



DRINKING WATER STATE REVOLVING FUND
ENVIRONMENTAL INFORMATION DOCUMENT

San Antonio Water System (SAWS)
Dietrich Elevated Storage Tank (EST) Project
TWDB Project No. 62889

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On behalf of:

San Antonio Water System

July 2020



Federal Environmental Review

Environmental Information Document

To be used for projects receiving funding from the Clean Water State Revolving Fund or the Drinking Water State Revolving Fund

TWDB-0801
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Section 1: General Information

Authority (Loan Applicant): San Antonio Water System (SAWS)
TWDB Project No: DWSRF 62889
Project Name: Dietrich Elevated Storage Tank (EST)
Counties where project activities will occur: Bexar

Funding Source/ Loan Number:	Drinking Water State Revolving Funds / 62889 / /	
Total Estimated Project Costs:	\$5,937,800	
TWDB Funded Phases:	<input type="checkbox"/> Planning <input type="checkbox"/> Acquisition <input type="checkbox"/> Design X Construction	
Other Funding Source(s):		
Consultant Project Name/Number (if applicable):	Freese and Nichols, Inc (SWB18277)	
Primary Contact for questions concerning the EID:	Company:	Freese and Nichols, Inc
	Contact Person:	Patrick Garnett
	Mailing Address:	10431 Morado Circle Suite 300, Austin, Texas 78759
	Phone:	512-617-3148
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Project Engineer:	Company:	Freese and Nichols, Inc
	Contact Person:	Ryan Ramsey
	Mailing Address:	9601 McAllister Freeway, San Antonio, TX 78216
	Phone:	210-298-3800
	Email:	Ryan.Ramsey@Freese.com
List of Preparers:		
<ol style="list-style-type: none"> 1. Patrick Garnett, CWB, PWS, CPESC, ISA Certified Arborist 2. Brian King, GISP, RPA 3. Ryan Ramsey, P.E. 4. Erin Kelly 5. 		

Section 2: List of Attachments

Documents lacking required attachments will not be accepted

Identify the project footprint on all maps.

Maps must have adequate resolution and be at an appropriate scale.

Example project maps are provided online at:

<http://www.twdb.texas.gov/financial/instructions/doc/TWDB-1800.pdf>

Many of the resources required by the following list of attachments can be acquired for free online. If you are unfamiliar with the resources identified below or are not sure where to find them, please contact your environmental reviewer for assistance.

Map(s): Show existing structures, potential location(s) of new or upgraded structure(s), and areas(s) that will be disturbed by the project, including construction staging area(s). Provide a scale bar, north arrow, and legend.

Label and Describe: Potentially-impacted environment(s) and site feature(s) (e.g., public/private property, developed or landscaped areas, roads, historic properties, wetlands, forested areas, rivers, streams, 100-year floodplain, prime farmland, wild and scenic rivers, protected areas, above and below-ground utilities, U.S. EPA designated sole source aquifer areas, etc.)

Appendix A: Standard Maps

Regional Location Map	Page: A-1
USGS Topographic Map(s) for Preferred Alternative	Page: A-2
Project footprint or plans/plats	Page: A-3
Geologic Map	Page: A-4
FEMA Floodplain Map(s)	Page: A-5
National Wetlands Inventory Map(s)	Page: A-6

Appendix B: Environmental Setting, Impacts and Mitigation Attachments

Appendix B1 Soils & Prime and Important Farmland (Section 5.3) Page: B-1	<u>NRCS Soil Survey for Proposed Project Area of Interest (Required)</u>		
	X	Map + Table of Soils (Series level)	
	X	Map + Table of Hydric Soils	
	X	Map + Table of Prime & Important Farmlands	
	<u>NRCS Farm Impact Rating (If Applicable)</u>		
	Farm Impact Rating Form	Attached <input type="checkbox"/>	N/A X
Appendix B2 Wetlands, Streams & Waters of the U.S (Section 5.6) Page: B-	<u>Wetland & Streams Impacts Map (If Applicable)</u>		
		Wetland & Streams Impacts Map	Attached <input type="checkbox"/> N/A X
		<u>Wetland Delineation Report (If Applicable)</u>	
	Wetland Delineation Report	Attached <input type="checkbox"/>	N/A X

Section 2: List of Attachments

Documents lacking required attachments will not be accepted

Appendix B3 Biological Resources (Section 5.7) Page: B-3	<u>County List of Rare, Candidate, Threatened and Endangered Species</u> (Required) X USFWS: County List of Federal Candidate, Threatened and Endangered Species X TPWD: County List of State and Federal Rare, Threatened and Endangered Species <input checked="" type="checkbox"/> Potential Impacts Table
Appendix B4 Cultural Resources (Section 5.8) Page: B-	<u>Cultural Resources Report</u> (If Applicable) Cultural Resources Report Attached N/A X
Appendix B5 Hazardous Materials (Section 5.9) Page: B-5	<u>Hazardous Materials</u> (If Applicable) Formal Site Assessment Attached X N/A <input type="checkbox"/>
Appendix B6 Social Implications & Environmental Justice (Section 5.10) Page: B-6	<u>All maps & reports should be generated through the EPA's EJ View Website</u> (Required) X EJ View Map (add a 0.5 mile buffer around the construction area) X ACS Summary Report X Census Summary Report X Environmental Report <u>Census QuickFacts Summary</u> (Required) X City vs. State X County vs. State
Appendix B7 Public Meeting (Section 6) Page: B-	<u>Public Meeting Documentation</u> <input type="checkbox"/> Publisher's affidavit and a copy of the Public Meeting Notice <input type="checkbox"/> Statement signed by applicant - meeting was held in conformance with the Public Meeting Notice. <input type="checkbox"/> List of witnesses <input type="checkbox"/> Written summary of the meeting

Section 3: Project Description

Preferred Action Alternative

For the purposes of this document the project site includes all areas that will be disturbed by the project, including construction staging area(s). The project area includes surrounding areas which may, directly or indirectly, be impacted by the project.

1. Background: Briefly describe the existing system (e.g., treatment processes, capacity of treatment plant, annual average and peak demand flows, etc.).

The project is being developed to improve potable water reliability to San Antonio Water System (SAWS) customers in the central eastern portion of San Antonio. The project consists of design and construction of an elevated water storage tank (EST) on a 2.3-acre parcel at the corner of Dietrich Road and Springfield Road in central northeast San Antonio. Growth of the general population of San Antonio in the immediate area and the need for reliable potable water for industrial and institutional facilities necessitates the development of additional water conveyance services for this location.

Ground disturbing activities proposed at the site include excavation for the EST foundation, which will be approximately six feet deep and 42-feet in diameter. This area will be filled with concrete for the footing of the EST. In addition to the construction of the EST, 600 feet of 16-inch water supply line will be placed along Springfield Road from WW White Road to the EST. An EST overflow will be installed and consists of approximately 125 feet of 30-inch reinforced concrete pipe placed from the EST to an existing storm sewer inlet located on the southern boundary of the three-acre parcel. The water line and concrete pipe will be open trenched. The water line will be placed with approximately five feet of fill over the top of pipe, and excavation depth is anticipated to be approximately six feet. The reinforced concrete pipe will be laid to a grade that will drain by gravity. Depth of excavation for the concrete pipe is not anticipated to be greater than five feet.

The site development also includes two paved twenty-foot wide access driveways from the adjoining streets and a paved area near the foot of the EST for turnaround and maintenance access. Excavation in this area will be less than one foot.

Additional ground disturbing activities proposed at the EST site include a temporary staging area or pipe storage yard located within the three-acre site. This area will be revegetated immediately upon project completion. Likewise, the disturbed right-of-way will be revegetated as the pipe is placed. Portions of Springfield Road will likely be repaved due to construction activity. Construction is anticipated to take less than six months if there are no weather delays.

2. Project Location: Briefly describe the project location (e.g., new undeveloped site, existing treatment plant site, undeveloped portion of an existing site, site adjacent to existing facilities, currently owned, acquisition required, etc.).

The site has been owned and maintained by SAWS for many years. Vegetation has been maintained and the site has been kept clean and visually appealing. The parcel has herbaceous vegetation on approximately $\frac{3}{4}$ of the property and the remainder has scattered trees. Tree cover occurs primarily along the perimeter of the tract. Other than landscape maintenance by SAWS, the tract has remained relatively visually unchanged for the past 25 years.

The area surrounding the proposed site has been developed for a variety of uses. To the south and east are single-family residences on half-acre or larger lots. To the north, on the opposite side of Dietrich Road, is the

Section 3: Project Description Preferred Action Alternative

closed San Antonio ISD - Cameron Elementary School. Immediately to the west is Springfield Road. Lots adjoining Springfield Road also front on WW White Road and consist of freight and trucking companies, automotive repair, salvage, and sales facilities. Other heavy industrial users are found along WW White Road in the vicinity.

Latitude/Longitude: 29° 26' 27.36" N; 98° 24' 13.83" W

Project Address (if applicable): 139 Springfield Road, San Antonio, Texas 78219

3. Project Need & Purpose: What need does the project address? (e.g., improve water quality, increase capacity, inadequate system or system components, increase treatment due to more stringent effluent limits, linear work, etc.)

The Dietrich EST was identified in the SAWS Capital Improvement Program (CIP), which consist of future capital projects that serve to upgrade and ensure appropriate levels of service for both SAWS' water and wastewater infrastructure. The 1.5 million-gallon (MG) EST is needed to meet TCEQ capacity requirements for future growth within the pressure zone and to maintain the current level of service. The EST will also provide increased high flow pressure and system redundancy. This additional elevated storage volume will bring the PZ 828 pressure zone's total to 10.50 MG, which is projected to be adequate for PZ 828 through year 2039. The Dietrich EST requires approximately 600 feet of new 16-inch water main from the tank to the existing PZ 828 system.

Is the proposed project being pursued in response to a compliance order? No

4. Project Description: Description should include project costs, design year and design population.

The proposed project design is scheduled to be completed in 2020 and is anticipated to go to construction in 2021. Project cost for construction is anticipated to be approximately 5.9 million dollars and SAWS has budgeted \$6,594,992. SAWS water service area includes approximately 460,000 people within Bexar, Medina, and Atascosa counties. The project is designed to provide adequate service for the Pressure Zone 828 through 2039.

Is the proposed project part of a larger project? Yes No

If the proposed project is one phase of a larger project, describe the duration and purpose of the larger project.
N/A

5. Waste Disposal: Does the project require sludge/soil/waste disposal? Yes No

If yes, identify the location(s) and method(s) of disposal:

N/A

Section 3: Project Description Preferred Action Alternative

6. **Project Components:** Provide a bulleted list (e.g. install 1,000 linear feet of new 6-8 inch pipeline in existing ROW and easements from the outfall structure in Lake X to the WTP, install new 300,000 gallon ground storage tank at the WTP, demolish existing chemical storage building, etc.).

- Construct 1.5 MG Elevated Water Storage Tank (Dietrich EST) on existing SAWS property and easements
- Install 600 feet of 16-inch of water supply line from existing SAWS water line to EST
- Place 125 feet of 30-inch reinforced concrete pipe for an emergency water overflow
- Construct paved driveway and parking area for access and maintenance to EST
- Revegetate disturbed areas along pipeline and near EST

7. **Project Magnitude:**

- i. Current population of service area: PZ 828 serves approximately 80,000
- ii. Anticipated population of service area in 20 years: PZ 828 estimated population in 20 years, 96,000
- iii. Will the proposed project service the entire population increase? X Yes No

8. **Project Schedule:**

Anticipated Completion of Environmental Review: 2020

Completion of Acquisition: Complete

Completion of Permitting: 2020

Completion of Design: 2020

Start of Construction: 2021

Construction Completion: 2022

9. **Project Costs:** Provide an estimate of the cost of the project. \$5,937,800

10. **Other Projects:** Provide a description of any other projects in progress that may be affected by the proposed project (e.g., TxDOT plans for Road Construction, etc.).

TxDOT Project Tracker was reviewed and no TxDOT projects are scheduled to occur within the project area. No other projects are known that would be affected by the proposed construction project.

Section 4: Alternative Analysis

No-Action Alternative

Environmental Impact Description

Provide a qualitative description of the environmental impacts of the no-action alternative and compare the impacts to that of the preferred alternative. (e.g., WTP would remain out of compliance with TCEQ primary drinking water standards, leaky on-site septic systems would continue to contaminate surface water, etc.)

With the no-action alternative, potable water reliability and water pressure could decrease long-term. Short term impacts could include stress on the existing water system, reduced fire protection flow, and potential noncompliance with TCEQ capacity with nominal population growth.

Environmental Impact Analysis

Please indicate whether the direct impacts of the no-action alternative on the following resources are greater than, less than or the same as the direct impacts of the preferred alternative on the same resource.

Land Use

Change in land use and land cover is: Greater Less Same

Prime and Important Farmland

Impacts to prime and important farmland are: Greater Less Same

Water Resources

Impacts to surface water quality are: Greater Less Same

Impacts to groundwater quality and quantity are: Greater Less Same

Impacts to floodways or floodplains are: Greater Less Same

Impacts to wetlands are: Greater Less Same

Vegetation and Habitat

Impacts to trust resources are: Greater Less Same

Impacts to wildlife are: Greater Less Same

Impacts to native vegetation is: Greater Less Same

Impacts to endangered species habitat are: Greater Less Same

Cultural Resources

Impacts to cultural resources or historic properties are: Greater Less Same

Air Quality

Effects on air quality are: Greater Less Same

Environmental Justice

Impacts to Low-income or Minority Populations are: Greater Less Same

Section 4: Alternative Analysis

No-Action Alternative

Secondary and Cumulative Impacts: Considering resources that the no-action alternative will impact, identify any past, present or reasonably foreseeable future projects which impact these same resources. This answer will provide important contextual information.

Projects within the SAWS service area that will impact similar resources are other new elevated storage tanks, ground storage tanks, new pump station and existing pump station expansion, and water pipeline projects. These projects provide upgraded service to existing customers and expand service to new service partners. Ongoing wastewater treatment plant expansion and lift station projects, force main, and gravity lines will also impact similar natural resources. Furthermore, other utilities such as telephone, cable television, and fiber optic cable will update and expand their services resulting in similar impacts.

Acceptance/Rejection

Alternative: Accepted Rejected

Rationale for Acceptance/Rejection

Discuss the rationale for acceptance/rejection of the no-action alternative, including financial, engineering and environmental considerations (e.g. cost comparison, reliability of alternative, complexity of alternative, significant environmental effects, legal or institutional constraints, etc.):

The no-action alternative has been rejected because it would not meet the purpose and need for the water supply system to increase high flow pressure and system redundancy and to comply with TCEQ capacity requirements for future growth. The continued growth within PZ 828 will require additional infrastructure to provide continued service at TCEQ anticipated level of quality. The Dietrich EST project is designed to provide service meeting TCEQ standards for the area through 2039.

Section 4: Alternatives Analysis

Alternative Not Selected

Attach additional alternative sheets as necessary

Description

Please provide a description of this alternative:

The Alternative Not Selected is a site configuration where the alignment of the 16-inch waterline would be near the southern boundary of the proposed site, which would be a more direct route to the proposed location of the EST than the preferred 16-inch waterline alignment. The Alternative Not Selected waterline alignment would cross a wooded area.

Alternative still in consideration? *Yes No

**If yes, please note that the level of detail provided for this alternative should be commensurate with the level of detail provided for the preferred alternative presented in this document. Please work with your Environmental Reviewer to scope this document appropriately in order to prevent project delays.*

Environmental Impact Description

Provide a qualitative description of the environmental impacts (adverse and beneficial) of this alternative and compare the impacts to that of the preferred alternative. Specify temporary versus permanent impacts.

The Alternative Not Selected, which is a 16-inch waterline placed near the southern boundary of the site, would be approximately 50 linear feet shorter than the preferred waterline alignment, although the Alternative Not Selected would cross a wooded area that would require a significant amount of tree removal. The preferred alignment would be adjacent to the road right-of-way within previously cleared areas, and as such, the preferred alignment would not remove trees in the wooded area. Temporary environmental impacts like dust emissions during construction would be similar to the preferred alternative because similar construction activities would be needed for both alternatives.

Section 4: Alternatives Analysis

Alternative Not Selected

Attach additional alternative sheets as necessary

Environmental Impact Analysis

Please indicate whether the direct impacts of the alternative not selected on the following resources are greater than, less than or the same as the direct impacts of the preferred alternative on the same resource.

Land Use

Change in land use and land cover is: Greater Less Same

Prime and Important Farmland

Impacts to prime and important farmland are: Greater Less Same

Water Resources

Impacts to surface water quality are: Greater Less Same

Impacts to groundwater quality and quantity are: Greater Less Same

Impacts to floodways or floodplains are: Greater Less Same

Impacts to wetlands are: Greater Less Same

Vegetation and Habitat

Impacts to trust resources are: Greater Less Same

Impacts to wildlife are: Greater Less Same

Impacts to native vegetation is: Greater Less Same

Impacts to endangered species habitat are: Greater Less Same

Cultural Resources

Impacts to cultural resources or historic properties are: Greater Less Same

Air Quality

Effects on air quality are: Greater Less Same

Environmental Justice

Impacts to Low-income or Minority Populations are: Greater Less Same

Section 4: Alternatives Analysis

Alternative Not Selected

Attach additional alternative sheets as necessary

Secondary and Cumulative Impacts: Considering resources that this alternative will impact, identify any past, present or reasonably foreseeable future projects which impact these same resources. This answer will provide important contextual information.

Future projects with the Alternative Not Selected that would affect the same resources would be periodic maintenance of the EST and associated waterlines. No other future projects that would impact the same resources are known at this time.

Acceptance/Rejection

Alternative: Accepted Rejected

Rationale for Acceptance/Rejection

Discuss the rationale for acceptance/rejection of this alternative, including financial, engineering and environmental considerations:

The Alternative Not Selected would impact relatively similar amounts of land at similar financial costs, but it would impact significantly more trees than the proposed alternative. In order to avoid the removal of multiple trees, the Alternative Not Selected was rejected.

Section 4: Alternatives Analysis
Alternative Not Selected

Attach additional alternative sheets as necessary

Section 4: Alternatives Analysis
Selection of the Preferred Action Alternative

Discuss the rationale for why the proposed project was chosen as the preferred alternative:

The proposed project was selected because it would meet the purpose and need of meeting TCEQ capacity requirements for projected growth within the pressure zone and to maintain the current level of service. It was selected in lieu of the Alternative Not Selected because it would avoid the removal of multiple trees within the proposed site.

Environmental effects in the proposed site are minimal compared to other locations because SAWS already owns and maintains the property, and minimal tree disturbance is expected. No wetlands or waters of the U.S. are within the proposed project site. Drainage patterns in the proximity are proposed to remain the same.

Section 5: Environmental Settings, Impacts and Mitigation

5.1: Land Use

Existing Conditions

Will the project require land use conversion? Yes No

If yes, explain:

Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses.

Currently the land is maintained by SAWS as municipal land. The proposed project will reduce the amount of vegetation coverage at the location but it will continue to be utilized and maintained by SAWS for municipal purposes.

Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project?

Yes No

If yes, describe additional services needed:

A 16-inch water line will be placed from existing infrastructure approximately 650 feet to the new elevated water storage tank. This will be located underground and should not create any permanent impacts.

Impacts

Describe direct impacts of the project (adverse and beneficial) on land use. Specify temporary versus permanent impacts.

Temporary impacts will include decreased vegetated area due to construction disturbance and potentially reduced storm water quality as a result of soil disturbance. Construction dust and noise will also increase temporarily.

The impervious footprint of the EST and access road will permanently decrease the vegetative area at the site. Some trees may be trimmed or removed due to security needs.

Permanent beneficial impacts include a stabilized and maintained site with approximately 1.25 acres of vegetative cover within the city; including several mature trees.

Mitigation Measures

Mitigation Measures for Project Environmental Impacts? Yes Not applicable

If yes, list all mitigation measures in Section 5.14.

Section 5: Environmental Settings, Impacts and Mitigation

5.2: Geology

Existing Conditions

Physiographic Province:	<input checked="" type="checkbox"/> Gulf Coast Plains	<input type="checkbox"/> Central Texas Uplift	<input type="checkbox"/> Grand Prairie
	<input type="checkbox"/> Edwards Plateau	<input type="checkbox"/> North-Central Plains	<input type="checkbox"/> High Plains
	<input type="checkbox"/> Basin and Range		

Are there faults within the project's area of interest?	<input type="checkbox"/> Yes
	<input checked="" type="checkbox"/> No

Is the project located in a Karst or Pseudo-Karst Zone?	<input type="checkbox"/> Yes
	<input checked="" type="checkbox"/> No

Include the names and brief descriptions of the geologic formations in the project's area of interest.

Fluviatile terrace Deposits, includes sand, silt, clay, and gravel in various proportions, with gravel more predominant in older, higher terrace deposits. Locally indurated with calcium carbonate (caliche) in terraces along streams. In upland regions unit includes fluvial terrace deposits, undivided. Light-brown, reddish-brown, gray, or yellowish-brown, gravelly quartz and lithic sand and silt to sandy gravel. Deposits become increasingly fine grained on Coastal and Nueces Plains. Locally, calcium carbonate-cemented quartz sand, silt, clay, and gravel intermixed and interbedded. Low terraces of major rivers are capped by 2-4 m of clayey sand and silt. Sandy gravel on higher terraces varies somewhat in composition from river to river. Gravel commonly is rounded to angular limestone and chert pebbles and cobbles, some boulders.

Discuss any relevant topographical and geological features (e.g. salt domes, sink holes, shallow limestone formations, karst conditions, cave systems, etc.).

No significant or relevant topographic or geologic features identified at the site.

Impacts

Describe direct impacts of geology on the proposed project. Please elaborate on all items checked "Yes" above:

Impacts include excavation for the EST footing through the layer of clayey sand and silt to provide a stable anchor. No additional impacts are anticipated at this time.

Mitigation Measures

Mitigation Measures for Project Environmental Impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Not applicable
If yes, list all mitigation measures in Section 5.14.		

