impact	Species preferred habitat does not occur within the project area that could be impacted.	No

Migratory Bird Treaty Act and Bald and Gold Eagle Protection Act Species

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?
American Golden-Plover	*Pluvialis dominica*	NON-BREEDING: short grasslands, pastures, golf courses, mudflats, sandy beaches, and flooded fields (AOU 1983).	Breeds Elsewhere	No	There are no short grasslands, pastures, golf courses, mudflats, sandy beaches, or flooded fields within project area. Mowed and maintained grasses within project area are unlikely to be suitable for the species.	No Take or Kill	Species preferred habitat does not occur within the project area that could be impacted.	No
Kentucky Warbler	*Oporornis formosus*	BREEDING:Humid deciduous forest (Hamel 1992), dense second growth, swamps. Occurs in stands of various ages but is most common in medium-aged forests (Shugart et al. 1978). Prefers forests with a slightly open canopy, dense understory, and well-developed ground cover (Bushman and Therres 1988). Seldom found in conifers. NON-BREEDING: In migration, habitats include forest, woodland, scrub, and thickets. In winter, habitat includes the floor of rain forests; also second growth, forest edge, undergrowth (AOU 1983, Bushman and Therres 1988). - *NatureServe*	Breeds April 20 to August 20	No	There are no humid deciduous forests, dense second growth forests, swamps, medium-aged forests, woodlands, scrub, thickets, or rainforests within the project area.	No Take or Kill	Species preferred habitat does not occur within the project area that could be impacted.	No
Lesser Yellowlegs	*Tringa flavipes*	NON-BREEDING: marshes, ponds, wet meadows, lakes and mudflats (AOU 1983), coastal salinas. Nests in muskeg country, to edge of tundra, in marshes and bogs, clearings or burned-over sections of black spruce forest. The nest is a depression in the ground. It may be located on a slope, far from water (Terres 1980). - *NatureServe*	Breeds Elsewhere	No	There are no marshes, ponds, wet medows, lakes, mudflats, coastal salinas, tundras, bogs, or clearings of black spurce forests within the project area.	No Take or Kill	Species preferred habitat does not occur within the project area that could be impacted.	No
Long-billed Curlew	*Numenius americanus*	NON-BREEDING: in migration and winter occurring also on beaches and mudflats (AOU 1983). - *NatureServe*	Breeds Elsewhere	No	There are no beaches or mudflats within the project area.	No Take or Kill	Species preferred habitat does not occur within the project area that could be impacted.	No
Mountain Plover	*Charadrius montanus*	NON-BREEDING: Preferred winter habitat consists of short-grass plains and fields, plowed fields, and sandy deserts (AOU 1983), and commercial sod farms (New Mexico, Knopf 1996). Alkali flats were the most favored habitat, where available; the use of cultivated land may be a result of loss of native habitats; native habitats may be critical in fall before freshly cultivated fields become available (Knopf and Rupert 1995). - *NatureServe*	Breeds Elsewhere	No	There are no short-grass plains and fields, plowed-fields, cultivated fields, sandy deserts, alkali flats, or commercial sod farms within the project area.	No Take or Kill	Species preferred habitat does not occur within the project area that could be impacted.	No
Prothonotary Warbler	*Protonotaria citrea*	BREEDING: Mature deciduous floodplain, river, and swamp forests; wet lowland forest. Primary habitats are almost always near standing water; swamps that are somewhat open with scattered dead stumps are preferred. Bottomland forests and extensive willow thickets near lakes or ponds are also quite suitable. NON-BREEDING: In migration, habitat includes dry woodland, scrub, thickets, and mangroves (AOU 1983). - *NatureServe*	Breeds April 1 to July 31	No	There are no mature deciduous floodplains, rivers, swamps, wet lowland forests, bottomland forests, extensive willow thickets, dry woodlands, scrub, thickets, or mangroves within the project area.	No Take or Kill	Species preferred habitat does not occur within the project area that could be impacted.	No
Sprague's Pipit	*Anthus spragueii*	Habitat during migration and in winter consists of pastures and weedy fields (AOU 1983), including grasslands with dense herbaceous vegetation or grassy agricultural fields. - *NatureServe*	Breeds Elsewhere	No	There are no pastures, weedy fields, grasslands with dense herbaceous vegetation, or grassy agricultural fields. Larges expanses of mowed and maintained grasslands within the project area are unlikley to be suitable and unlikey to be disturbed by proposed project action.	No Take or Kill	Species preferred habitat does not occur within the project area that could be impacted.	No
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 suitable for nesting within the project area. All trees near water within the project area are fairly short to medium sized. The species may use water crossings near project area for foraging. Any occurrence of species within the project area is anticipated to be temporary and incidental.	No Take or Kill	Species use of habitat in project area is anticipated to be temporary and incidental. No work is anticipated to occur in water crossings located within the project area as part of proposed project. Species is not expected to be impacted.	No

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