Section 5: Environmental Settings, Impacts and Mitigation

5.3: Soils & Prime and Important Farmland

Soils	
Is soil contamination present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does soil type present any constraints to the project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes to either above, explain (if redundant with information provided in the Hazardous Materials section reference that section):	
Will soil be moved offsite? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, how will it be disposed of? Excess soil would likely be utilized at an approved upland site as fill material, or it could be used on site if volume and soil class is appropriate.
Will soil become contaminated as a result of the proposed project? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, explain:
Prime and Important Farmland	
Does the project area contain prime and important farmlands?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, does either of the following exemptions apply? <input type="checkbox"/> Exempt – corridor subsurface project (e.g., buried water, sewage, and/or electric lines). <input checked="" type="checkbox"/> Exempt – previously converted site (e.g., existing water and wastewater treatment plant sites).	
If the project area contains prime and important farmlands and does not qualify for the exemptions listed above, include a completed version of the NRCS' Farmland Conversion Impact Rating Form AD-1006 <input type="checkbox"/> Attach Form AD-1006 to Appendix B1	
Impacts	
Will prime and important farmland be directly impacted by the project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe direct impacts of the project on prime and important farmland:	
The proposed project area has been designated as "land committed to urban development" and is exempt from provisions of FPPA, and no further consideration from protection is necessary.	
Mitigation Measures	
Mitigation Measures for Project Environmental Impacts? If yes, list all mitigation measures in Section 5.14.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable

Section 5: Environmental Settings, Impacts and Mitigation

5.4: Water Resources

Existing Conditions

What river basin(s) is the proposed project located in?

San Antonio

What major/minor aquifers are located in the greater project area?

The major aquifers in the area are Edwards and Carrizo-Wilcox. No minor aquifers included in the greater project area

Are any of these a sole source aquifer?

Yes No

Water supply(ies):

Surface water(s):

Groundwater(s):

San Antonio

Water Well Projects

Does the project involve the installation of any water wells?

Yes No

If yes, provide the depth to ground water, duration and quantity of water to be extracted, and potential affects to the public water supply:

N/A

Will the project require test wells?

Yes No

Will any existing water well(s) be abandoned?

Yes No

If yes, discuss best management practices that will be used to abandon the existing well(s):

N/A

Impacts to Water Resources

Will water resources be directly impacted by the project?

Yes No

Describe direct impacts (adverse and beneficial) to surface water quality and groundwater quality/quantity (surface water runoff, erosion, sedimentation, temporary loss of vegetation cover, etc.). Specify temporary versus permanent impacts.

The project site is located in uplands. The direct impact to surface water would likely be limited to the amount of sediment that may run off site during heavy rain events while construction is in progress. Stormwater best management practices are proposed to be implemented to manage stormwater runoff during construction.

Will the project include new or relocated discharge site(s)?

Yes No

Will the project require an amendment to an existing TCEQ discharge permit?

Yes No

If yes, discuss the nature of the permit changes:

N/A

Section 5: Environmental Settings, Impacts and Mitigation

5.4: Water Resources

If the project requires a new permit or a permit amendment, list all stream segment(s) found at and immediately downstream of the proposed discharge sites. Source: TCEQ list of stream segments and water quality data.

Stream Segment ID	Classification	Impaired?	Reason for Impairment
N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Mitigation Measures

Mitigation Measures for Project Environmental Impacts? Yes Not applicable
 If yes, list all mitigation measures in Section 5.14.

Section 5: Environmental Settings, Impacts and Mitigation

5.5: Topography and Floodplains

Topography		
Minimum Elevation in Project Area (MSL):	Maximum Elevation in Project Area (MSL):	
663	665	
Briefly describe the topography in the project area (e.g., gently rolling hills, dominant drainage to the west via tributaries to the Brazos River):		
The project area is generally flat, and drainage patterns flow generally to the south towards the storm water system of San Antonio.		
Discuss any relevant topographical features (e.g. playa lakes).		
No relevant topographic features.		
Floodplains & Floodways		
Is the project site located in a 100-year floodplain?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Partial
If yes, list all streams with floodplains in project area. Specify whether the project will be located within the 100-year floodplain and/or floodway(s) of these streams.		
Stream	Project in 100-year floodplain?	Project in floodway?
N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do the communities (cities and/or counties) in which the project will be constructed participate in the National Flood Insurance Program?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partial
List all participating cities and counties		List all non-participating cities and counties
San Antonio		
Bexar County		
Impacts		
Will floodplains or floodways be directly impacted by the project?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe direct impacts of the project (adverse and beneficial) on floodplains and floodways. Specify temporary versus permanent impacts:		
N/A		
Mitigation Measures		
Mitigation Measures for Project Environmental Impacts?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
If yes, list all mitigation measures in Section 5.14.		

Section 5: Environmental Settings, Impacts and Mitigation

5.6: Wetlands, Streams, and Waters of the United States

Information included in this template represents baseline information pertinent to the majority of projects. Regulatory agencies, including the USACE, may require additional information to determine permitting or mitigation requirements.

List all applicable U.S. Army Corps of Engineers permits for the project (general and/or individual):
No waters of the U.S. would be impacted by the project. No USACE permit is required.

Will any of the applicable permits require pre-construction notification? Yes No

If yes, which one(s): N/A

Are streams present on the project site or in the project area (perennial, ephemeral, intermittent)?
 Yes No

If yes, list all streams in the project area.

N/A

Are wetlands present on the project site or in the project area? Yes No

If yes, discuss the type and quality of wetlands (e.g., forested palustrine, emergent riverine):

N/A

Section 5: Environmental Settings, Impacts and Mitigation

5.6: Wetlands, Streams, and Waters of the United States

Has a site wetlands/waters delineation or jurisdictional determination been performed using the applicable USACE Wetland Delineation Manual*, including regional supplements**?

Yes: If Yes, has it been verified by the USACE? Yes No
 No

*Environmental Laboratory. (1987). "Corps of Engineers Wetlands Delineation Manual". Technical Report Y-87-1. U.S. Army Engineers Waterways Experimental Station, Vicksburg, MS.

**The manual is to be used with the appropriate regional supplement. These supplements and the manual can be found on the following website:

http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg_supp.aspx

If yes, summarize the findings below and attach a copy of the field survey to Appendix B2. **If no**, describe the basis for above statements regarding presence or absence of wetlands and waters of the U.S..

No Waters of the U.S. are mapped or were identified within the project site. No wetlands or potentially jurisdictional waters were located with the proposed project site.

Impacts

Will wetlands be impacted? Yes No | Will streams be impacted? Yes No

Are any of the impacted wetlands/streams in the project area tidally influenced? Yes No

Describe direct impacts of the project (adverse & beneficial) on streams and wetlands (e.g., fill, dredging, dewatering, surface water runoff, other pollutants, etc.). Specify temporary versus permanent impacts.

No impacts to Waters of the U.S. are proposed due to the absence of potential Waters of the U.S. within the proposed project site.

Section 5: Environmental Settings, Impacts and Mitigation

5.6: Wetlands, Streams, and Waters of the United States

Stream/Wetland Impacts (if applicable) *add rows if needed

This section must be accompanied by a Stream/Wetland Impact Map:

The map must include a topographic background with footprint of the project overlain. Assign a number to each stream/wetland in the project footprint and label each on the map (e.g., S1, S2, W1, W2).

Attach the map to Appendix B2

Stream Impacts:

Include all streams in project footprint even if impact is zero feet

# Keyed to Map (S1, S2,...)	Temporarily impacted		Permanently impacted	
	All Streams [linear ft]	Potential Waters of U.S. (streams only) [linear ft]	All Streams [linear ft]	Potential Waters of U.S. (streams only) [linear ft]
N/A				
Total Stream Impacts (feet):				

Wetland Impacts:

Include all wetlands in project footprint even if impact is zero acres.

# Keyed to Map (W1, W2,...)	Temporarily impacted		Permanently impacted	
	All Wetlands [ac]	Potential Waters of U.S. (wetlands only) [ac]	All Wetlands [ac]	Potential Waters of U.S. (wetlands only) [ac]
N/A				
Total Wetland Impacts (acres):				

Mitigation Measures

Mitigation Measures for Project Environmental Impacts?

 Yes

 Not applicable

If yes, list all mitigation measures in Section 5.14.

Section 5: Environmental Settings, Impacts and Mitigation

5.7: Biological Elements

Ecoregion:	<input type="checkbox"/> Arizona/New Mexico Mtns. <input type="checkbox"/> Chihuahuan Deserts <input type="checkbox"/> High Plains <input type="checkbox"/> Southwestern Tablelands	<input type="checkbox"/> Central Great Plains <input type="checkbox"/> Cross Timbers <input type="checkbox"/> Edwards Plateau <input type="checkbox"/> Southern Texas Plains	<input type="checkbox"/> Texas Blackland Prairies <input type="checkbox"/> East Central Texas Plains <input type="checkbox"/> Western Gulf Coastal Plain <input checked="" type="checkbox"/> South Central Plains
<p>Using USFWS and TPWD County Lists of Rare, Candidate, Threatened and Endangered Species, create a table of potential impacts with the following columns:</p> <p>(1) Species (common and scientific names), (2) State/federal protection status, (3) Habitat, (4) Presence of Critical Habitat, (5) Project Site Suitability, and (6) Potential Impacts of Project</p> <p>Attach the Potential Impacts Table to Appendix B3</p>			
Has a biological field survey been performed?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>If yes, summarize the finding below. Attach report to Appendix B3, if applicable – exclude report from publicly available documents to protect location sensitive information.</p> <p>Site is located in a developed, urbanized area, and there is only limited, fractured, potential habitat available for wildlife. There is no preferred habitat for rare species.</p>			
Are any parks, recreational areas, forest preserves, grassland preserves, wildlife refuges, wild or scenic rivers, karst faunal regions or zones, or nature preserves (federal, state or local; public or private) in or near the project area?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, list and describe proximity to project site: N/A			
Briefly describe the vegetation and wildlife, including aquatic species, present in the project site and project area. * Do not include protected species addressed in the potential impacts table.			
The project area is predominantly invasive grassland consisting of Bermudagrass and Johnsongrass. Some relict areas have buffalograss, sideoats grama, and dallis grass. Forbs include evening primrose, plantago, and several Medicago (bur clover) species. The perimeter is lined by sugarberry, pecan, and elm trees. No wildlife other than avian species was observed during the field visit. Avian species observed included grackles, northern mockingbird, European starling, white-winged dove, rock dove, and English sparrow.			
Impacts			
Discuss potential impacts (adverse and beneficial) to trust resources, wildlife and natural vegetation, including habitat. Provide information about the nature, extent, duration and location of the impacts. Specify temporary versus permanent impacts. * Do not include protected species already addressed in the potential impacts table.			
Minimal permanent impacts will occur to the vegetation at the site. SAWS has maintained (mowed, trimmed trees) the site for multiple years and this maintenance is proposed to continue. Temporary impacts would include exposed soil surface which may lead to limited amounts of soil erosion. However, the site disturbance may lead to additional seed resources for wildlife.			

Section 5: Environmental Settings, Impacts and Mitigation

5.7: Biological Elements

If present in or near the project area, discuss potential impacts to any parks, recreational areas, forests preserves, grasslands preserves, wildlife refuges, wild or scenic rivers, karst faunal regions or zones, or nature preserves (federal, state or local; public or private):

No biological elements are present near the project site.

Mitigation Measures

Mitigation Measures for Project Environmental Impacts? Yes Not applicable
If yes, list all mitigation measures in Section 5.14.

Section 5: Environmental Settings, Impacts and Mitigation

5.8: Cultural Resources

Have you notified the State Historic Preservation Officer (SHPO) at the Texas Historical Commission that you intend to use the NEPA process to comply with Section 106 of the National Historic Preservation Act? Yes No

Identify parties that were consulted regarding cultural resources, including Tribal Historic Preservation Officers (THPO), the federal Advisory Council on Historic Preservation (ACHP), local governments, or any other interested parties.

Coordination with the Texas Historical Commission (THC) will be conducted prior to construction as required.

Has an archeologist and/or an architectural historian performed a desktop review of the proposed project? Yes No

Identify cultural resources/historic properties (included in or eligible for inclusion in the National Register of Historic Places) within the proposed project's area of impact.

No cultural resources/historic properties are known at this time to occur within the proposed project area.

Has an archeological and/or architectural survey been conducted? Yes No

If Yes, briefly summarize the results of the report(s) and attach them to Appendix B4, if applicable – exclude report from publicly available documents to protect location sensitive information.

Does the project have the potential to affect significant cultural resources/historic properties? Yes No

If you have determined that historic properties will not be impacted, explain how this conclusion was reached. The potential to impact cultural resources is unknown at this time. However, no cultural resources/historic properties are known to occur within the proposed project area. Additional coordination with the THC will be conducted prior to construction

Section 5: Environmental Settings, Impacts and Mitigation
5.8: Cultural Resources

Describe direct impacts (adverse and beneficial) of the project on cultural resources/historic properties. Specify temporary versus permanent impacts.

The potential to impact cultural resources is unknown at this time.

Mitigation Measures

Mitigation Measures for Project Environmental Impacts?

Yes

Not applicable

If yes, list all mitigation measures in Section 5.14.

Section 5: Environmental Settings, Impacts and Mitigation

5.9: Hazardous Materials

The TWDB does not fund the testing, remediation, removal, disposal, or related work for contaminated or potentially contaminated material.

Is there a Superfund Site in the project area or in an area associated with the proposed work (e.g., Superfund site upstream of project activities in a floodplain)?

No Superfund sites were identified in the vicinity or within a floodplain upstream.

Was a site assessment conducted?

Yes No

If a formal site assessment was conducted please attach the report and/or data search to Appendix B5.

Attached
 Not Applicable

If an informal site assessment was conducted, please briefly describe methods and results. Make sure to identify any potential environmental hazards located on the site due to past site uses (e.g. soil contamination or proximity to nearby hazardous liquid or gas pipelines) :

A full review of potential environmental hazards was conducted and concluded with a Phase I Environmental Site Assessment. Review of the Phase 1 Environmental Site Assessment Report indicated that no evidence of soil contamination was observed within the proposed project limits.

Mitigation Measures

Mitigation Measures for Project Environmental Impacts?

Yes Not applicable

If yes, list all mitigation measures in Section 5.14.

Section 5: Environmental Settings, Impacts and Mitigation

5.10: Social Implications & Environmental Justice

Social Implications

Will land acquisition for the project require the use of eminent domain? Yes No

If yes, describe:

N/A

Will people or businesses be relocated as a result of this project? Yes No

If yes, describe the extent and nature of the relocations.

N/A

Will the project cause an increase in resident's monthly service rates? Yes No

If yes, provide an estimate of an average monthly residential bill and the anticipated monthly residential increase required to finance the debt.

Average Monthly User Rate: \$
Anticipated Increase: \$

Will the project require an increase in taxes to finance the debt? Yes No

If yes, provide an estimate of the increase required:

N/A

Environmental Justice

Area	Population	% Minority	% Below the Poverty Level/ Per Capita Income
State	28,995,881	58.5	14.9% / \$30,143
County: BEXBEXBexar	2,003,554	72.6	17.2% / \$26988
City: San Antonio	1,547,253	75.2	18.6% / \$25.091
Project Area (0.5 mile buffer)	750	92%	52% / \$14.519

Does the project area have a portion of the population, greater than the city, county or state average, who are members of a racial/ethnic minority category or who have incomes less than or equal to the state's official poverty level?

Yes No

Impacts

Will the project disproportionately impact low-income or minority populations? Yes No

Please explain: The proposed project site is within a parcel owned by SAWS and would not disproportionately impact low-income or minority populations. The proposed project would provide additional water capacity to all populations within the service area.

Mitigation Measures

Mitigation Measures for Project Environmental Impacts? Yes Not applicable

If yes, list all mitigation measures in Section 5.14.

Section 5: Environmental Settings, Impacts and Mitigation

5.11: Other Potential Impacts or Requirements

1. Air Quality: Is the project in a maintenance or non-attainment area for any priority air pollutant under the federal Clean Air Act?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, describe the impact the project will have on ambient air quality. The project area is located within the Bexar County which is listed as a "Marginal Non-Attainment" for Ozone (O3). The potential impact on ambient air quality related to suspension of dust and exhaust from construction equipment is expected to occur temporarily during construction. These potential impacts are expected to be minor and temporary.	
2. Scenic Views: Will the project impact scenic views or vistas during construction or operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, indicate which scenic views or vistas will be impacted and discuss adverse impacts. Specify temporary versus permanent impacts. N/A	
3. Traffic: Will construction of this project involve rerouting or controlling traffic?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe traffic changes and how long traffic will be disrupted: N/A	
4. Other Potential Impacts: If the project may cause any adverse impacts not addressed by items 1-3, identify and discuss them here (e.g., odor, prevailing winds, noise, blasting, night work, etc.):	
Dust emissions and construction noise are expected to occur temporarily during construction. These potential impacts are expected to be minor and temporary.	
Mitigation Measures	
Mitigation Measures for Project Environmental Impacts? If yes, list all mitigation measures in Section 5.14.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable

Section 5: Environmental Settings, Impacts and Mitigation

5.12: Secondary and Cumulative Impacts

Considering resources that your project will impact, identify any past, present or reasonably foreseeable future projects which impact these same resources. This answer will provide important contextual information.

The proposed EST site is within a previously developed, urban area within the City of San Antonio. The proposed project is designed to provide increased high flow pressure and system redundancy to meet the system needs through 2039. Long-term population growth within the City of San Antonio is expected, and therefore, system demands are expected to increase. Based on the previously developed nature of the area, the proposed project is not expected to result in significant adverse secondary or cumulative impacts to the area.

Mitigation Measures

Mitigation Measures for Project Environmental Impacts?

Yes

Not applicable

If yes, list all mitigation measures in Section 5.14.

Section 5: Environmental Settings, Impacts and Mitigation**5.13: Standard Mitigation, Precautionary Measures and Best Management Practices**

Describe any standard mitigation, precautionary measures and best management practices to be used during project construction (e.g., storm water pollution prevention plan, re-vegetation, dust and siltation control, establish original grades in floodplains, etc.).

Best management practices (BMPs) are proposed to be implemented to mitigate the potential for soil particles to become part of the storm water flow pattern. Installation of silt fences, mulch socks, stabilized construction entrances/exits, and vegetation establishment are examples of potential BMPs to be implemented to mitigate dispersion of soil particles. Sanitary facilities, dust control, and debris and trash containers are proposed to be used to keep the site clean and safe.

Similarly, per TPWD recommendations, trenches are proposed to be closed when inactive, as practicable. Silt fence could also be used along the perimeter to exclude reptiles and amphibians from the construction zone.

Section 5: Environmental Settings, Impacts and Mitigation

5.14: Mitigation Measures

Provide a list of potential adverse impacts of the proposed project and a description of how those impacts will be avoided, minimized, or mitigated. This list will be used to develop conditions for the environmental determination issued by the TWDB. Please ensure the information is consistent with what was provided to regulatory agencies and incorporates applicable agency recommendations. When responding to recommendations provided by regulatory agencies, identify which are feasible and which will not be implemented.

Impact:	Recommended/Required by What Entity? (if applicable)	Mitigation Measures Description:
<i>Example:</i> <i>Loss of 5 acres of forested wetland</i>	<i>Example:</i> <i>USACE</i>	<i>Example:</i> <i>Purchase 10 credits from ABC Wetland Bank</i>
Dust emissions, erosion, and sedimentation	TCEQ	A Stormwater Pollution Prevention Plan (SWPPP) will be implemented including erosion, sedimentation, and dust control best management practices.
Construction	N/A	Pipeline construction will be scheduled for day-time hours
Open-cut trench construction	TPWD	Open trenches will be covered, as practicable, when construction activities are not active

Section 5: Environmental Settings, Impacts and Mitigation

5.15: References

EJView. United States Environmental Protection Agency. <http://epamap14.epa.gov/ejmap/entry.html>

Geology Map Viewer. United States Geological Survey. <https://tx.usgs.gov/texasgeology/>

Karst Regions of Texas. Texas Speleological Survey.
http://www.texasspeleologicalsurvey.org/karst_caving/karst_regions.php

Physiographic Map of Texas. Bureau of Economic Geology.
<http://www.beg.utexas.edu/UTopia/images/pagesizemaps/physiography.pdf>

Rare, Threatened, and Endangered Species. Texas Parks and Wildlife.
https://tpwd.texas.gov/landwater/land/maps/gis/ris/endangered_species/index.phtml

Sole Source Aquifer Map. EPA. <https://www.epa.gov/dwssa>

Texas Aquifers. Texas Water Development Board. <https://www.twdb.texas.gov/groundwater/aquifer/>

United States Department of Agriculture. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

Section 6: Public Participation

PUBLIC MEETING

1. Does the project or activities involve a probable or known public controversy? Yes No
If yes, please contact your TWDB environmental reviewer for the public hearing guidance.

 2. **Public Meeting Documentation**
 - Publisher's affidavit and a copy of the notice
 - Statement signed by applicant: meeting was held in conformance with the Public Meeting Notice.
 - List of witnesses
 - Written summary of the meeting

 3. **Were adverse comments about any aspect of the project received?** Yes No
If yes, describe how they were resolved:
-

Section 7: Agency Coordination

When coordinating with an agency, send hard copies by public carrier with delivery confirmation requested. Retain copies of those confirmations. When a response is not received from an agency, documentation of the delivery must be included with the coordination materials submitted to the TWDB. All agency coordination should be included in Appendix C and should be presented in the same order as the following table.

Mailing addresses for the following agencies are provided online at:

<http://www.twdb.texas.gov/financial/instructions/doc/addresses.pdf>

Uniform Project Notification Requirements

Bureau of Reclamation	<input checked="" type="checkbox"/> Sent	<input type="checkbox"/> Response (Not required)	Page: C-
Bureau of Land Management	<input checked="" type="checkbox"/> Sent	<input type="checkbox"/> Response (Not required)	Page: C-
Intergovernmental Review: Depending on the nature and location of the proposed project, notification should be sent to the City Mayor, County Judge or both.	<input checked="" type="checkbox"/> Sent	<input type="checkbox"/> Response (Not required)	Page: C-

Uniform Agency Coordination Requirements

Texas Historical Commission	<input checked="" type="checkbox"/> Sent	<input type="checkbox"/> Response	Page: C-
U.S. Army Corps of Engineers	<input checked="" type="checkbox"/> Sent <input type="checkbox"/> Response		Page: C-
Texas Parks and Wildlife Department Wildlife Habitat Assessment Program	<input checked="" type="checkbox"/> Sent <input type="checkbox"/> Response <input type="checkbox"/> Response to TPWD recommendations indicating which recommendations will be implemented.		Page: C-

Circumstantial Requirements

Use the following questions to determine if coordination is required regarding potential impacts to the resource identified. If Yes, provide the page number for coordination materials.

<p>Will the project adversely affect federally listed threatened or endangered species or their critical habitat?</p> <p><input type="checkbox"/> No effect (no coordination required)</p> <p><input checked="" type="checkbox"/> Not likely to adversely affect</p> <p><input type="checkbox"/> Likely to adversely affect</p>	<p>U.S. Fish and Wildlife Service Division of Ecological Services</p> <p><u>If not likely</u>, concurrence that adverse effects have been adequately mitigated recommended</p> <p><u>If likely</u>, formal Section 7 consultation required</p> <p>Page: C-</p>
<p>Will the project impact prime and important farmlands?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Exempt (pipeline project, existing site)</p>	<p>U.S. Department of Agriculture Natural Resources Conservation Service</p> <p>If Yes, Page: C-</p>

Section 7: Agency Coordination

<p>Is the project located within or directly adjacent to a national forest or grasslands? Does the project share a surface water connection that may impact these resources?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>U.S. Forest Service National Forest or Grasslands If Yes, Page: C-</p>
<p>Is the project located within or directly adjacent to National Park Service Lands? Does the project share a surface water connection that may impact these resources? Does the proposed project have the potential to impact view sheds, natural sounds, night skies, or air quality of any NPS units or National Historic Landmarks?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>National Park Service Environmental Quality Division If Yes, Page: C-</p>
<p>Wild and Scenic Rivers: coordination is required for all projects located in one of the following counties: El Paso, Brewster, Crane, Crocket, Culberson, Edwards, Hudspeth, Jeff Davis, Loving, Pecos, Presidio, Reeves, Schleicher, Sutton, Terrell, Upton, Val Verde, Ward and Winkler.</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>National Park Service Big Bend National Park, Rio Grande Wild & Scenic River If Yes, Page: C-</p>
<p>Is the project site within the floodplain or adjacent to the channel of the Rio Grande River OR located in, or directly adjacent to, the IBWC's flood control projects in Texas?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>International Boundary and Water Commission (U.S. Section) Environmental Management Division If Yes, Page: C-</p>
<p>Is the project located within the contributing zone (stream flow source) or recharge zone of the Edwards Aquifer?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Environmental Protection Agency Groundwater/UIC Section (6WQ-SG) If Yes, Page: C-</p>
<p>Is the project located in, or directly adjacent to, tidal waters or tidally influenced wetlands?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>National Marine Fisheries Service Habitat Conservation Division If Yes, Page: C-</p>
<p>Is the project located in a coastal management zone?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>General Land Office If Yes, Page: C-</p>
<p>Will the proposed project affect any known organizations or private entities?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Coordination with the affected party(s) is required. If Yes, Page: C-</p>

Section 7: Agency Coordination

<p><u>For communities that participate in the NFIP:</u></p> <p>Is the project is located in the 100-year floodplain (1% chance of flooding)?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Does the project involve construction of a critical facility (WTP, WWTP, etc.) in the 500-year floodplain (0.2% chance of flooding)?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>**Any construction in the 100-year floodplain and construction of critical facilities in the 500-year floodplain requires a Floodplain Development Permit. Floodplain Development Permits must be acquired prior to TWDB approval of engineering plans and specifications and release of construction funds.</p>	<p>National Flood Insurance Program Local Floodplain Administrator</p> <p>If Yes, Page: C-</p>
<p><u>For communities that DO NOT participate in the NFIP:</u></p> <p>Does the project involve construction in the 100-year floodplain or construction of a critical facility in the 500-year floodplain?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> Exempt: strictly pipeline installation <input type="checkbox"/> No <input type="checkbox"/> Undetermined: no maps available to make determination</p> <p>**If the project is not exempt and is (a) located in the 100 year floodplain, (b) involves construction of a critical facility in the 500-year floodplain or (c) no floodplain maps are available for the project area, a Flood Risk Assessment must be prepared.</p>	<p><u>Flood Risk Assessment</u></p> <p>The assessment should include an elevation study, risk of flooding determination, and recommendation (build, no build, special accommodations). The assessment must be sealed by a licensed engineer.</p> <p>If Yes, Page: C-</p>

Section 8: Certification

CERTIFICATION

I hereby certify that the information contained in this document is accurate and complete to the best of my knowledge, and that this document describes the complete project. There are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions.

Signature _____

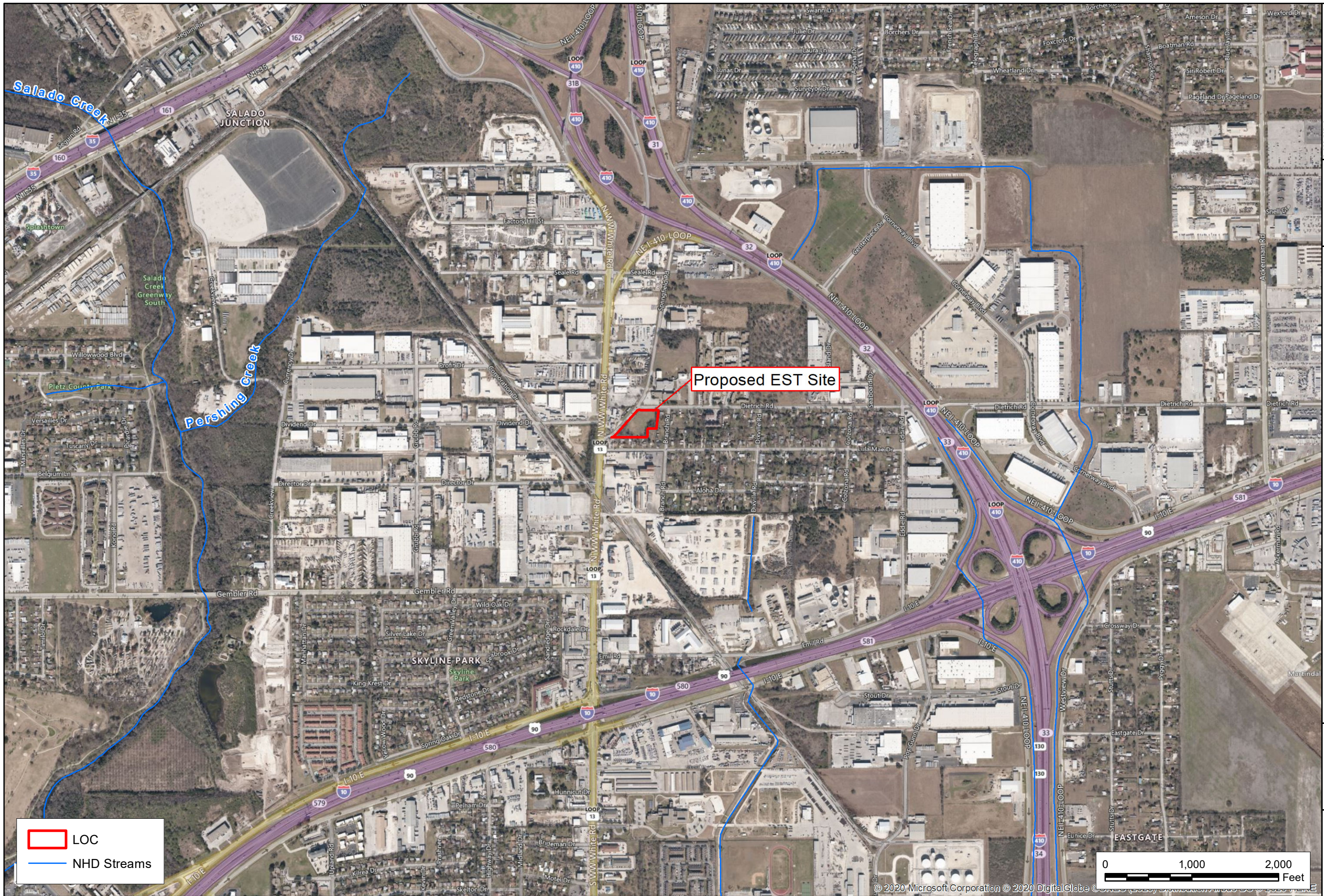
Date _____

Title _____

Section 9: Appendices

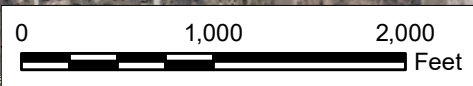
Appendix A

Standard Maps

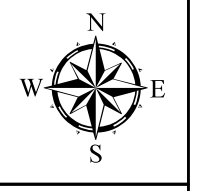


Proposed EST Site

LOC
 NHD Streams



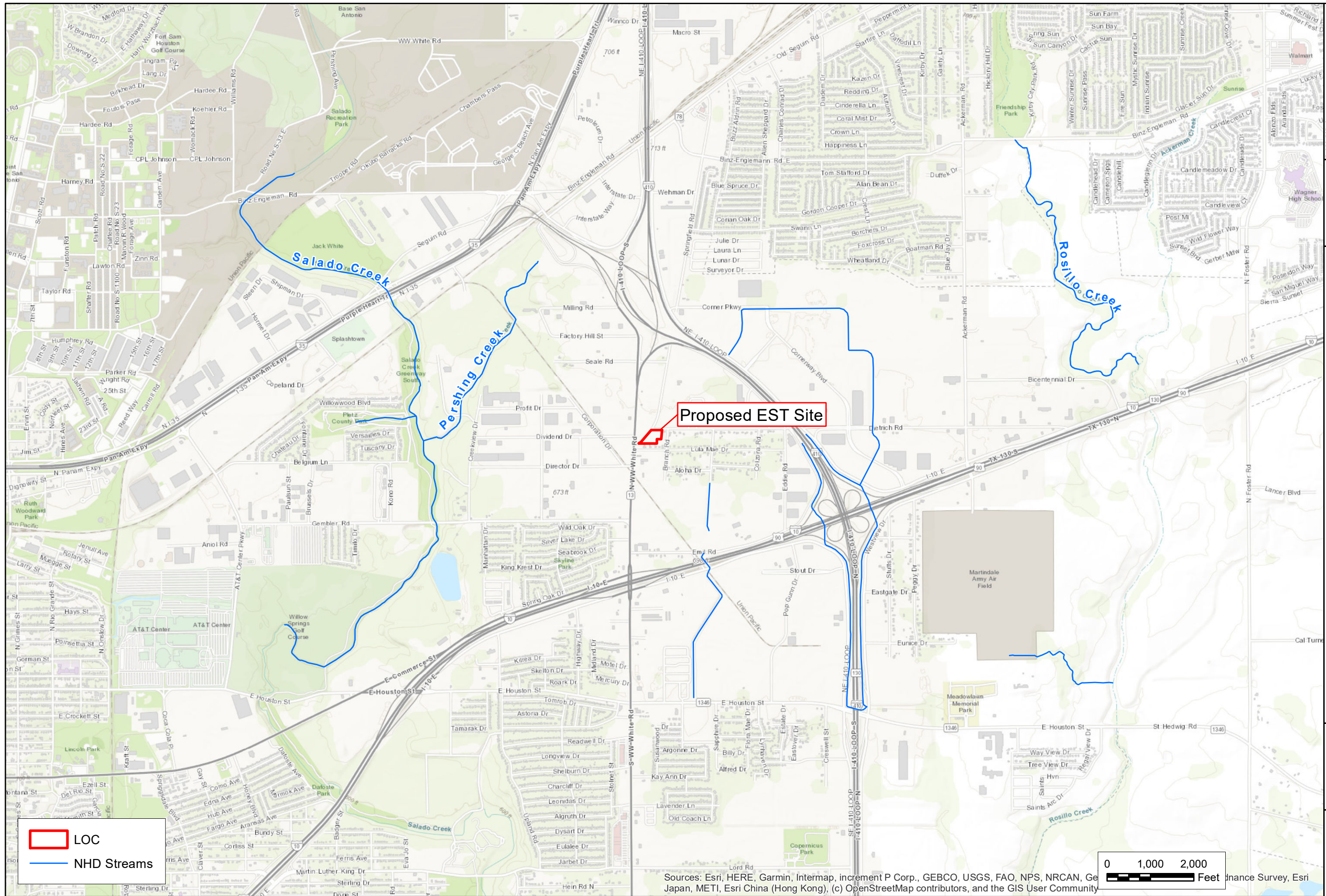
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DATE CREATED	Date: 5/15/2020
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas South Central
FILE NAME	Name: Fig1_Location_Map
PREPARED BY	



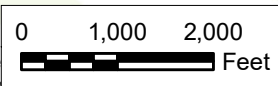
San Antonio Water System LOCATION MAP - DIETRICH EST

FRESE & NICHOLS, INC.
 FRESE AND NICHOLS, INC.
 10431 MORADO CIRCLE
 SUITE 300
 AUSTIN, TEXAS 78759
 PHONE: 512-617-3100
 FAX: 512-617-3101

FIGURE
1

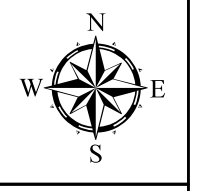


LOC
 NHD Streams



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, Ge Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

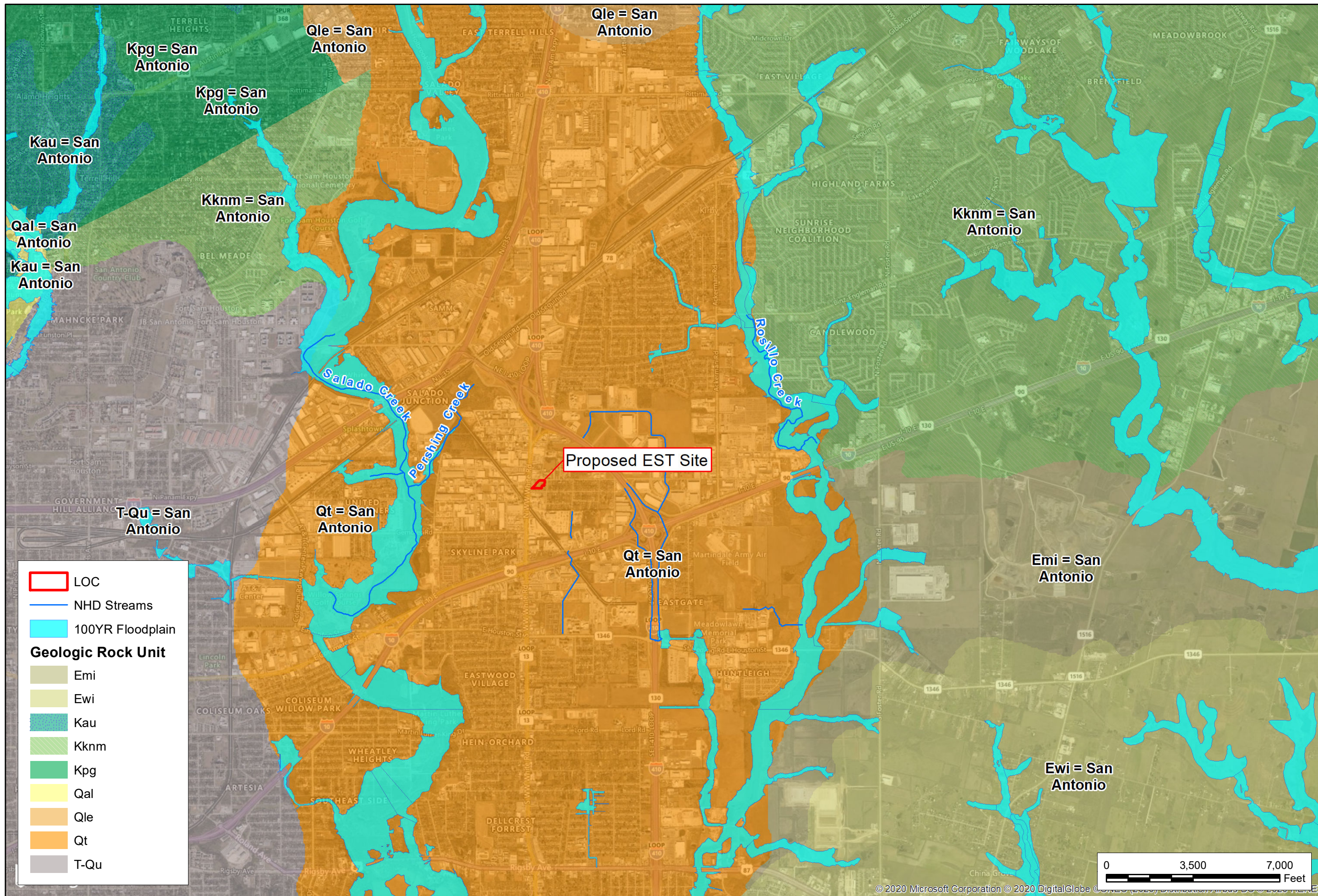
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 FILE NAME: Name: Fig2_Topo_Map
 PREPARED BY:



San Antonio Water System USGS TOPO MAP - DIETRICH EST

FREESE AND NICHOLS, INC.
 10431 MORADO CIRCLE
 SUITE 300
 AUSTIN, TEXAS 78759
 PHONE: 512-617-3100
 FAX: 512-617-3101

FIGURE
2



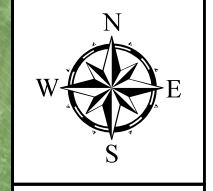
Legend

- LOC
- NHD Streams
- 100YR Floodplain

Geologic Rock Unit

- Emi
- Ewi
- Kau
- Kknm
- Kpg
- Qal
- Qle
- Qt
- T-Qu

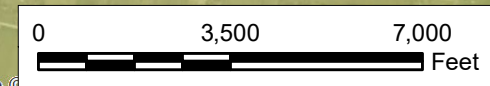
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 PREPARED BY:

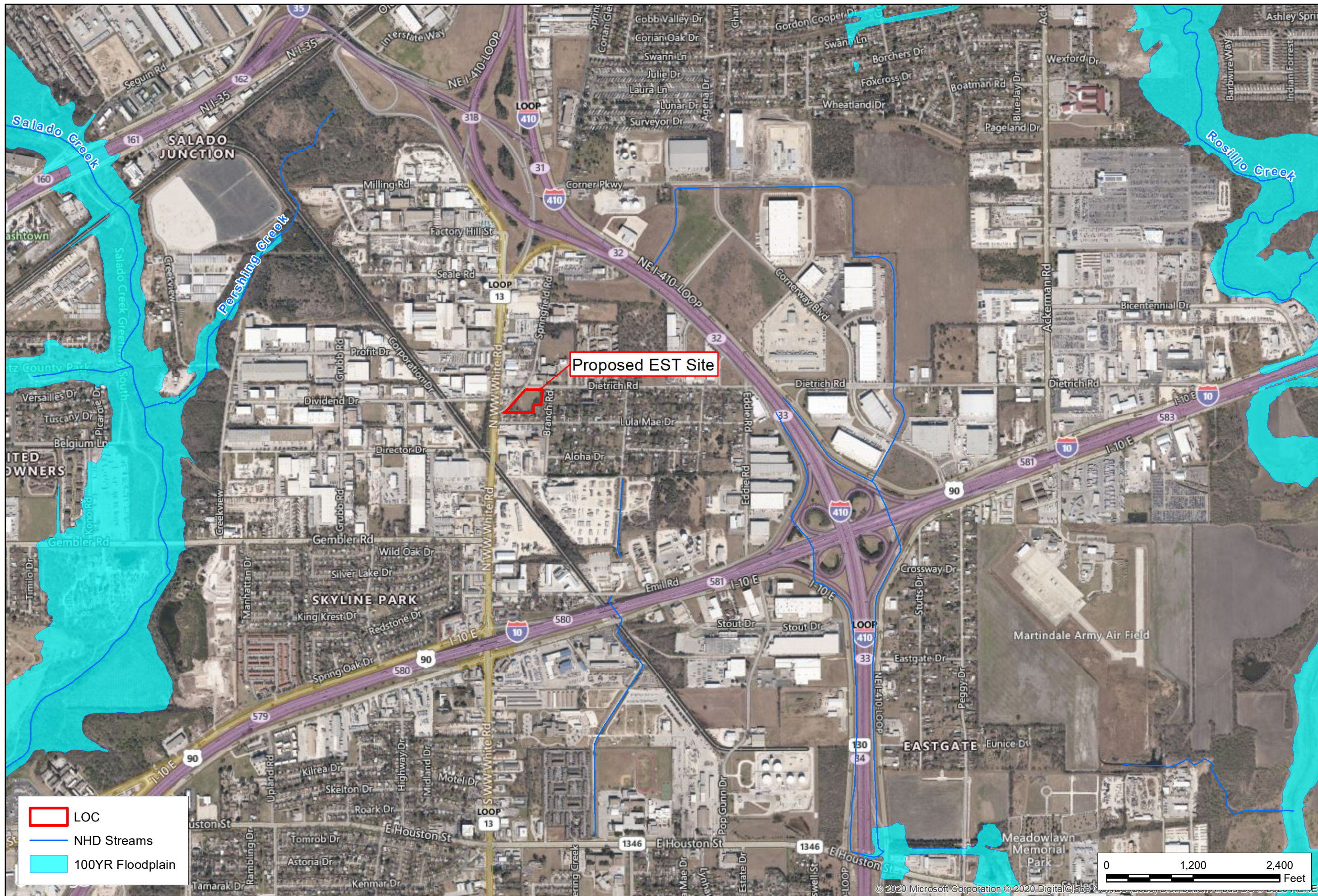


San Antonio Water System GEOLOGIC MAP - DIETRICH EST

FRESE AND NICHOLS, INC.
 10431 MORADO CIRCLE
 SUITE 300
 AUSTIN, TEXAS 78759
 PHONE: 512-617-3100
 FAX: 512-617-3101

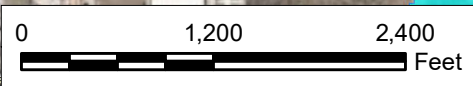
FIGURE
4



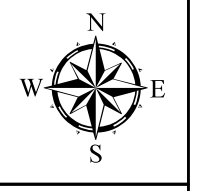


Proposed EST Site

- LOC
- NHD Streams
- 100YR Floodplain



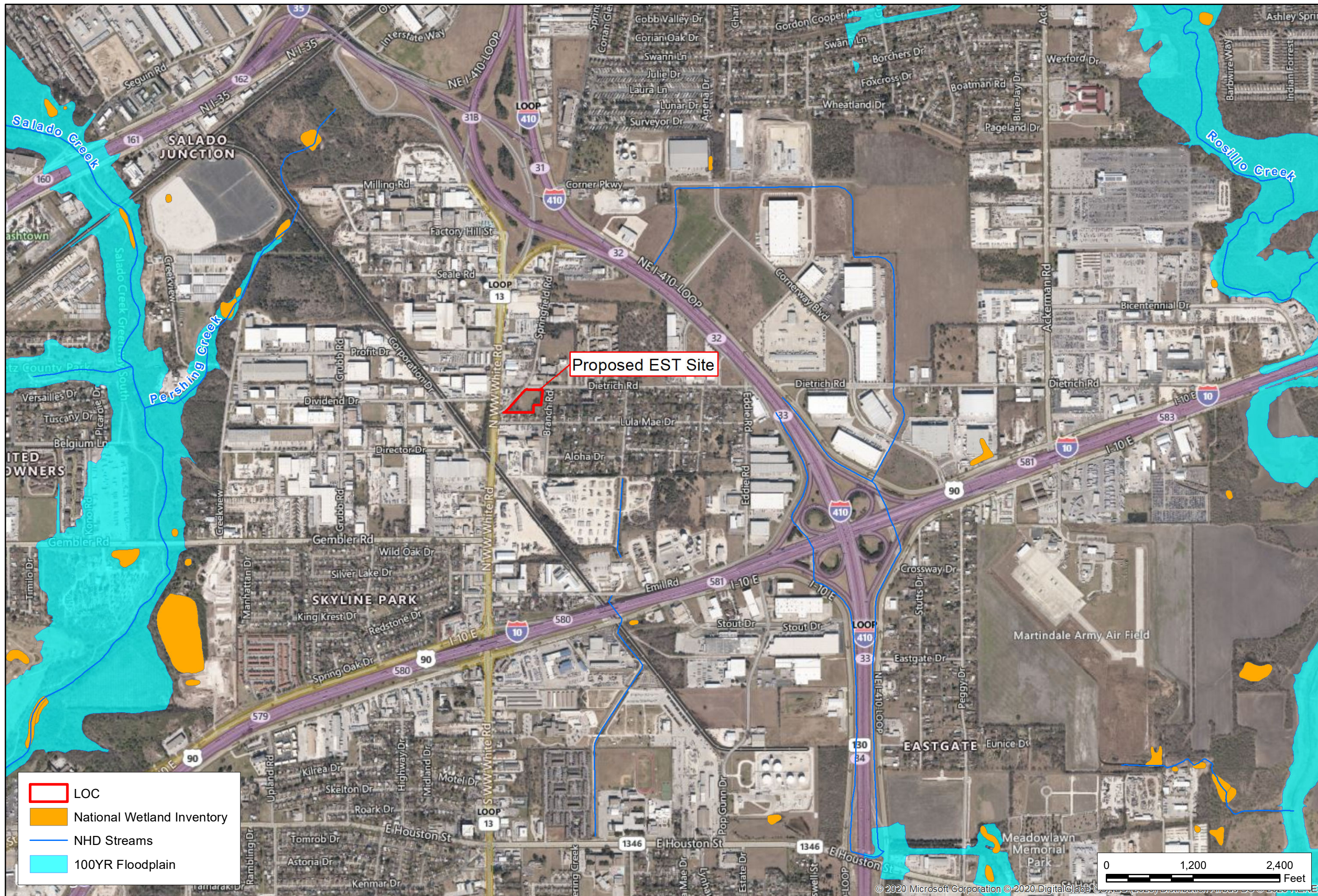
IR PROJECT NO: SWS18277
 DATE CREATED: 5/15/2020
 DATUM & COORDINATE SYSTEM: NAD83 State Plane Texas South Central
 FILE NAME: Fig5_Floodplain_Map
 PREPARED BY: [Name]



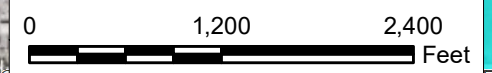
San Antonio Water System FLOODPLAIN MAP - DIETRICH EST

FRESE AND NICHOLS, INC.
 10431 MORADO CIRCLE
 SUITE 300
 AUSTIN, TEXAS 78759
 PHONE: 512-617-3100
 FAX: 512-617-3101

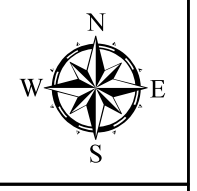
FIGURE
 5



	LOC
	National Wetland Inventory
	NHD Streams
	100YR Floodplain



PROJECT NO: SNE18277
 DATE CREATED: 5/15/2020
 DATUM & COORDINATE SYSTEM: NAD83 State Plane Texas South Central
 FILE NAME: Name: Fig6_NWI_Map
 PREPARED BY:



San Antonio Water System NWI MAP - DIETRICH EST

FRESE AND NICHOLS, INC.
 10431 MORADO CIRCLE
 SUITE 300
 AUSTIN, TEXAS 78759
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 FAX: 512-617-3101

FIGURE
6

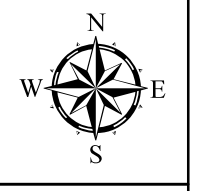
Appendix B1

Soils & Prime and Important Farmland



Soil Name	Farm Class	Hydric Rating
LvA - Lewisville silty clay, 0 to 1 percent slopes	All areas are prime farmland	No
HtA - Branyon clay, 0 to 1 percent slopes	All areas are prime farmland	No

SWB10277
 DATE CREATED: 7/1/2020
 D:\UM & COORDINATE SYSTEM
 MADRS State Prime (feet) Texas South Central
 FILE NAME: Name B1_Soils_11x17
 PREPARED BY: HHH



San Antonio Water System
NRCS SOILS - DIETRICH EST

FRESE AND NICHOLS, INC.
 10431 MORADO CIRCLE
 SUITE 300
 AUSTIN, TEXAS 78759
 PHONE: 512-617-3100
 FAX: 512-617-3101

FIGURE
B1

Appendix B3

Biological Resources

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

Mexican treefrog *Smilisca baudinii*

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

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

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
Endemic: Y	Global Rank: G1	State Rank: S1

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BEXAR COUNTY

ARACHNIDS

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*

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

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BEXAR COUNTY

ARACHNIDS

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

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

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BEXAR COUNTY

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.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2?B

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: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

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*

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

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

reddish egret *Egretta rufescens*

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

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

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BEXAR COUNTY

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.

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: S1N

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

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BEXAR COUNTY

CRUSTACEANS

a cave obligate isopod *Speocirolana hardeni*

Habitat description is not available at this time.

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

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

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 southward to the Neches, 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; almost invariably found in deep chutes and riffles where current is swift and bottom composed of coarse gravel or rock.

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

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BEXAR COUNTY

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.

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

a caddisfly *Nectopsyche texana*

Riparian, Riverine

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

a cave obligate beetle *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

a ground beetle *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

a ground beetle *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

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BEXAR COUNTY

INSECTS

a Katydid *Dichopetala catinata*

Habitat description is not available at this time.

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

a Katydid *Dichopetala seeversi*

Habitat description is not available at this time.

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

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

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

Helotes mold beetle *Batrisodes venyivi*

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

Federal Status: 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 *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 *Bombus variabilis*

Habitat description is not available at this time.

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

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BEXAR COUNTY

INSECTS

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

No accepted common name *Pygarcia 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 *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 *Lymantes nadineae*

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

MAMMALS

American badger *Taxidea taxus*

Generalist. Prefers areas with soft soils that sustain ground squirrels for food. When inactive, occupies underground burrow. Young are born in underground burrows.

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

big brown bat *Eptesicus fuscus*

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

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BEXAR COUNTY

MAMMALS

big free-tailed bat *Nyctinomops macrotis*

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

Federal Status:	State Status:	SGCN: Y
Endemic:	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: S4

eastern red bat *Lasiurus borealis*

Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.

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

eastern spotted skunk *Spilogale putorius*

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

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

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BEXAR COUNTY

MAMMALS

hoary bat

Lasiurus cinereus

Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.

Federal Status:	State Status:	SGCN: N
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

Mexican free-tailed bat

Tadarida brasiliensis

Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.

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

mink

Neovison vison

Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.

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

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

plains spotted skunk

Spilogale putorius interrupta

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

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G4T4	State Rank: S1S3

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

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BEXAR COUNTY

MAMMALS

thirteen-lined ground squirrel *Ictidomys tridecemlineatus*

Prefers short grass prairies with deep soils for burrowing. Frequently found in grazed ranchland, mowed pastures, and golf courses.

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: G2G3 State Rank: S3S4

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

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

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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

keeled earless lizard

Holbrookia propinqua

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

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

plateau spot-tailed earless lizard

Holbrookia lacerata

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

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

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:	Global Rank: GNR	State Rank: S2

Texas garter snake

Thamnophis sirtalis annectens

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

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

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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 lestdaisy *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 vernal 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: C State Status: SGCN: Y
Endemic: Y Global Rank: G1 State Rank: S1

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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 elmendorffii*
Grassland openings in oak woodlands on deep, loose, well-drained sands; in Coastal Bend, on Pleistocene barrier island ridges and Holocene Sand Sheet that support live oak woodlands; to the north it occurs in post oak-black hickory-live oak woodlands over Queen City and similar Eocene formations; one anomalous specimen found on Llano Uplift in wet pockets of granitic loam; Perennial; Flowering March-April, May
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2 State Rank: S2
- 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

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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 vernal-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*

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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 woollywhite *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 lestdaisy *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*

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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 amorphia *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*

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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

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United States Department of the Interior



FISH AND WILDLIFE SERVICE

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<http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>

In Reply Refer To:

July 01, 2020

Consultation Code: 02ETAU00-2020-SLI-1726

Event Code: 02ETAU00-2020-E-03567

Project Name: Dietrich Elevated Storage Tank

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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 county 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.*).

Please note that new information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. 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. Also 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 federally listed as threatened

or endangered species and to determine whether projects may affect these 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.

While a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal Agency must notify the Service in writing of any such designation. The Federal agency shall also independently review and evaluate the scope and content of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

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 a federally funded, permitted or authorized activity, the agency is required to consult with the Service pursuant to 50 CFR 402. The following definitions are provided to assist you in reaching a determination:

- *No effect* - the proposed action will not affect federally listed species or critical habitat. A “no effect” determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.
 - *May affect, but is not likely to adversely affect* - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. The Federal agency or the designated non-Federal representative should consult with the Service to seek written concurrence that adverse effects are not likely. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.
 - *Is likely to adversely affect* - adverse effects to listed species may occur as a direct or indirect result of the proposed action. For this determination, the effect of the action is neither discountable nor insignificant. If the overall effect of the proposed action is beneficial to the listed species but the action is also likely to cause some adverse effects to individuals of that species, then the proposed action “is likely to adversely affect” the listed species. The analysis should consider all interrelated and interdependent actions. An “is likely to adversely affect” determination requires the Federal action agency to initiate formal section 7 consultation with our office.
-

Regardless of the determination, the Service recommends that the Federal agency maintain a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information. 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

For projects that may affect migratory birds, the Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of these species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Migratory birds may nest in trees, brushy areas, or other areas of suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, we recommend surveying for nests prior to conducting work. If a nest is found, and if possible, the Service recommends a buffer of vegetation remain around the nest until the young have fledged or the nest is abandoned.

For additional information concerning the MBTA and recommendations to reduce impacts to migratory birds please contact the U.S. Fish and Wildlife Service Migratory Birds Office, 500 Gold Ave. SW, Albuquerque, NM 87102. A list of migratory birds may be viewed at <https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php>. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at: <https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/communication-towers.php>. Additionally, wind energy projects should follow the wind energy guidelines

<https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/wind-energy.php>) for minimizing impacts to migratory birds and bats.

Finally, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan <https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/eagles.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 Tracking Number 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

Consultation Code: 02ETAU00-2020-SLI-1726

Event Code: 02ETAU00-2020-E-03567

Project Name: Dietrich Elevated Storage Tank

Project Type: WATER SUPPLY / DELIVERY

Project Description: Construct an elevated storage tank (EST) for potable water distribution through the San Antonio Water System (SAWS) existing infrastructure. The EST will be fed by a supply line place along Springfield Street from WW White. The project site is approximately 3 acres. Less than 1 acre will be disturbed for the project.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/29.44098179101269N98.4037421188563W>



Counties: Bexar, TX

Endangered Species Act Species

There is a total of 24 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions.

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

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

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

NAME	STATUS
<p>Golden-cheeked Warbler (=wood) <i>Dendroica chrysoparia</i></p> <p>No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33</p>	Endangered
<p>Least Tern <i>Sterna antillarum</i></p> <p>Population: interior pop. No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ Wind Energy Projects <p>Species profile: https://ecos.fws.gov/ecp/species/8505</p>	Endangered
<p>Piping Plover <i>Charadrius melodus</i></p> <p>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location is outside the critical habitat. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ Wind Energy Projects <p>Species profile: https://ecos.fws.gov/ecp/species/6039</p>	Threatened
<p>Red Knot <i>Calidris canutus rufa</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ Wind Energy Projects <p>Species profile: https://ecos.fws.gov/ecp/species/1864</p>	Threatened
<p>Whooping Crane <i>Grus americana</i></p> <p>Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758</p>	Endangered

Amphibians

NAME	STATUS
<p>San Marcos Salamander <i>Eurycea nana</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6374</p>	Threatened
<p>Texas Blind Salamander <i>Typhlomolge rathbuni</i></p> <p>No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5130</p>	Endangered

Fishes

NAME	STATUS
Fountain Darter <i>Etheostoma fonticola</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5858	Endangered

Clams

NAME	STATUS
Texas Fatmucket <i>Lampsilis bracteata</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9041	Candidate
Texas Pimpleback <i>Quadrula petrina</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8966	Candidate

Insects

NAME	STATUS
[no Common Name] Beetle <i>Rhadine exilis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6942	Endangered
[no Common Name] Beetle <i>Rhadine infernalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3804	Endangered
Comal Springs Dryopid Beetle <i>Stygoparnus comalensis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7175	Endangered
Comal Springs Riffle Beetle <i>Heterelmis comalensis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3403	Endangered
Helotes Mold Beetle <i>Batrisodes venyivi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1149	Endangered

Arachnids

NAME	STATUS
Braken Bat Cave Meshweaver <i>Cicurina venii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7900	Endangered
Cokendolpher Cave Harvestman <i>Texella cokendolpheri</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/676	Endangered
Government Canyon Bat Cave Meshweaver <i>Cicurina vespera</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7037	Endangered
Government Canyon Bat Cave Spider <i>Neoleptoneta microps</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/553	Endangered
Madla Cave Meshweaver <i>Cicurina madla</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2467	Endangered
Robber Baron Cave Meshweaver <i>Cicurina baronia</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2361	Endangered

Crustaceans

NAME	STATUS
Peck's Cave Amphipod <i>Stygobromus (=Stygonectes) pecki</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8575	Endangered

Flowering Plants

NAME	STATUS
Bracted Twistflower <i>Streptanthus bracteatus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2856	Candidate
Texas Wild-rice <i>Zizania texana</i> There is final critical habitat for this species. Your location is outside the critical habitat. 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.

Draft Potential Impacts of Threatened and Endangered Species

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
Birds							
Bald Eagle	<i>Haliaeetus leucocephalus</i>	N/A	Threatened	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	No	No
Black-capped vireo	<i>Vireo atricapilla</i>	N/A	N/A	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces, requires foliage reaching ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved trees and shrubs provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure.	No	No	No
Franklin's gull	<i>Leucophaeus pipixcan</i>	N/A	N/A	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	No	No
Golden-cheeked warbler	<i>Setophaga chrysoparia</i>	Endangered	Endangered	Ashe juniper in mixed stands with various oaks (<i>Quercus</i> 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	No	No
Interior least tern	<i>Sterna antillarum</i>	Endangered	Endangered	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.).	No	No	No
Mountain plover	<i>Charadrius montanus</i>	N/A	N/A	Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous.	No	No	No
Piping plover	<i>Charadrius melodus</i>	Threatened	Threatened	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands.	No	No	No
Red knot	<i>Calidris canutus rufa</i>	Threatened	N/A	Breeding habitat consists of slightly vegetated land in the tundra where it is sunny and windy. The nests are built near wetlands. Wintering and migration habitats consist of large, sandy tidal flats and coastlines near inlets of bays and estuaries that have remained undeveloped.	No	No	No

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
Reddish egret	<i>Egretta rufescens</i>	N/A	Threatened	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	No	No
Tropical parula	<i>Setophaga pitaiyumi</i>	N/A	Threatened	Semi-tropical evergreen woodlands 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 rivers and resacas.	No	No	No
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	N/A	N/A	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	No	No
White-faced ibis	<i>Plegadis chihi</i>	N/A	Threatened	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	No	No	No
Whooping crane	<i>Grus americana</i>	Endangered	Endangered	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	No	No
Wood stork	<i>Mycteria americana</i>	N/A	Threatened	Prefers to nest in large tracts of bald cypress or red mangrove.	No	No	No
Zone-tailed hawk	<i>Buteo albonotatus</i>	N/A	Threatened	Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions.	No	No	No
Fish							
Guadalupe bass	<i>Micropterus treculii</i>	N/A	N/A	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. 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	No	No
Fountain darter	<i>Etheostoma fonticola</i>	Endangered	N/A	Fountain darters require clean, spring-fed waters with bottom vegetation.	No	No	No

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
River darter	<i>Percina shumardi</i>	N/A	N/A	In Texas limited to eastern streams including Red southward to the Neches, 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; almost always found in deep chutes and riffles where current is swift and bottom is composed of coarse gravel or rock.	No	No	No
Texas shiner	<i>Notropis amabilis</i>	N/A	N/A	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.	No	No	No
Toothless blindcat	<i>Trogloglanis pattersoni</i>	N/A	Threatened	Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.	No	No	No
Widemotuh blindcat	<i>Satan eurystomus</i>	N/A	Threatened	Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.	No	No	No
Mammals							
American badger	<i>Taxidea taxus</i>	N/A	N/A	Lives in open areas like plains and prairies, farmland, and the edges of woods.	No	No	No
Big brown bat	<i>Eptesicus fuscus</i>	N/A	N/A	Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.	No	No	No
Big free-tailed bat	<i>Nyctinomops macrotis</i>	N/A	N/A	Species prefers to roost in crevices and cracks in high canyon walls, but will use buildings as well.	No	No	No
Black bear	<i>Ursus americanus</i>	N/A	Threatened	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	No	No
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	N/A	N/A	Dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups.	No	No	No
Cave myotis bat	<i>Myotis velifer</i>	N/A	N/A	Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow 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.	No	No	No
Eastern red bat	<i>Lasiurus borealis</i>	N/A	N/A	Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.	No	No	No
Eastern spotted skunk	<i>Spilogale putorius</i>	N/A	N/A	Open fields prairies, croplands, fence rows, farmyards, forest edges and woodlands. Prefer wooded, brushy areas and tallgrass prairies. Found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.	No	No	No
Hoary bat	<i>Lasiurus cinereus</i>	N/A	N/A	Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.	No	No	No

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
Long-tailed weasel	<i>Mustela frenata</i>	N/A	N/A	Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges and rocky desert scrub. Usually live close to water.	No	No	No
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>	N/A	N/A	Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.	No	No	No
Mexican long-tongued bat	<i>Choeronycteris mexicana</i>	N/A	N/A	Only Texas record is from riparian forest; in general--neotropical nectivorous species roosting in caves, mines, and large crevices found in deep canyons along the Rio Grande ; also found in buildings and often associated with big-eared bats; single TX record from Santa Ana NWR.	No	No	No
Mink	<i>Neovison vison</i>	N/A	N/A	Intimately associated with water; coastal swamps and marshes, wooded riparian zones, edges of lakes. Prefer floodplains.	No	No	No
Mountain lion	<i>Puma concolor</i>	N/A	N/A	Found in rugged mountains and riparian zones.	No	No	No
Plains spotted skunk	<i>Spilogale putorius interrupta</i>	N/A	N/A	Open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie.	No	Yes	No
Swamp rabbit	<i>Sylvilagus aquaticus</i>	N/A	N/A	Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.	No	No	No
Thirteen-lined ground squirrel	<i>Ictidomys tridecemlineatus</i>	N/A	N/A	Prefers short grass prairies with deep soils for burrowing. Frequently found in grazed ranchland, mowed pastures, and golf courses.	No	No	No
Tricolored bat	<i>Perimyotis subflavus</i>	N/A	N/A	Forest, woodland and riparian areas are important. Caves are very important to this species.	No	No	No
Western hog-nosed skunk	<i>Conepatus leuconotus</i>	N/A	N/A	Habitats include woodlands, grasslands and deserts, to 7200 feet, most common in rugged, rocky canyon country.	No	No	No
Western spotted skunk	<i>Spilogale gracilis</i>	N/A	N/A	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.	No	No	No
White-nosed coati	<i>Nasua narica</i>	N/A	Threatened	Woodlands, riparian corridors and canyons. Most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees.	No	No	No
Reptiles							
Cagle's map turtle	<i>Graptemys caglei</i>	N/A	Threatened	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 30 feet of waters edge.	No	No	No

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
eastern box turtle	<i>Terrapene carolina</i>	N/A	N/A	Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enter pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.	No	Yes	No
keeled earless lizard	<i>Holbrookia propinqua</i>	N/A	N/A	Habitats include coastal dunes, barrier islands, and other sandy areas. Although it occurs well inland, this species is most abundant on coastal dunes, where it seeks shelter in the burrows of small mammals or crabs.	No	No	No
plateau spot-tailed earless lizard	<i>Holbrookia lacerata</i>	N/A	N/A	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.	No	No	No
slender glass lizard	<i>Ophisaurus attenuatus</i>	N/A	N/A	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.	No	No	No
Tamaulipan spot-tailed earless lizard	<i>Holbrookia subcaudalis</i>	N/A	N/A	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.	No	No	No
Texas garter snake	<i>Thamnophis sirtalis annectens</i>	N/A	N/A	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	No	No
Texas horned lizard	<i>Phrynosoma cornutum</i>	N/A	Threatened	Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.	No	No	No
Texas indigo snake	<i>Drymarchon melanurus erebennus</i>	N/A	N/A	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	No	No

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
Texas tortoise	<i>Gopherus berlandieri</i>	N/A	Threatened	Open scrub woods, arid brush, lomas, grass-cactus association; often in areas with sandy well-drained soils. When inactive occupies shallow depressions dug at base of bush or cactus; sometimes in underground burrow or under object. Eggs are laid in nests dug in soil near or under bushes.	No	No	No
timber (canebroke) rattlesnake	<i>Crotalus horridus</i>	N/A	N/A	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	No	No
western box turtle	<i>Terrapene ornata</i>	N/A	N/A	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) or enter burrows made by other species.	No	No	No
western hognose snake	<i>Heterodon nasicus</i>	N/A	N/A	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	No	No
Western rattlesnake	<i>Crotalus viridis</i>	N/A	N/A	Terrestrial: Dry desert and prairie grasslands, shrub desert rocky hillsides; edges of arid and semi-arid river breaks.	No	No	No
Mollusks							
Mimic cavesnail	<i>Phreatodrobia imitata</i>	N/A	N/A	Subaquatic; only known from two wells penetrating the Edwards Aquifer.	No	No	No
Texas fatmucket	<i>Lampsilis bracteata</i>	Candidate	N/A	Historically the Texas fatmucket had populations in at least 18 rivers in the upper Colorado, Guadalupe, and San Antonio River systems in central Texas.	No	No	No
Texas pimpleback	<i>Quadrula petrina</i>	Candidate	N/A	Found in riffle, pool and pool/run habitats; gravel and cobble substrates.	No	No	No
No common name	<i>Phreatodrobia conica</i>	N/A	N/A	Habitat description is not available at this time.	No	No	No
Amphibians							
Cascade Caverns salamander	<i>Eurycea latitans</i>	N/A	Threatened	Aquatic; springs, streams and caves with rocky or cobble beds.	No	No	No
Mexican treefrog	<i>Smilisca baudinii</i>	N/A	Threatened	Terrestrial and aquatic; Terrestrial habitats used include forested and brush around water bodies. Aquatic habitat can be any, but preferred sites are small, ephemeral wetlands.	No	No	No
San Marcos salamander	<i>Eurycea nana</i>	Threatened	N/A	Clear, flowing spring water coming from the headwaters of the San Marcos River.	No	No	No
Strecker's chorus frog	<i>Pseudacris streckeri</i>	N/A	N/A	Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.	No	No	No
Texas blind salamander	<i>Typholomolge rathbuni</i>	Endangered	N/A	Aquatic and subterranean; streams and caves.	No	No	No
Texas salamander	<i>Eurycea neotenes</i>	N/A	Threatened	Aquatic; springs, streams and caves with rocky or cobble beds.	No	No	No
Valdina Farms sinkhole salamander	<i>Eurycea troglodytes</i>	N/A	N/A	Aquatic; springs, streams and caves with rocky or cobble beds.	No	No	No

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
Arachnids							
Braken Bat Cave meshweaver	<i>Cicurina venii</i>	Endangered	N/A	Karst features in north and northwest Bexar County.	No	No	No
Cokendolpher Cave harvestman	<i>Texella cokendolpheri</i>	Endangered	N/A	Karst features in north and northwest Bexar County.	No	No	No
Government Canyon Bat Cave meshweaver	<i>Cicurina vespera</i>	Endangered	N/A	Karst features in north and northwest Bexar County.	No	No	No
Government Canyon Bat Cave spider	<i>Neoleptoneta microps</i>	Endangered	N/A	Karst features in north and northwest Bexar County.	No	No	No
Madla Cave meshweaver	<i>Cicurina madla</i>	Endangered	N/A	Karst features in north and northwest Bexar County.	No	No	No
No common name	<i>Tartarocreagris amblyopa</i>	N/A	N/A	Habitat description is not available at this time.	No	No	No
No common name	<i>Tartarocreagris reyesi</i>	N/A	N/A	Habitat description is not available at this time.	No	No	No
No common name	<i>Speodesmus reddelli</i>	N/A	N/A	Habitat description is not available at this time.	No	No	No
Robber Baron Cave meshweaver	<i>Cicurina baronia</i>	Endangered	N/A	Karst features in north and northwest Bexar County.	No	No	No
Flowering Plants							
Awnless lestdaisy	<i>Chaetopappa imberbis</i>	N/A	N/A	In woodlands on lomas of Carrizo sand.	No	No	No
Big red sage	<i>Salvia pentstemonoides</i>	N/A	N/A	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.	No	No	No
Bigflower cornsalad	<i>Valerianella stenocarpa</i>	N/A	N/A	Usually along creekbeds or in vernal moist grassy open areas.	No	No	No
Bracted twistflower	<i>Streptanthus bracteatus</i>	Candidate	N/A	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.	No	No	No
Bristle nailwort	<i>Paronychia setacea</i>	N/A	N/A	Flowering vascular plant endemic to eastern southcentral Texas, occurring in sandy soils	No	No	No
Buckley tridens	<i>Tridens buckleyanus</i>	N/A	N/A	Occurs in juniper-oak woodlands on rocky limestone slopes.	No	No	No
Burridge greenthread	<i>Thelesperma burridgeanum</i>	N/A	N/A	Sandy open areas.	No	No	No
Correll's false dragon-head	<i>Physostegia correllii</i>	N/A	N/A	A wetland species that can be found today in wet, disturbed areas such as drainage ditches.	No	No	No

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
Elmendorf's onion	<i>Allium elmendorffii</i>	N/A	N/A	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.	No	No	No
Glass Mountains coral-root	<i>Hexalectris nitida</i>	N/A	N/A	Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under <i>Juniperus ashei</i> in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain	No	No	No
Gravelbar brickellbush	<i>Brickellia dentata</i>	N/A	N/A	Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms.	No	No	No
Hairy sycamore-leaf snowbell	<i>Styrax platanifolius</i> ssp. <i>stellatus</i>	N/A	N/A	Rare throughout range, in habitats similar to those of var. <i>platanifolius</i> - usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture.	No	No	No
Heller's marbleseed	<i>Onosmodium helleri</i>	N/A	N/A	Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons.	No	No	No
Hill Country wild-mercury	<i>Argythamnia aphoroides</i>	N/A	N/A	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.	No	No	No
Low spurge	<i>Euphorbia peplidion</i>	N/A	N/A	Occurs in a variety of vernal-moist situations in a number of natural regions.	No	No	No
Narrowleaf brickellbush	<i>Brickellia eupatorioides</i> var. <i>gracillima</i>	N/A	N/A	Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes.	No	No	No
Net-leaf bundleflower	<i>Desmanthus reticulatus</i>	N/A	N/A	Mostly on clay prairies of the coastal plain of central and south Texas.	No	No	No
Osage Plains false foxglove	<i>Agalinis densiflora</i>	N/A	N/A	Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils.	No	No	No
Parks' jointweed	<i>Polygonella parksii</i>	N/A	N/A	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.	No	No	No
Plateau loosestrife	<i>Lythrum ovalifolium</i>	N/A	N/A	Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain.	No	No	No
Plateau milkvine	<i>Matelea edwardsensis</i>	N/A	N/A	Occurs in various types of juniper-oak and oak-juniper woodlands.	No	No	No

Species Common Name	Species Scientific Name	Federal protection status	State protection status	Habitat	Presence of Critical Habitat	Project Site Suitability	Potential Impacts of Project
Sandhill woollywhite	<i>Hymenopappus carrizoanus</i>	N/A	N/A	Disturbed or open areas in grasslands and post oak woodlands on deep sands derived from the Carrizo Sand and similar Eocene formations.	No	No	No
Siler's huaco	<i>Manfreda sileri</i>	N/A	N/A	Rare in a variety of grasslands and shrublands on dry sites.	No	No	No
South Texas rushpea	<i>Caesalpinia phyllanthoides</i>	N/A	N/A	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.	No	No	No
Spreading leastdaisy	<i>Chaetopappa effusa</i>	N/A	N/A	Limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, 300-500 m elevation.	No	No	No
Sycamore-leaf snowbell	<i>Styrax platanifolius</i> ssp. <i>platanifolius</i>	N/A	N/A	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.	No	No	No
Texas almond	<i>Prunus minutiflora</i>	N/A	N/A	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.	No	No	No
Texas amorphia	<i>Amorpha roemeriana</i>	N/A	N/A	Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks.	No	No	No
Texas fescue	<i>Festuca versuta</i>	N/A	N/A	Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes.	No	No	No
Texas peachbush	<i>Prunus texana</i>	N/A	N/A	Occurs at scattered sites in various well drained sandy situations; deep sand, plains and sand hills, grasslands, oak woods, 0-200 m elevation.	No	No	No
Texas seymeria	<i>Seymeria texana</i>	N/A	N/A	Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons.	No	No	No
Texas wild-rice	<i>Zizania texana</i>	Endangered	N/A	Texas wild-rice grows in gravelly or coarse sandy soils in clear, cool, fast-flowing waters of spring-fed rivers.	No	No	No
Threeflower penstemon	<i>Penstemon triflorus</i> ssp. <i>triflorus</i>	N/A	N/A	Occurs sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands.	No	No	No
Tree dodder	<i>Cuscuta exaltata</i>	N/A	N/A	Parasitic on various <i>Quercus</i> , <i>Juglans</i> , <i>Rhus</i> , <i>Vitis</i> , <i>Ulmus</i> , and <i>Diospyros</i> species as well as <i>Acacia berlandieri</i> and other woody plants.	No	No	No
Turnip-root scurfpea	<i>Pediomelum cyphocalyx</i>	N/A	N/A	Grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas.	No	No	No
Woolly butterfly-weed	<i>Gaura villosa</i> ssp. <i>parksii</i>	N/A	N/A	Flats and hills of red sand of Rio Grande Plains.	No	No	No
Wright's milkvetch	<i>Astragalus wrightii</i>	N/A	N/A	On sandy or gravelly soils.	No	No	No

Appendix B5

Hazardous Materials

PHASE I ENVIRONMENTAL SITE ASSESSMENT

139 SPRINGFIELD ROAD
SAN ANTONIO, TEXAS 78219

Prepared for San Antonio Water System
2800 U.S. Hwy. 281 North
P.O. Box 2449
San Antonio, TX 78298
September 19, 2017



Baer Engineering and Environmental Consulting, Inc.

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Baer Engineering Document No. 172042-8i.010

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1.0 SUMMARY

This Phase I Environmental Site Assessment (ESA) was performed in accordance with the All Appropriate Inquiries (AAI) Rule specified in the Federal Register Part III EPA 40 CFR Part 312 (U.S. Environmental Protection Agency [US EPA], 2005) and the American Society for Testing and Materials (ASTM) Standard E 1527-13 entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM, 2014). The ASTM standard is based on three major lines of inquiry: regulatory records review and historical documentation, site reconnaissance, and interviews with people familiar with the site.

Property Information:

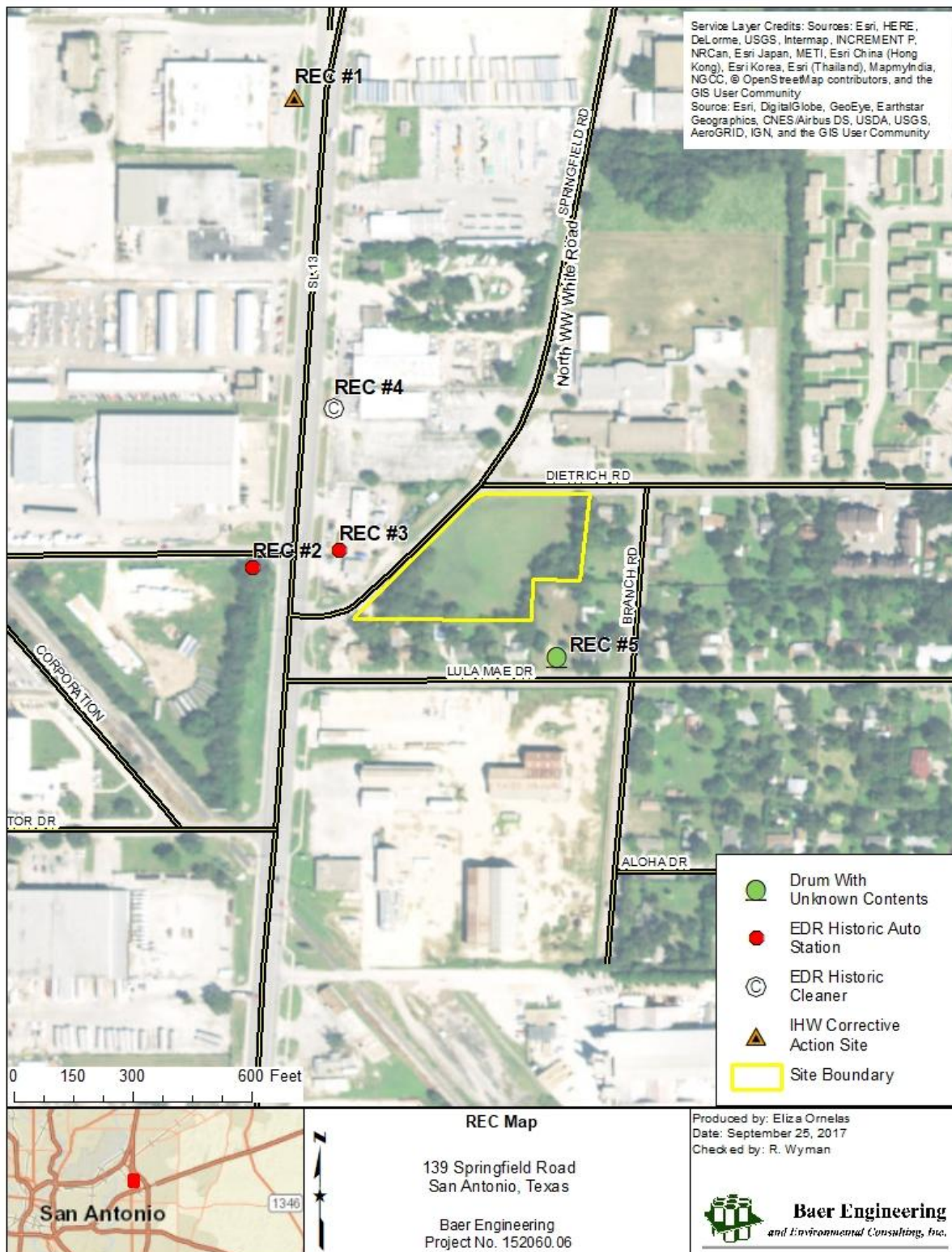
Address:	139 Springfield Road, San Antonio, Texas
Latitude:	29.440888°
Longitude:	-98.403761°
Legal Description:	NCB 10611 BLK 2 LOT 8 (139 SPRINGFIELD ROAD SUBD)

There are no structures present on the Site.

The Phase I ESA performed for this Site identified five (5) Recognized Environmental Conditions (REC) for the Site.

REC #	SITE NAME	LOCATION	TYPE	RATIONALE
1	Univar USA, Inc. – San Antonio – WW White	631 North WW White Road Distance from Site: 945 feet Topographic gradient relative the Site: Upgradient	IHW Corrective Action	Because of the presumed direction of groundwater flow, distance from the Site, and mobility of some of the contaminates, Baer Engineering considers this location to be a REC.
2	Roberts Automotive Center	515A North WW White Road Distance from Site: 150 feet Topographic gradient relative the Site: Upgradient	Historical Auto Station	TCEQ records list the USTs at this location as removed from the ground. Because of the adjacent location, Baer Engineering considers this location to be a REC.
3	Dependable Transm & Auto SVC	518 North WW White Road Distance from Site: Adjacent Topographic gradient relative the Site: Upgradient	Historical Auto Station	Additional records were not located for this property. Because of the unknown status of USTs for this property, Baer Engineering considers this property to be a REC.

REC #	SITE NAME	LOCATION	TYPE	RATIONALE
4	New Genesis	542 North WW White Road Distance from Site: Adjacent Topographic gradient relative the Site: Upgradient	Historic Dry Cleaners	Additional records were not located for this property. Because of the unknown status of the dry cleaners for this property and unknown chemicals used, Baer Engineering considers this property to be a REC.
5	139 Lula Mae Drive	139 Lula Mae Drive Distance from Site: Adjacent Topographic gradient relative the Site: Downgradient	Drum with unknown contents	Because of the unknown contents of the drum and adjacent location, Baer Engineering considers this location a REC.



2.0 INTRODUCTION

This Phase I ESA was performed in accordance with the US EPA AAI and ASTM 1527-13 Phase I ESA Standard. It includes a review of specified records, a Site reconnaissance, interviews, and a written report.

2.1 Location and Legal Description

This report presents the results of a Phase I ESA conducted on the following property:

Address:	139 Springfield Road, San Antonio, Texas
Latitude:	29.440888°
Longitude:	-98.403761°
Legal Description:	NCB 10611 BLK 2 LOT 8 (139 SPRINGFIELD ROAD SUBD)

The Site is in eastern San Antonio. In general, the Site is bounded:

-) On the north by Dietrich Road, Springfield Road, and commercial properties;
-) On the south by residential properties and a restaurant;
-) On the west by Springfield Road and Sams Auto Repair; and
-) On the east by residential properties.

A Site map is presented in **APPENDIX A**, a vicinity map is presented in **APPENDIX B**, and Site photographs are presented in **APPENDIX C**.

2.2 Purpose

The purpose of a Phase I ESA is to identify, to the extent feasible, RECs in connection with the property. RECs are defined as the presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release on the property or into the ground, groundwater, or surface water of the property. The term REC is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of the Texas Commission on Environmental Quality (TCEQ) or other appropriate governmental agencies.

2.3 Detailed Scope of Services

Baer Engineering proposed to provide the following scope of services for a Phase I ESA at the Site:

The Phase I ESA will be completed in compliance with AAI Regulation as specified in the Federal Register Part III EPA 40 CFR Part 312 and the ASTM *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (E 1527-13). It will identify and record existing, potential, or suspect conditions that may impose an environmental liability on, or restrict the use of, the subject property. The purpose of a Phase I ESA is to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or *bona fide* prospective purchaser limitations on Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability. The Phase I ESA will constitute AAI into the previous ownership and uses of the property consistent with good commercial or customary practice.

The Phase I ESA is designed to identify potential RECs as the term is defined by ASTM. These conditions could result in regulatory liability and response costs for the past, present, or future owners of the Site or could adversely affect the value of the Site. ASTM defines REC as:

“The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. De minimis are not recognized environmental conditions.”

The Phase I ESA will include the Environmental Professional’s opinions of the impact on the property of conditions identified in the findings section. The logic and reasoning used by the Environmental Professional in evaluating information collected during the course of the investigation related to such conditions will be discussed. Frequently, an item initially suspected to be a REC is subsequently determined, upon further evaluation, not to be considered a REC. The opinion will specifically include the Environmental Professional’s rationale for concluding that a condition is or is not currently a REC. Existing conditions identified by the Environmental Professional as RECs will be listed in the conclusions section of the report.

The following outline is Baer Engineering’s standard scope of services for completing a Phase I ESA. All of these activities are limited to ready and safe access, cooperative contacts, and reasonable availability.

a. On-Site Investigation

Baer Engineering will perform an on-site reconnaissance to identify indicators of hazardous substances or petroleum products regulated by the TCEQ and other governmental agencies. Surveys to determine the presence of radon, lead in drinking water, wetlands, regulatory compliance, cultural and historical resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, biological agents, asbestos, lead-containing paint, and mold are intentionally and by mutual agreement excluded from the scope of service for the Phase I ESA.

A visual on-site investigation of the subject property and adjoining properties from the nearest vantage point will be completed. If an on-site investigation cannot be performed because of unusual circumstances (e.g., physical limitations, remote/inaccessible location, etc.), then Baer Engineering will:

-) Visually investigate the property via an alternative method (e.g., aerial photo, fence line observation, etc.);
-) Document efforts taken to obtain access and why efforts were unsuccessful;
-) Document other sources of information that were consulted to assess releases or threatened releases; and
-) Comment on the significance of the failure to conduct a visual on-site investigation.

Evaluation of site conditions includes observation of the following:

-) Periphery of the property;
-) Each side of wet and dry drainage pathways (if present);
-) Periphery of on-site water bodies (if present);
-) Public and maintenance areas;
-) Improvements and structures on the property; and

-) The remaining area not included above, including wooded or overgrown areas, where accessible.

The Phase I ESA report will describe evidence of the following, if observed at the site:

-) Odors of chemical gases, petroleum products, or other odors;
-) Landfilling, dumping, disturbed soils, or direct burial activity;
-) Surface impoundment, oil/water separators, or holding ponds;
-) Air emissions or wastewater discharges;
-) Industrial or manufacturing activities;
-) Monitoring wells or remediation equipment;
-) Stained or discolored soil;
-) Leachate or seeps;
-) Areas of distressed, discolored, or stained vegetation;
-) Chemical spills or releases;
-) Groundwater or surface water contamination;
-) Oil or gas well exploration, extraction, or refinery activities;
-) Prolonged use or misapplication of pesticides, germicides, soil conditioners, or fertilizers;
-) Farm waste; and
-) Other known or observed environmentally-sensitive or suspect conditions on-site from an off-site source onto the subject property.

b. Assess Adjacent Properties

Baer Engineering will evaluate adjacent properties and properties in the vicinity from public thoroughfares to determine if there are facilities or structures that are likely to use, store, generate, or dispose of hazardous substances or petroleum products.

c. Review Regulatory Records

Baer Engineering will review the following sources to obtain information about the potential for hazardous substances or petroleum products to exist at the site or at properties in the vicinity of the site:

-) US EPA;
-) TCEQ; and
-) Local Fire Department.

AAI requires a review of federal, state, and local government records (or databases containing government records) for the subject property and nearby and adjoining properties. Additional regulation requires search for environmental cleanup liens against the subject property that are filed and recorded under federal, tribal, state, and local law.

d. Review Historical Information.

Baer Engineering will research and review reasonably ascertainable sources of historical information about the property. The purpose is to create a comprehensive review of the potential for releases of hazardous substances at the property. The records that may be reviewed include, but are not limited to:

-) Aerial Photographs;
-) Groundwater Information;

-) Topographic Maps;
-) Environmental Lien Search;
-) Sanborn Maps;
-) Previous Reports provided by the client;
-) Building Department Records;
-) Property Tax Records; and
-) Zoning and Land Use Records.

e. Conduct Interviews

Baer Engineering will conduct interviews with readily available past and present owners, operators, and occupants of the Site, as required by ASTM E 1527-13. These interviews are intended to collect information on the past uses and ownerships of the property and to identify potential conditions that may indicate the presence of releases or threatened releases of hazardous substances or petroleum products at the subject property. Baer Engineering will interview readily available owners and occupants of neighboring and nearby properties, in cases where the site is recently abandoned.

Interviews will be conducted to meet the objectives and performance factors of the AAI (40 CFR 312.20 (e) – (f)). Where possible, interviews will be conducted with, but not limited to, the following:

-) Key Site Managers;
-) Current/Past Facility Managers; and
-) Governmental Officials.

f. Photographic Documentation

Photographs of the site reconnaissance documenting existing site conditions and adjoining properties will be included in the report.

g. Data Gaps

The report will identify and comment on significant data gaps that affect the ability of the Environmental Professional to identify RECs, and the sources of information that were consulted to address the data gaps.

The results of the Phase I ESA will be documented in a written report. The report will include:

-) The Environmental Professional's opinion as to whether RECs exist;
-) Identification of data gaps;
-) Qualifications of the Environmental Professional(s) in **APPENDIX E**; and
-) The signature(s) of the Environmental Professional(s) who prepared the report.

The report format will follow the recommended format included in ASTM E 1527-13, and will include the following:

- | | | |
|-----------------------------|-----------------------|-----------------------|
|) Summary |) Introduction |) Site Description |
|) User-Provided Information |) Records Review |) Site Reconnaissance |
|) Interviews |) Findings |) Opinion of RECs |
|) Additional Investigations |) Conclusions |) Evidence of RECs |
|) Deviations |) Additional Services |) References |
|) Appendices | | |

2.4 Phase I ESA Limitations

The performance of a Phase I ESA is intended to reduce, but not eliminate, the uncertainty regarding the presence of RECs at the site. This Phase I ESA will be limited to information that is “reasonably ascertainable” and “practically reviewable,” according to ASTM standards, considering the time and cost associated with the assessment. Baer Engineering does not guarantee the completeness or accuracy of the regulatory agency files and site listings. No sampling or laboratory analysis to assess the potential presence of environmental conditions in or near the Site is performed under normal Phase I ESA activities and, therefore, was not included in the scope of work for this Phase I ESA.

2.4.1 Significant Assumptions

Each potential REC was evaluated to determine its potential to affect the Site. The evaluations relied on Baer Engineering’s experience with similar sites, and on assumptions about the behavior of contaminants in the subsurface. Baer Engineering believes the assumptions used are reasonable, and the conclusions based on the assumptions will, in most cases, be accurate. However, actual conditions at the Site and the surrounding area may be different from those used in the assumptions. Collection of subsurface samples can help to define the actual conditions, but such additional data collection is beyond the scope of the ASTM E 1527-13 standard.

Hazardous substances and petroleum products from off-site properties can potentially affect down-gradient properties, if the contaminants are transported by surface runoff. Surface releases of liquid flow downhill, so it is assumed surface releases from off-site properties at lower elevations than the Site will not affect the Site. Roads are usually designed to drain water to the edges of the roads, so they typically act to divert surface flow or prevent flow from crossing the road. A general view of topography, and thus surface flow, can be obtained from topographic maps of appropriate scale. Small scale features that affect surface flow, including roads and berms, can be observed during a site visit.

If contaminants move downward through soil and encounter groundwater, the contaminants may migrate in the same manner as the groundwater. The flow direction of groundwater beneath the surface is not as easily determined as the flow of water over the surface. Typically the direction of groundwater flow is similar to that of surface flow. In urban environments the natural areas of recharge to the groundwater may be altered, and, consequently, there may be local perturbations of the gradient. In evaluating the potential for contaminant plumes in groundwater from off-site properties to affect the Site, it was assumed the groundwater flow direction is the same as the general surface flow direction, and groundwater contaminant plumes from off-site properties that are not up-gradient from the Site are not likely to affect the Site. The direction of groundwater flow may mimic the direction of surface flow.

Contaminants that migrate through unsaturated soil are typically limited in their areal extent. A release of a liquid at the surface will tend to migrate primarily downward in soil unless it encounters a relatively impermeable layer such as pavement, clay, or bedrock. Typically, the extent of soil contamination is limited to an area around the release that is on the order of tens of feet. In the case of leaking petroleum storage tank (LPST) sites, contaminated soil usually does not extend beyond the property with the release (BEG, 1997). Consequently, it is expected that nearby sites with only soil contamination from a petroleum release will not likely affect the subject Site, if they are more than about 100

feet from the Site. It is assumed that contaminants other than petroleum will also behave in a similar way.

Contaminants that reach groundwater can spread laterally on top of the water or by becoming dissolved in the water and subsequently migrating, mostly in the down-gradient direction, by advection. The areal extents of contaminant plumes depend on many factors, such as the volume of the contaminant released, and the rate of volatilization, degradation, and dilution. For example, the length of dissolved benzene plumes from LPST sites in Texas usually does not exceed 200 feet, and most of the groundwater plumes are confined to the property where the release occurred. Over ninety percent of benzene plumes in Texas are estimated to be less than 400 feet long (BEG, 1997). Among organic compounds, benzene moves relatively quickly after becoming dissolved in groundwater, so these observations should provide conservative estimates for plumes of other organic compounds. It is expected that nearby sites with contamination from dissolved organic compounds, including petroleum products, will not likely affect the subject Site, if they are more than about 400 feet from the Site. This distance can be considerably reduced for properties that are down-gradient from the Site.

Migration of contaminants through unsaturated soil as vapor is dependent on the method of biodegradation associated with the type of chemical. Petroleum hydrocarbons, low in ethanol content, generally biodegrade rapidly in aerobic conditions. Complete degradation produces water and carbon dioxide. Incomplete degradation can produce intermediate products, typically of a less toxic nature than the original chemical. Some petroleum hydrocarbons, typically high in ethanol content, can biodegrade under anaerobic conditions and produce methane as a byproduct. Alternately, chlorinated solvents, such as those used in dry cleaning facilities, biodegrade under anaerobic conditions. This process is typically much slower, and the chlorinated solvents may produce intermediate chemicals of a higher toxicity level than the parent compounds (US EPA, 2015). These conditions promote vapor plumes that remain near the source of contamination and are limited in their potential for subsurface migration in the case of petroleum hydrocarbons. Chlorinated solvents plumes are more likely to travel further than petroleum hydrocarbon plumes (US EPA, 2011).

These assumptions are based on the most likely interpretation of a limited amount of data. There is always the possibility that conditions are outside the statistical average. Consequently, it is not possible to predict with certainty the effect of off-site contamination on the subject Site.

2.4.2 Limitations and Exceptions

The findings and opinions conveyed via this Phase I ESA report are based on practically reviewable and publicly available information obtained from a variety of sources, enumerated in this report, which Baer Engineering believes are reliable. Baer Engineering has exercised due diligence and performed appropriate inquiry within the limits of the scope of this specific project. Nonetheless, Baer Engineering cannot and does not guarantee the authenticity or reliability of the information it has relied upon. This report is not a comprehensive site characterization and should not be construed as such. The opinions presented in this report are based on findings derived from a site reconnaissance, a review of specified regulatory records and historical sources, and comments made by interviewees. The consultant cannot under any circumstances warrant or guarantee that not finding indicators of hazardous substances or petroleum

products means that hazardous substances or petroleum products do not exist on the Site. Certain indicators of the presence of hazardous substances or petroleum products may have been latent at the time of the site visit and may subsequently become observable. Certain hazardous substances or petroleum products may not provide easily recognizable indicators. Additional research, including invasive testing, can reduce client risk, but no techniques now commonly employed can eliminate these risks altogether.

2.4.3 Deviations

Baer Engineering performed this Phase I ESA in conformance with the scope and limitations of the US EPA AAI and ASTM E 1527-13 Standard. No deviations were included or identified for this scope of work.

2.4.4 Special Terms and Conditions

Baer Engineering advises each client of the risks associated with a Phase I ESA. In essence, a Phase I ESA is a service whose basic elements are determined by the standard of care prevailing at the time the service was rendered in the area where it was rendered. Because standards of care can be identified only through retrospective inquiry, Baer Engineering has assumed that the standard of care is articulated by US EPA AAI and ASTM E 1527-13 Standard.

The guidelines used to define “hazardous materials” were obtained from Title 30 Texas Administrative Code (TAC) §335. For the purposes of this report, the “vicinity” of the Site is defined as properties located near the Site as specified by the approximate minimum search distances defined in US EPA AAI and ASTM E 1527-13 Standard.

2.4.5 User Reliance

San Antonio Water System (SAWS) and its agents are the only intended beneficiaries of this report. They are the only parties to whom Baer Engineering has explained the risks involved in the shaping of the scope of services needed to satisfactorily manage those risks from the client’s point of view. Baer Engineering’s findings and opinions related in this report may not be relied upon by any parties except those listed above. With the consent of SAWS, Baer Engineering is available to contract with other parties to develop findings and opinions related specifically to such other parties’ unique risk management concerns.

The ASTM Standard states that Phase I ESAs completed more than 180 days prior to the time of reliance are no longer considered to be valid. Between 180 days and one year, the Phase I ESA can be updated by conducting the following tasks:

-) Interviews with owners, operators, and occupants;
-) Searches for recorded environmental cleanup liens;
-) Reviews of federal, tribal, state, and local government records;
-) Visual investigation of the property and of adjoining properties; and
-) Declaration by the environmental professional responsible for the assessment or update.

After one year, Phase I ESAs are no longer valid or eligible for updating. The assessment must be repeated in its entirety.

3.0 USER PROVIDED INFORMATION

3.1 Title Records

A title search was not part of the scope of work for this Phase I ESA.

3.2 Environmental Liens or Activity and Use Limitations

The Environmental liens or activity use limitations report does not list records for this property.

3.3 Specialized Knowledge

Baer Engineering contacted SAWS for specialized knowledge of the Site. We were not made aware of such information.

3.4 Commonly Known or Reasonably Ascertainable Information

Baer Engineering is not aware of commonly known or reasonably ascertainable information about the Site.

3.5 Valuation Reduction for Environmental Issues

No information was reported to Baer Engineering concerning the valuation of the property.

3.6 Owner, Property Manager, and Occupant Information

The Site is owned and managed by Terri Carter.

4.0 RECORDS REVIEW

4.1 Standard Environmental Record Sources

EDR conducted a search of environmental regulatory databases to identify potential environmental concerns associated with the Site. The US EPA AAI and ASTM E1527-13 Standard define the minimum search distances for some databases. The following table lists sites located within the minimum search distance. A copy of the database search is presented in **APPENDIX F**.

DATABASE*	SEARCH DISTANCE (MILES)	TARGET PROPERTY (SITE)	TOTAL SITES LISTED**
Federal ASTM Standard Environmental Record Sources			
NPL	1.00	No	0
Delisted NPL	0.50	No	0
CERCLIS	0.50	No	0
CERCLIS-NFRAP	0.50	No	0
RCRA CORRACTS	1.00	No	2
RCRA-TSDF	0.50	No	1
RCRA Generators	Site and Adjoining	No	1
Federal Institutional/Eng Control	Site	No	1
ERNS	Site	No	0
State ASTM Standard Environmental Record Source			
State Equivalent NPL	1.00	No	0
State Equivalent CERCLIS	0.50	No	0
State Landfill	0.50	No	2
LPST	0.50	No	13
USTs and ASTs	Site and Adjoining	No	1
State Institutional/Eng Control	0.50	No	1
TX VCP	0.50	No	2
Brownfields	0.50	No	0
Additional Environmental Record Sources			
Dry Cleaners	0.25	No	0
RCRA NonGen / NLR	0.25	No	4
TX Ind. Haz Waste	0.25	No	6
TX Ind. Haz Waste Corr Action	0.25	No	2
Non-ASTM Database			
EDR MGP	1.00	No	0
EDR US Hist UST	Site and Adjoining	No	0
EDR US Hist Auto Stat	0.25	No	3
EDR US Hist Cleaners	0.25	No	1

* See **APPENDIX F** for abbreviation listings.

** Sites may be listed in more than one database.

National Priorities List (NPL)

No NPL sites are listed at the Site or within 1.0 mile of the Site.

Delisted Sites

No delisted sites are listed at the Site or within 0.5 miles of the Site.

CERCLIS

No CERCLIS sites are listed within 0.5 miles of the Site.

CERCLIS-NFRAP Sites

No CERCLIS-NFRAP sites are listed within 0.5 miles of the Site.

RCRA CORRACTS

Two (2) RCRA-CORRACTS sites are listed at the Site or within 1.0 mile of the Site.

Disposal Properties is located at 4303 Profit Street, approximately 2,050 feet northwest and topographically downgradient relative to the Site. This property began groundwater remediation activities in 2001. A closure report was approved by the TCEQ in 2012. This property is listed as a RCRA conditionally exempt small quantity generator. Wastes listed for this location can be found in **Appendix F**. Non-groundwater engineering controls are listed for this property. This location is listed as a RCRA treatment, storage, and disposal facility (TSDF) Site. Due to the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

4735 Emil Road is approximately 2,210 feet southeast and topographically downgradient relative to the Site. This location is listed as an active superfund site. Records list the site under Aztec Ceramics Corporation. TCEQ lists the start of the cleanup as 1993. The EPA lists the classes of contaminants found and cleaned up as controlled substances, petroleum products, asbestos, lead, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), Polychlorinated biphenyls (PCBs), selenium, iron, arsenic, cadmium, chromium, copper, mercury, nickel, pesticides, semi-volatile organic compounds (SVOCs), and other materials and contaminants. This property is listed as an inactive hazardous waste generator and transporter. The waste management units listed for the property are an automobile junk yard and three holding ponds. Because of its distance from the Site, Baer Engineering does not consider this location to be a REC.

RCRA-TSDF

One RCRA-TSDF site is listed within 0.5 miles of the Site.

Disposal Properties is discussed in the RCRA Corrracts section above.

RCRA Generator Sites

No RCRA Generator sites are listed at or adjoining the Site.

Federal Institutional Control Sites

One Federal Institutional Control site is listed within 0.5 miles of the Site.

Disposal properties is discussed in the RCRA Corrracts section above.

ERNS Sites

No ERNS sites are listed for the Site.

State Equivalent NPL / CERCLIS

No State Equivalent NPL / CERCLIS sites are listed within 1.0 mile of the Site.

State Landfill Sites

Two (2) State Landfill sites are listed within 0.5 miles of the Site.

Romos & Sons Site #2 is located at latitude 29.435833, longitude -98.400833 on a parcel that is approximately 890 feet southwest and topographically downgradient relative to the Site. This location is listed as an unpermitted landfill with little to no information available about the wastes stored on the Site. Due to the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

4614 Emil Street is approximately 2,580 feet south and topographically downgradient relative to the Site. The types of wastes for this location were not listed in the EDR records. This location is listed as a large quantity generator (LQG) industrial hazardous waste site. Because of its distance from the Site, Baer Engineering does not consider this location to be a REC.

TCEQ LPST Sites

Thirteen (13) Leaking Petroleum Storage Tank (LPST) sites were identified within 0.5 miles of the Site.

SITE NAME	ADDRESS	DIRECTION / DISTANCE (FEET)		STATUS
Bluelinx	535 N WW White Road	NW	270	LPST # 105119. Final concurrence issued, case closed. Minor soil contamination.
Fast Strip Food Mart	630 N WW White Road	N	800	LPST # 95699. Final concurrence issued, case closed. Groundwater not impacted.
Mobil Oil	242 N WW White Road	S	1,200	LPST# 92575. Final concurrence issued, case closed. Soil contamination. A groundwater contamination case, dated 1994, is listed for this location.
Schneider Steel	1327 Gemblor Road	SW	1,525	LPST # 97803. Final concurrence issued, case closed. Minor soil contamination.
C R Blank Plumbing	223 Seale Road	NW	1,620	LPST # 98789. Final concurrence issued, case closed. Soil contamination.
Penske Truck Leasing San Antonio Ne Loop	8021 NE Loop 410	NE	1,200	LPST # 108681. Final concurrence issued, case closed. Groundwater not impacted.
Tom Carroll Co	219 Seale Road	NW	1,960	LPST # 98261. Final concurrence issued, case closed. Soil contamination.
Autoshack	1235 Gemblor Road	SW	2,060	LPST # 92304. Final concurrence issued, case closed. Soil contamination.
Oncken Sons Cabinet Shop Inc	203 Seale Road	NW	1,990	LPST # 98915. Final concurrence issued, case closed. Soil contamination.

SITE NAME	ADDRESS	DIRECTION / DISTANCE (FEET)		STATUS
Texas Pallet	727 N WW White Road	NW	1,870	LPST # 106706. Final concurrence issued, case closed. Soil contamination.
Lone Star	4302 Profit Street	W	1,820	LPST # 109005. Final concurrence issued, case closed. Groundwater not impacted.
C H Transportation Co	4330 Factory Hill Street	NW	2,275	LPST # 96011. Final concurrence issued, case closed. No apparent receptors impacted.
Wallace Masonry Co	135 Seale Road	NW	2,480	LPST # 97356. Final concurrence issued, case closed. Soil contamination.

Based on the location of the Site and the topographic features of the area, the groundwater gradient is expected to be towards the southwest. As discussed in Section 2.4.1, sites with petroleum contamination should not affect the subject Site if they are more than 100 feet away (for soil contamination) and 400 feet away (for groundwater contamination). Based on these considerations and the assumed groundwater gradient direction, Baer Engineering does not consider the listed LPST sites to be RECs.

Underground Storage Tank (UST) and Aboveground Storage Tank (AST) Sites

Most petroleum storage tanks (PSTs) that store fuel, either USTs or ASTs, are required to be registered with the TCEQ.

One UST is listed in the regulatory records as being present adjacent to the Site.

Countrys Tex Mart is located at 522 North WW White Road, northwest and adjacent to the Site. Five (5) tanks are listed as removed from the ground on the property in 1995. There is no regulatory record of a release from these tanks . Because the tanks have been removed and the records do not indicate a release, Baer Engineering does not consider this property to be a REC.

State Institutional Control Sites

One State Institutional Control site is listed within 0.5 miles of the Site.

Disposal Properties is discussed in the RCRA Corraacts section above.

Texas Voluntary Cleanup Program (VCP) Sites

Two (2) VCP site are listed within 0.5 miles of the Site.

Chromalloy Gas Turbine Support is located at 4430 Director Drive, approximately 700 feet southwest and topographically downgradient relative to the Site. This location has been entered into the VCP program three (3) times. The property was withdrawn twice and has an active cleanup listed for the site as of May 2015. Contaminants listed for this property are cadmium, nickel, silver, chromium, VOCs, TPH, and chlorinated solvents. The VCP registration lists soil and groundwater as the affected media for the property. This location is listed as an active LPST site. An active large quantity generator industrial hazardous waste (IHW) registration is listed for this location. The IHW waste information is not listed, however three neutralization tanks and drum storage yard are listed for the property. A groundwater contamination case is

listed for this location. Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

A to Z Tire & Battery is located at 4311 Dividend, approximately 1,750 feet west and topographically downgradient relative to the Site. The VCP cleanup status is listed as complete in the records. The contaminants listed for the property are metals, pesticides, benzene, toluene, ethylbenzene, xylene (BTEX), lead, cadmium, TPH, and paraffin. This location is listed as an inactive industrial hazardous waste site. Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

Brownfields Sites

Brownfields are defined by the EPA as:

“A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”

No Brownfields sites are listed within 0.5 miles of the Site.

Dry Cleaner Sites

The only dry cleaning sites are the historical locations discussed in the Additional Records Sources section below. No Dry Cleaner sites are listed in the current TCEQ database within 0.25 miles of the Site.

RCRA Non-Gen/NLR Sites

Four (4) RCRA Non-Gen/NLR Sites are listed within 0.25 miles of the Site.

442 North WW White Road is discussed in the Industrial Hazardous Waste Corrective Action section below.

Chromalloy Gas Turbine Support is located at 4430 Director Drive. This property is discussed in the VCP section above.

Univar USA, Inc. – San Antonio – WW White is located at 631 North WW White Road. This property is discussed in the Industrial Hazardous Waste Corrective Action section below.

Turbine Support is located at 4415 Dividend Drive, approximately 1,000 feet northwest and topographically downgradient relative to the Site. This location is listed as a historical large quantity generator. Wastes listed for this property are: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons. Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

Industrial Hazardous Waste (IHW) Sites

Six (6) IHW sites are listed within 0.25 miles of the Site.

442 North WW White Road is discussed in the Industrial Hazardous Waste Corrective Action section below.

Gifford Hill is located at 402 North WW White Road, approximately 580 feet south and topographically downgradient relative to the Site. Wastes listed for this location are spent solvents. Records list this property as Hanson Pipe and Products. Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

Chromalloy Gas Turbine Support is located at 4430 Director Drive. This property is discussed in the VCP section above.

Univar USA, Inc. – San Antonio – WW White is located at 631 North WW White Road. This property is discussed in the Industrial Hazardous Waste Corrective Action section below.

Turbine Support is located at 4415 Dividend Drive. This property is discussed in the RCRA Non-Gen/NLR section above.

Industrial Hazardous Waste Corrective Action sites

Two (2) Industrial Hazardous Waste Corrective Action sites are listed in the EDR records within 0.25 miles of the Site.

442 North WW White Road is approximately 280 feet south and topographically downgradient relative to the Site. Records list this property under Aggregate Plant Products. Wastes listed for this location are: paint chips, sludge from paint wash unit, paint filters, petroleum contaminated sludge from pressure washing, petroleum contaminated sand and debris, vitreous aluminosilicate fiber from regenerative thermal oxidizer, ceramic packing waste, alkaline earth silicate wool, fluorescent tubes, used oil, oil contaminated soils, used oil filters, water from plasma tables used in metal fabrication, non-hazardous water from wash bay pump, flammable liquids from aerosol cans, black cement, nitric acid, bleach products, germicidal bowl cleanse, glass cleaner, hand soap, pine plus disinfectant, spent thermal fuses, weld kleen 350 anti-spatter liquid, denatured alcohol, and liquid battery acid. The cleanup status of this property is listed as complete in March of 2017. Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

Univar USA, Inc. – San Antonio – WW White is located at 631 North WW White Road, approximately 945 feet northwest and topographically upgradient relative to the Site. The cleanup status of this property is listed as inactive as of July 2010. Wastes listed for this property are: cleaning operations sludge, ferric chloride solution, non hazardous solids and liquids, solids containing flammable liquids, oxidizing solids, and plant trash such as discarded pallets, stencils, boxes, office papers, and styrofoam cups. Wastes listed under RCRA Non-Gen are: ignitable waste, corrosive waste, 2-propanone, acetone, formaldehyde, formic acid, benzene, methyl, toluene, ethene, trichloroethylene, benzene, dimethyl, xylene, ethanol, 2-ethoxy, ethylene glycol, and monoethyl ether. Because of the presumed direction of groundwater flow, distance from the Site, and mobility of some of the contaminants, Baer Engineering considers this location to be a REC.

4.2 Additional Records Sources

4.2.1 Additional EDR Historical Records

EDR searches records beyond those required by the ASTM 1527-13 Standard for Phase I ESAs. Some of these include exclusive EDR records compiled based on collections of business directories and other listings regarding historical land use in the area, such as

UST sites, automobile service stations, and dry cleaners. EDR identified three (3) automobile service stations, and one dry cleaners within 0.25 miles of the subject Site.

HISTORICAL AUTOMOBILE SERVICE STATIONS		
SITE	DIRECTION	DISCUSSION
Tex Mart Service Station / Gasoline Stations 522 North WW White Road	West Adjacent	This property is discussed in the UST section above.
Roberts Automotive Center 515A North WW White Road	West 150 feet	TCEQ records list the USTs at this location as removed from the ground. Because of its proximity to the Site, Baer Engineering considers this location to be a REC.
Dependable Transm & Auto SVC 518 North WW White Road	West Adjacent	Additional records were not located for this property. Because of the unknown status of USTs for this property, Baer Engineering considers this property to be a REC.

SITE	DIRECTION	DISCUSSION
New Genesis 542 North WW White Road	Northwest Adjacent	Additional records were not located for this property. Because of the unknown status of the dry cleaners and unknown chemicals used, Baer Engineering considers this property to be a REC.

4.2.2 Previous Environmental Reports

No previous environmental reports were provided by the client for our review.

4.2.3 Vapor Encroachment Screening

Baer Engineering completed an analysis of the likelihood of vapor migration onto the property using EDR records, soil reports, and the previously stated assumption that groundwater gradients may be represented by surface water flows. This analysis was completed to identify Vapor Encroachment Conditions (VECs), which are defined in the ASTM Standard E 2600 as “the presence or likely presence of vapors in the sub-surface of the target property caused by the release of vapors from contaminated soil or groundwater either on or near the target property.” Based on the available records and site conditions, Baer Engineering identified five (5) VECs for the Site.

A copy of the Vapor Encroachment Screening is presented in **APPENDIX F**.

4.3 Physical Setting Sources

4.3.1 Review of Topographic Maps

Baer Engineering reviewed the 2013 USGS *San Antonio East Quadrangle* topographic map for information about the topography of the Site. A portion of the map is presented in **APPENDIX G**. The map shows the Site is at an approximate elevation between 680 and 670 feet above mean sea level. Topography of the immediate area generally slopes to the southwest.

4.3.2 Flood Map

Baer Engineering reviewed the Federal Emergency Management Agency (FEMA) website for Flood Insurance Rate Maps (FIRMs) for the Site. Review of the flood map for this area, Map Item ID 48029C0410G, indicates the Site is not located within the 100-

year flood zone (FEMA, 2017). A map of the FEMA Firmette of the Site can be found in **APPENDIX F**.

4.3.3 Site Soils

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), the Site lies within the following soil series (USDA, 2017):

-) Lewisville silty clay (LvA), 0 to 1 percent slopes. This soil series is listed as a Class B soil group, with slow infiltration rates.

A map of the Site soils is provided in **APPENDIX F**.

4.3.4 Site Geology and Hydrogeology

According to the Bureau of Economic Geology's (BEG) Geologic Atlas of Texas, the Site is located on Quaternary fluvial terrace deposits (Qt). Qt is a Quaternary formation comprising gravel, sand, silt, and clays.

There are 19 water wells listed within 0.25 miles of the Site. A copy of the well report is provided in **APPENDIX F**.

4.4 Historical Use Information

The Site appears to have been in use as:

-) Part of an agricultural property from 1938 to 1966; and
-) A vacant property from 1938 to the present

4.4.1 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps were ordered from EDR. The resulting report certified that the complete holdings of the Sanborn Library, LLC collection were searched for the target property. Fire insurance maps covering the target property were not found.

The Sanborn map report is available in **APPENDIX G**.

4.4.2 Historical Aerial Photographs

Baer Engineering reviewed a suite of aerial photographs obtained from EDR for information about the history of the Site. Reproductions of these photographs are included in **APPENDIX G**. The scale of each photograph is approximately 1 inch equals 500 feet. The following aerial photographs from the EDR collection were reviewed: 1938, 1950, 1966, 1973, 1982, 1990, 1995, 2005, 2006, 2008, 2010, and 2012.

The 1938 aerial photograph the Site appears to be part of an agricultural property. Springfield Road is visible to the west of the Site. Dietrich Road is visible to the north of the Site. The surrounding properties appear to be in use as agricultural properties. There appears to be several storage tanks approximately 1,600 feet south of the Site. Because of their distance from the Site, Baer Engineering does not consider these tanks to be a REC.

In the 1950 aerial photograph little to no change appears on the Site and the surrounding properties. Some residential structures appear to have been developed north of the Site. The tanks visible in the 1938 aerial appear to have been replaced with larger tanks.

In the 1966 aerial photograph the Site appears to be a vacant property. The surrounding properties appear to have been developed into residential homes and commercial properties. The property to the west across Springfield Road appears to have been developed.

In the 1973 aerial photograph the Site appears unchanged from the 1966 aerial photograph. Properties in the surrounding area have been developed as commercial and residential properties.

In the 1982 and 1990 aerial photographs the Site and surrounding areas show little to no change when compared to the 1973 aerial photograph.

In the 1995 aerial photograph the Site and surrounding areas appear largely unchanged. The tanks south of the Site are no longer visible.

In the 2005 aerial photograph the Site and surrounding areas show little to no change when compared to the 1995 aerial photograph. The area in which the tanks discussed above were located appears to be a parking lot.

In the 2008, 2010, and 2012 aerial photographs the Site and surrounding areas appear largely unchanged.

4.4.3 Historical Topographic Maps

Baer Engineering reviewed historical topographic maps obtained from EDR for additional information about the history of development at the Site. Historical topographic maps were available for 1918, 1927, 1943, 1953, 1967, 1973, 1992 and 2013. Reproductions of portions of the historical topographic maps are presented in **APPENDIX G**.

1918– Floresville 30-minute

This map depicts a railroad crossing the Site and White Road is visible west. There are no structures depicted on the Site or adjacent properties.

1927 – East San Antonio 15-minute

The Site appears to be northeast of the railroad in this map. Structures are visible to the north, south and southeast of the Site.

1943 – East San Antonio 15-minute

The area adjacent to the Site appears unchanged when compared to the 1927 topographic map. The large tanks visible in the 1938 aerial photographs are depicted on this map.

1953 – East San Antonio 7.5-minute

The areas adjacent to the Site appear to have structures in this map. The surrounding area appears to have seen increased development of structures and roadways.

1967 – East San Antonio 7.5-minute

The areas adjacent to the Site appear to have increased development with additional structures and roadways. Interstate Highway 35 and Interstate Highway 410 are visible on this map.

1973 – East San Antonio 7.5-minute

The surrounding areas and adjacent properties have additional structures depicted when compared to the 1967 topographic map.

1992 – East San Antonio 7.5-minute

The surrounding areas have additional large structures and roadways depicted on the map.

2013 – East San Antonio 7.5-minute

This map shows nearby waterways, elevations, and transportation routes. Structure information is not available on this map.

4.4.4 Historical Tenant Search

Baer Engineering requested City Directory listings from EDR. They are provided in **APPENDIX G**. Records dating back to 1956 were provided by EDR. The Site was not listed in the records provided by EDR under the 139 Springfield Road address.

4.4.5 Building Permit Search

Baer Engineering requested a building permit search from EDR. Review of the building records for the area did not reveal additional records pertaining to environmental conditions. A copy of the EDR results is provided in **APPENDIX G**.

5.0 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

Information derived from the Site reconnaissance is presented in this section. A Site Map is provided in **APPENDIX A**. Photographs taken during the Site reconnaissance are presented in **APPENDIX C**.

The Site reconnaissance was conducted by Mr. Mark Sloop, G.I.T., of Baer Engineering, on September 25, 2017. The reconnaissance included an on-site visual observation of the Site and of surrounding properties from publicly-accessible locations. Findings of the Site reconnaissance are presented on the map in **APPENDIX D**.

5.2 General Site Setting

The Site is in an area of residential and commercial properties. Springfield Road is to the northwest of the Site. The properties to the north and west are primarily commercial properties. The properties to the east and south are residential homes and one restaurant.

5.3 Current Uses of the Property

The Site is a vacant property.

5.4 Description of Structures, Roads, and Other Improvements to the Site

Baer Engineering made the following field observations:

-) The Site is a vacant property with ankle to waist high grasses and large trees around the south and eastern perimeters.
-) Springfield Road is adjacent to the Site on the northwest perimeter.
-) Dietrich Road is adjacent to the Site on the north perimeter.
-) One unmarked pole-mounted transformer was observed on the Site. The vegetation at the base of the pole did not appear to be stressed or otherwise impacted by a release from the transformer.

5.5 Current Uses of Adjoining Properties

The properties immediately adjoining the Site have the following uses:

-) East – Residential homes.
-) South – Residential homes and Millie's Mexican Food restaurant.
-) North – Eastside Education and Training Center.
-) West – Sams Auto Repair and Dependable Transmission and Auto.

5.6 Field Observations

During the Site reconnaissance, Mr. Sloop observed the following:

) The Site is a vacant property with ankle to waist high grasses.

) An adjacent property to the south, located at 139 Lula Mae Drive, had an unmarked 55 gallon drum and mounds of what is likely construction debris. The site was gated and access was not available. A photograph of the drums is shown at right. The drum and mounds are circled in yellow. Because of the unknown contents of the drum, Baer Engineering considers this location a REC.



) Sam's Auto Repair, located at 518 North WW White Road, appears to be a former gasoline station. What appear to be dispenser islands remain on the site. Evidence of storage tanks on the property was not observed. A photograph is featured to the right. The fuel pumping pads are circled in yellow.



6.0 INTERVIEWS

6.1 Interview with Owner

An interview questionnaire was provided to the property owner, Terri Carter, on September 21, 2017 by San Antonio Water System. The interview documentation has not been received as of the date of this report.

6.2 Interview with Site Manager

The Site is owned and managed by Terri Carter. The owner's representative interview questionnaire is discussed above.

6.3 Interviews with Local Government Officials

Public records were requested from various local government officials. Documentation of these requests is provided on **APPENDIX H**, as available. Summaries of the information received are as follows:

Bexar County

A request for open records related to the property was made on August 17, 2017. A response from Bexar County on August 17, 2017 stated there were no records related to environmental conditions for this property.

City of San Antonio

A request for open records related to the property was made on August 17, 2017. A response from the City of San Antonio on August 21, 2017 stated there were no records associated with the Site.

Edwards Aquifer Authority

A request for open records related to the property was made on August 17, 2017. A response was received on August 21, 2017 and stated there were no records related to environmental conditions for this property.

San Antonio Metropolitan Health District

A request for open records related to the property was made on August 17, 2017. A response was received on August 21, 2017 and stated there were no records related to environmental conditions for this property.

Other Agencies

An open records request was sent to CPS Energy, Alamo Area Council of Governments (AACOG), and San Antonio River Authority on August 17, 2017. A response was not received as of the date of this report.

6.4 Interviews with Others

Additional interviews with surrounding property owners was conducted for the properties at 113 Lula Mae Drive and 4551 Dietrich Road. The other surrounding properties were not accessible or the owners were not available during the Site reconnaissance.

Mr. Sloop interviewed Ms. Amelia Ebron with Millies Mexican Food Restaurant, located at 113 Lula Mae Drive. Ms. Ebron stated she had no knowledge of activities or conditions related to environmental concerns regarding the Site.

Mr. Sloop interviewed Mr. Frederick Kirksey with East Side Education and Training Center. Mr. Kirksey stated he did not have knowledge of activities or conditions related to environmental concerns regarding the Site.

7.0 EVALUATION

7.1 Findings

The findings and opinions presented are relative to the dates of our Site work and the opinions included in this ESA are based on information obtained during the survey and on our experience. If additional information becomes available that might affect our environmental findings, we request the opportunity to review the information, reassess the potential concerns, and modify our opinions, if warranted. This assessment includes a review of documents prepared by others. Baer Engineering did not conduct a separate review to verify the accuracy of the information in those documents.

Although Baer Engineering has attempted to identify the potential for environmental impacts to the subject Site, potential sources of contamination may have escaped detection because of the limited scope of this assessment, the possible inaccuracy of public records, or the possibility of undetected or unreported environmental incidents. It was not the purpose of this study to determine the actual presence, degree, or extent of contamination, if any, at the Site. This would require additional exploratory work, including sampling and laboratory analysis.

On-site – The Site consists of 2.4 acres of land. We observed:

) The site is a vacant property.

Off-site – The Site is located in an urban area. We observed:

SITE NAME	LOCATION	TYPE
Disposal Properties	4303 Profit Street	RCRA Corrective Action Site
4735 Emil Road	4735 Emil Road	Superfund, RCRA Corrective Action Site
Romos & Sons Site #2	29.435833, -98.400833	Closed unpermitted landfill
4614 Emil Street	4614 Emil Street	Closed landfill, RCRA LQG
Bluelinx	535 N WW White Road	LPST
Fast Strip Food Mart	630 N WW White Road	LPST
Mobil Oil	242 N WW White Road	LPST
Schneider Steel	1327 Gambler Road	LPST
C R Blank Plumbing	223 Seale Road	LPST
Penske Truck Leasing San Antonio NE Loop	8021 NE Loop 410	LPST
Tom Carroll Co	219 Seale Road	LPST
Autoshack	1235 Gambler Road	LPST
Oncken Sons Cabinet Shop Inc	203 Seale Road	LPST
Texas Pallet	727 N WW White Road	LPST
Lone Star	4302 Profit Street	LPST
C H Transportation Co	4330 Factory Hill Street	LPST
Wallace Masonry Co	135 Seale Road	LPST
Countrys Tex Mart	522 North WW White Road	PST
Chromalloy Gas Turbine Support	4430 Director Drive	VCP, LPST, IHW
A to Z Tire & Battery	4311 Dividend Drive	VCP
Turbine Support	4415 Dividend Drive	RCRA Non-Gen, IHW
Gifford Hill	402 North WW White Road	IHW
442 North WW White Road	442 North WW White Road	IHW Corrective Action

SITE NAME	LOCATION	TYPE
Univar USA, Inc. – San Antonio – WW White	631 North WW White Road	IHW Corrective Action
Roberts Automotive Center	515A North WW White Road	Historical Auto Station
Dependable Transm & Auto SVC	518 North WW White Road	Historical Auto Station
New Genesis	542 North WW White Road	Historic Dry Cleaners
139 Lula Mae Drive	139 Lula Mae Drive	55 gallon drum with unknown contents

7.2 Environmental Professional’s Opinion of Impact on the Property

On-site – Baer Engineering did not identify RECs on the Site.

Off-site – Baer Engineering identified one off-site REC.

SITE NAME	LOCATION	REC	TYPE	RATIONALE
Disposal Properties	4303 Profit Street Distance from Site: 2,050 feet Topographic gradient relative the Site: Downgradient	No	RCRA Corrective Action Site	Distance from Site: 2,050 feet Topographic gradient relative the Site: Downgradient This property began groundwater remediation activities in 2001. A closure report was approved by the TCEQ in 2012. Because of the estimated direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.
4735 Emil Road	4735 Emil Road Distance from Site: 2,210 feet Topographic gradient relative the Site: Downgradient	No	Superfund, RCRA Corrective Action Site	This location is listed as an active superfund site. Records list the site under Aztec Ceramics Corporation. TCEQ lists the start of the cleanup as 1993. The EPA lists the classes of contaminants found and cleaned up as controlled substances, petroleum products, asbestos, lead, polycyclic aromatic hydrocarbons (PCBs), volatile organic compounds (VOCs), Polychlorinated biphenyls (PCBs), selenium, iron, arsenic, cadmium, chromium, copper, mercury, nickel, pesticides, semi-volatile organic compounds (SVOCs), other materials and contaminants. Because of the estimated direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.
Romos & Sons Site #2	29.435833, -98.400833 Distance from Site: 890 feet Topographic gradient relative the Site: Downgradient	No	Closed unpermitted landfill	This location is listed as an unpermitted landfill with little to no information available about the wastes stored on the Site. Because of the estimated direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

SITE NAME	LOCATION	REC	TYPE	RATIONALE
4614 Emil Street	4614 Emil Street Distance from Site: 2,580 feet Topographic gradient relative the Site: Downgradient	No	Closed landfill, RCRA LQG	<p>This location is listed as a large quantity generator (LQG) industrial hazardous waste site. The wastes for this location are not listed in the records. Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.</p> <p>As discussed in Section 2.4.1, sites with petroleum contamination should not affect the subject Site, if they are more than 100 feet for soil contamination and 400 feet for groundwater contamination. Based on these considerations and the assumed groundwater gradient direction, Baer Engineering does not consider the listed LPST sites to be RECs.</p>
Bluelinx	535 N WW White Road Distance from Site: 270 feet Topographic gradient relative the Site: Upgradient	No	LPST	
Fast Strip Food Mart	630 N WW White Road Distance from Site: 800 feet Topographic gradient relative the Site: Upgradient	No	LPST	
Mobil Oil	242 N WW White Road Distance from Site: 1,200 feet Topographic gradient relative the Site: Downgradient	No	LPST	
Schneider Steel	1327 Gemblar Road Distance from Site: 1,525 feet Topographic gradient relative the Site: Downgradient	No	LPST	

SITE NAME	LOCATION	REC	TYPE	RATIONALE
C R Blank Plumbing	223 Seale Road Distance from Site: 1,620 feet Topographic gradient relative the Site: Upgradient	No	LPST	
Penske Truck Leasing San Antonio Ne Loop	8021 NE Loop 410 Distance from Site: 1,200 feet Topographic gradient relative the Site: Upgradient	No	LPST	
Tom Carroll Co	219 Seale Road Distance from Site: 1,960 feet Topographic gradient relative the Site: Upgradient	No	LPST	
Autoshack	1235 Gemblar Road Distance from Site: 2,060 feet Topographic gradient relative the Site: Downgradient	No	LPST	
Oncken Sons Cabinet Shop Inc	203 Seale Road Distance from Site: 1,990 feet Topographic gradient relative the Site: Upgradient	No	LPST	

SITE NAME	LOCATION	REC	TYPE	RATIONALE
Texas Pallet	727 N WW White Road Distance from Site: 1,870 feet Topographic gradient relative the Site: Upgradient	No	LPST	
Lone Star	4302 Profit Street Distance from Site: 1,820 feet Topographic gradient relative the Site: Downgradient	No	LPST	
C H Transportation Co	4330 Factory Hill Street Distance from Site: 2,275 feet Topographic gradient relative the Site: Upgradient	No	LPST	
Wallace Masonry Co	135 Seale Road Distance from Site: 2,480 feet Topographic gradient relative the Site: Upgradient	No	LPST	
Countrys Tex Mart	522 North WW White Road Distance from Site: Adjacent Topographic gradient relative the Site: Upgradient	No	PST	Because the tanks have been removed and there is no record of a release at the site, Baer Engineering does not consider this property to be a REC.

SITE NAME	LOCATION	REC	TYPE	RATIONALE
Chromalloy Gas Turbine Support	4430 Director Drive Distance from Site: 700 feet Topographic gradient relative the Site: Downgradient	No	VCP, LPST, IHW	Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.
A to Z Tire & Battery	4311 Dividend Drive Distance from Site: 1,750 feet Topographic gradient relative the Site: Downgradient	No	VCP	The VCP cleanup status is listed as complete in the records. The contaminants listed for the property are metals, pesticides, benzene, toluene, ethylbenzene, xylene (BTEX), lead, cadmium, TPH, and paraffin. This location is listed as an inactive industrial hazardous waste site. Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.
Turbine Support	4415 Dividend Drive Distance from Site: 1,000 feet Topographic gradient relative the Site: Downgradient	Yes	RCRA Non-Gen, IHW	Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.
Gifford Hill	402 North WW White Road Distance from Site: 580 feet Topographic gradient relative the Site: Downgradient	No	IHW	Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.
442 North WW White Road	442 North WW White Road Distance from Site: 280 feet Topographic gradient relative the Site: Downgradient	No	IHW Corrective Action	Because of the presumed direction of groundwater flow and distance from the Site, Baer Engineering does not consider this location to be a REC.

SITE NAME	LOCATION	REC	TYPE	RATIONALE
Univar USA, Inc. – San Antonio – WW White	631 North WW White Road Distance from Site: 945 feet Topographic gradient relative the Site: Upgradient	Yes	IHW Corrective Action	Because of the presumed direction of groundwater flow, distance from the Site, and mobility of some of the contaminants, Baer Engineering considers this location to be a REC.
Roberts Automotive Center	515A North WW White Road Distance from Site: 150 feet Topographic gradient relative the Site: Upgradient	Yes	Historical Auto Station	TCEQ records list the USTs at this location as removed from the ground. Because this property is adjacent to the Site, Baer Engineering considers this location to be a REC.
Dependable Transm & Auto SVC	518 North WW White Road Distance from Site: Adjacent Topographic gradient relative the Site: Upgradient	Yes	Historical Auto Station	Additional records were not located for this property. Because of the unknown status of USTs for this property, Baer Engineering considers this property to be a REC.
New Genesis	542 North WW White Road Distance from Site: Adjacent Topographic gradient relative the Site: Upgradient	Yes	Historic Dry Cleaners	Additional records were not located for this property. Because of the unknown status of the dry cleaners and unknown chemicals used, Baer Engineering considers this property to be a REC.
139 Lula Mae Drive	139 Lula Mae Drive Distance from Site: Adjacent Topographic gradient relative the Site: Downgradient	Yes	Drum with unknown contents	Because of the unknown contents of the drum, Baer Engineering considers this location a REC.

7.3 Conclusions

Baer Engineering and Environmental Consulting, Inc. has performed a Phase I ESA in conformance with the scope and limitations of the EPA AAI and ASTM 1527-13 Standard for the property. Baer Engineering identified Five (5) RECs for this Site from this assessment.

REC #	SITE NAME	LOCATION	TYPE	RATIONALE
1	Univar USA, Inc. – San Antonio – WW White	631 North WW White Road Distance from Site: 945 feet Topographic gradient relative the Site: Upgradient	IHW Corrective Action	Because of the presumed direction of groundwater flow, distance from the Site, and mobility of some of the contaminates, Baer Engineering considers this location to be a REC.
2	Roberts Automotive Center	515A North WW White Road Distance from Site: 150 feet Topographic gradient relative the Site: Upgradient	Historical Auto Station	TCEQ records list the USTs at this location as removed from the ground. Because of the adjacent location, Baer Engineering considers this location to be a REC.
3	Dependable Transm & Auto SVC	518 North WW White Road Distance from Site: Adjacent Topographic gradient relative the Site: Upgradient	Historical Auto Station	Additional records were not located for this property. Because of the unknown status of USTs for this property, Baer Engineering considers this property to be a REC.
4	New Genesis	542 North WW White Road Distance from Site: Adjacent Topographic gradient relative the Site: Upgradient	Historic Dry Cleaners	Additional records were not located for this property. Because of the unknown status of the dry cleaners for this property and unknown chemicals used, Baer Engineering considers this property to be a REC.

REC #	SITE NAME	LOCATION	TYPE	RATIONALE
5	139 Lula Mae Drive	139 Lula Mae Drive Distance from Site: Adjacent Topographic gradient relative the Site: Downgradient	Drum with unknown contents	Because of the unknown contents of the drum and adjacent location, Baer Engineering considers this location a REC.

7.4 Additional Investigations

No additional investigations were performed during the preparation of this report.

7.5 Data Gaps

Right of Entry to the Site was not granted to Baer Engineering at the time of the field reconnaissance. Baer Engineering observed the Site from roadways and public areas within the right of way for Springfield Road. This method is in accordance with ASTM Standard E 1527-13.

7.6 Deletions

There were no deletions identified during the preparation of this report.

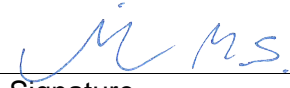
7.7 References

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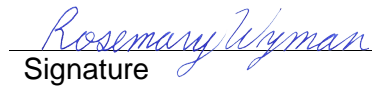
7.8 Statement and Signatures of Environmental Professionals

The preparers represent that to the best of their knowledge the information and facts contained in this report are true and correct. No material facts have been suppressed or misstated.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental professional, as defined in §312.10 of 40 CFR §312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Signature
Mark Sloop, G.I.T.
Date: September 28, 2017
Title: Staff Geologist



Signature
Rosemary Wyman, P.G. (TX 751)
Date: September 28, 2017
Title: Principal Geologist

8.0 NON-SCOPE SERVICES

No additional services beyond those specified by the ASTM E 1527-13 Standard and listed in the contract between Baer Engineering and COA were completed for the Phase I ESA.

9.0 APPENDICES

Supporting documentation and qualifications of the Environmental Professionals are provided below.

Appendix Directory:

- A. Site Map
- B. Vicinity Map
- C. Site Photographs
- D. Site Investigation Findings Map
- E. Qualifications of the Environmental Professionals
- F. Regulatory Records Documentation
 -) FEMA Floodplain Map
 -) NRCS Site Soil map
 -) Radius Map Report
 -) Vapor Encroachment Screen
- G. Historical Research Documentation
 -) Aerial Photographs
 -) Building Permits
 -) City Directory
 -) Environmental Lien and AUL Search
 -) Historical Topographic Maps
 -) Property Tax Map Report
 -) Sanborn Fire Insurance Maps
- H. Interview Documentation
- I. Special Contractual Conditions Between User and Environmental Professional

A. SITE MAP

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan,

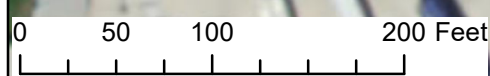


SPRINGFIELD RD

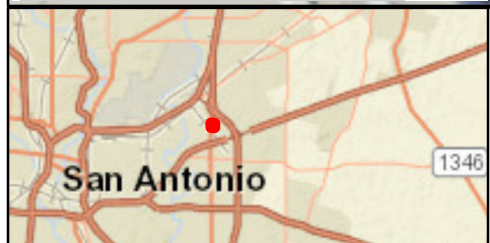
DIETRICH RD

LULA MAE DR

BRANCH RD



Site Boundary



Appendix A: Site Map

139 Springfield Road
San Antonio, Texas

Baer Engineering
Project No. 152060.06

Produced by: Eliza Ornelas
Date: September 22, 2017
Checked by: R. Wyman



Baer Engineering
and Environmental Consulting, Inc.

B. VICINITY MAP

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan,

Vacant

Eastside Education and Training Center

Sam Auto Repair

DIETRICH RD

SPRINGFIELD RD

Dependable Auto Transmission

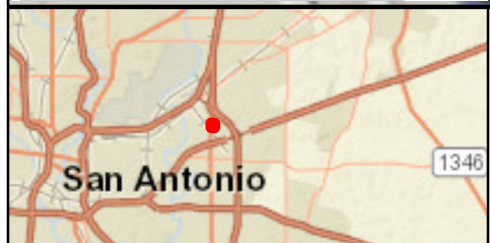
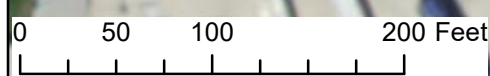
Residences

LULA MAE DR

BRANCH RD

Forterra Pipe and Precast

Site Boundary



Appendix B: Site Vicinity Map

139 Springfield Road
San Antonio, Texas

Baer Engineering
Project No. 152060.06

Produced by: Eliza Ornelas
Date: September 22, 2017
Checked by: R. Wyman



Baer Engineering
and Environmental Consulting, Inc.

C. SITE PHOTOGRAPHS

PHOTOGRAPH #1 – A general view of the Site from Springfield Road.



PHOTOGRAPH #2 – Millie's Mexican Food Restaurant, located at 113 Lula Mae Drive.



PHOTOGRAPHS #3 – Eastside Education and Training Center, located at 4551 Dietrich Road.



PHOTOGRAPH #4 – REC #1 Turbine Support, located at 4415 Dividend Drive.



PHOTOGRAPH #5 – REC # 2 Univar USA, Inc. – San Antonio – WW White, located at 631 North WW White Road.



PHOTOGRAPH #6 – REC #4 Dependable Transm & Auto SVC, located at 518 North WW White Road.



PHOTOGRAPH #7 – REC #5 New Genesis, located at 542 North WW White Road.

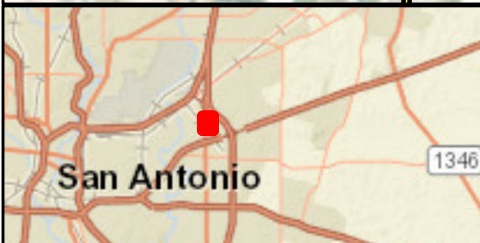
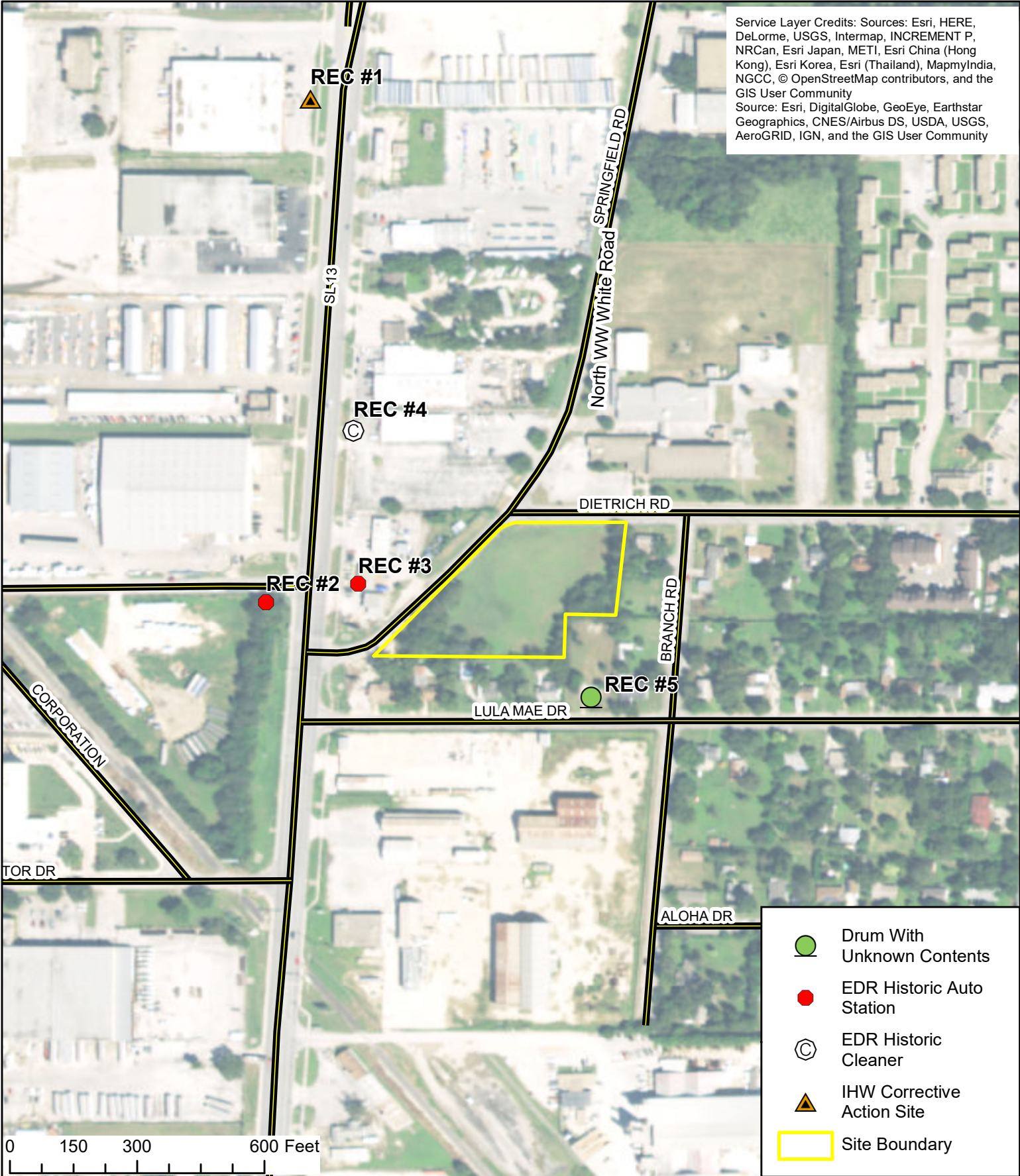


PHOTOGRAPH #8 and 9– Unmarked transformer and vegetation at the base of the pole on the Site.



D. SITE INVESTIGATION FINDINGS MAP

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Appendix D: Site Investigation Findings Map
 139 Springfield Road
 San Antonio, Texas

Baer Engineering
 Project No. 152060.06

Produced by: Eliza Ornelas
 Date: September 25, 2017
 Checked by: R. Wyman

Baer Engineering
and Environmental Consulting, Inc.

Note: Phase I Environmental Site Assessment Appendices E through I are not included in the Draft EID due to the size of the search records; however, they can be provided upon request

Appendix B6

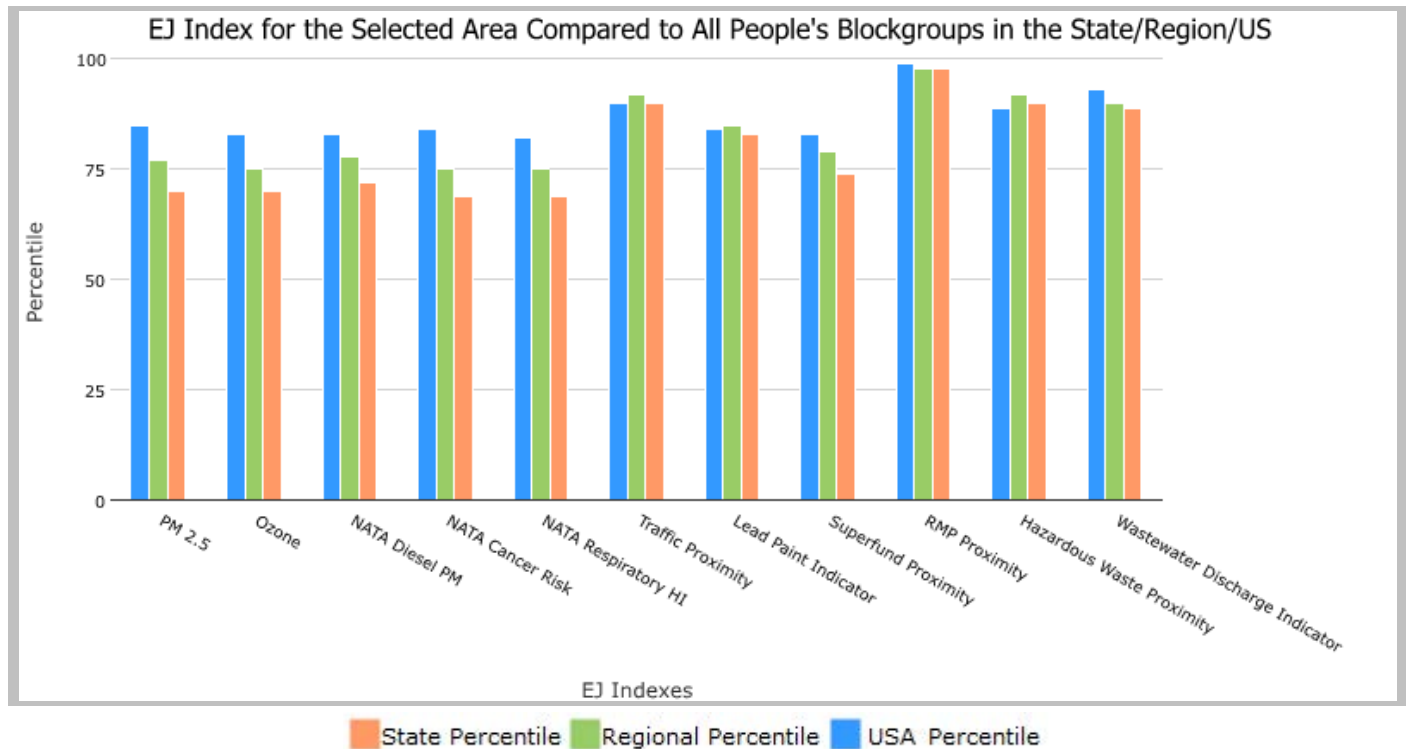
Social Implications & Environmental Justice

0.5 miles Ring Centered at 29.441052,-98.403942, TEXAS, EPA Region 6

Approximate Population: 750

Input Area (sq. miles): 0.79

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	70	77	85
EJ Index for Ozone	70	75	83
EJ Index for NATA* Diesel PM	72	78	83
EJ Index for NATA* Air Toxics Cancer Risk	69	75	84
EJ Index for NATA* Respiratory Hazard Index	69	75	82
EJ Index for Traffic Proximity and Volume	90	92	90
EJ Index for Lead Paint Indicator	83	85	84
EJ Index for Superfund Proximity	74	79	83
EJ Index for RMP Proximity	98	98	99
EJ Index for Hazardous Waste Proximity	90	92	89
EJ Index for Wastewater Discharge Indicator	89	90	93

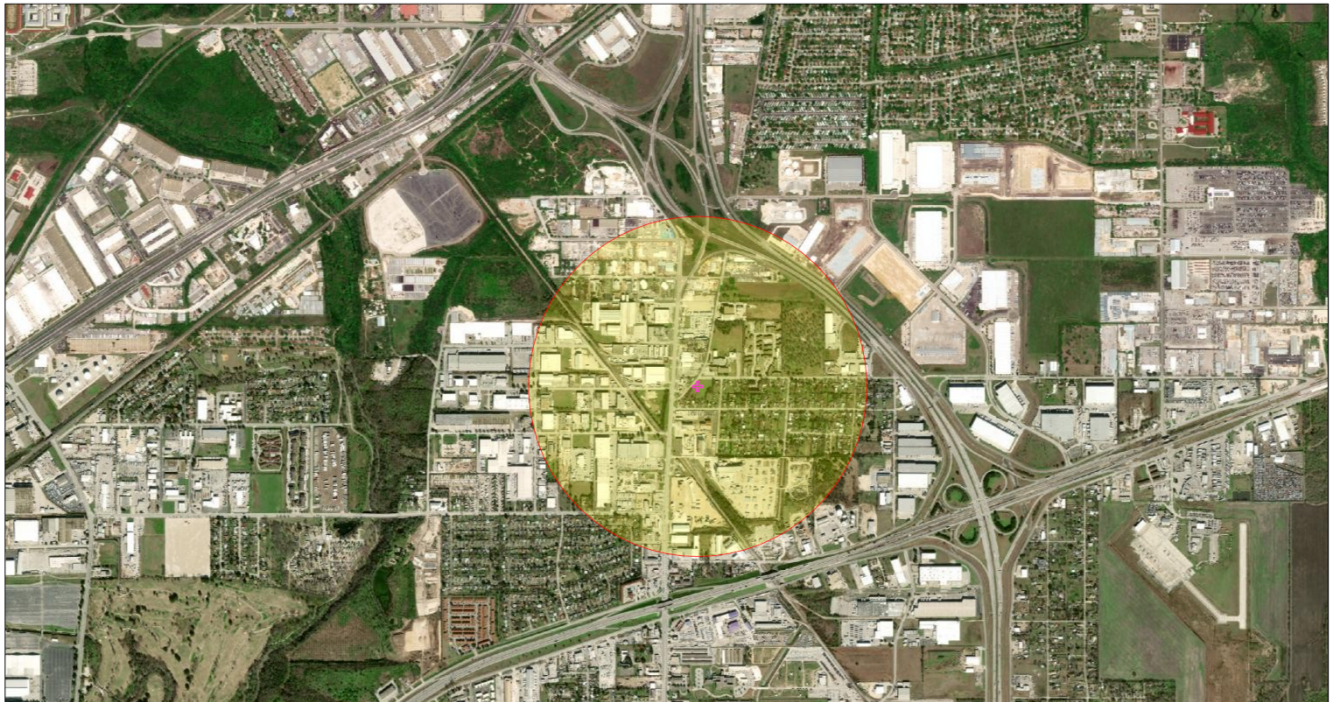


This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

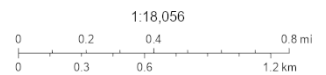
0.5 miles Ring Centered at 29.441052,-98.403942, TEXAS, EPA Region 6

Approximate Population: 750

Input Area (sq. miles): 0.79



June 19, 2020
 + Project 1



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

EJSCREEN Report (Version 2019)



0.5 miles Ring Centered at 29.441052,-98.403942, TEXAS, EPA Region 6

Approximate Population: 750

Input Area (sq. miles): 0.79

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	8.35	8.43	45	8.37	46	8.3	50
Ozone (ppb)	36.3	38.4	29	39.4	24	43	14
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	0.451	0.429	55	0.401	60-70th	0.479	50-60th
NATA* Cancer Risk (lifetime risk per million)	31	35	32	36	<50th	32	<50th
NATA* Respiratory Hazard Index	0.4	0.43	36	0.45	<50th	0.44	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	1100	470	89	400	91	750	82
Lead Paint Indicator (% Pre-1960 Housing)	0.2	0.15	74	0.17	71	0.28	51
Superfund Proximity (site count/km distance)	0.068	0.085	65	0.081	68	0.13	53
RMP Proximity (facility count/km distance)	7.5	0.91	99	0.82	99	0.74	99
Hazardous Waste Proximity (facility count/km distance)	2.3	0.83	91	0.75	92	4	80
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.014	0.19	80	9.8	82	14	81
Demographic Indicators							
Demographic Index	72%	47%	81	44%	84	36%	90
Minority Population	92%	57%	83	51%	86	39%	91
Low Income Population	52%	36%	74	37%	73	33%	80
Linguistically Isolated Population	8%	8%	66	6%	74	4%	80
Population With Less Than High School Education	10%	17%	41	16%	41	13%	53
Population Under 5 years of age	14%	7%	94	7%	95	6%	96
Population over 64 years of age	11%	12%	53	13%	45	15%	35

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

Location: User-specified point center at 29.441052, -98.403942
 Ring (buffer): 0.5-miles radius
 Description:

Summary of ACS Estimates		2013 - 2017
Population		750
Population Density (per sq. mile)		796
Minority Population		687
% Minority		92%
Households		279
Housing Units		352
Housing Units Built Before 1950		28
Per Capita Income		14,519
Land Area (sq. miles) (Source: SF1)		0.94
% Land Area		99%
Water Area (sq. miles) (Source: SF1)		0.01
% Water Area		1%

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	750	100%	515
Population Reporting One Race	726	97%	1,171
White	287	38%	474
Black	342	46%	358
American Indian	0	0%	20
Asian	5	1%	95
Pacific Islander	0	0%	13
Some Other Race	93	12%	211
Population Reporting Two or More Races	24	3%	72
Total Hispanic Population	332	44%	491
Total Non-Hispanic Population	418		
White Alone	63	8%	260
Black Alone	328	44%	355
American Indian Alone	0	0%	20
Non-Hispanic Asian Alone	5	1%	95
Pacific Islander Alone	0	0%	13
Other Race Alone	1	0%	29
Two or More Races Alone	22	3%	43
Population by Sex			
Male	289	39%	332
Female	461	61%	307
Population by Age			
Age 0-4	107	14%	108
Age 0-17	291	39%	246
Age 18+	460	61%	271
Age 65+	80	11%	107

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017

Location: User-specified point center at 29.441052, -98.403942

Ring (buffer): 0.5-miles radius

Description:

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	357	100%	267
Less than 9th Grade	23	7%	89
9th - 12th Grade, No Diploma	13	4%	107
High School Graduate	175	49%	158
Some College, No Degree	121	34%	177
Associate Degree	18	5%	66
Bachelor's Degree or more	24	7%	86
Population Age 5+ Years by Ability to Speak English			
Total	644	100%	475
Speak only English	462	72%	299
Non-English at Home ¹⁺²⁺³⁺⁴	181	28%	324
¹ Speak English "very well"	141	22%	271
² Speak English "well"	20	3%	85
³ Speak English "not well"	20	3%	147
⁴ Speak English "not at all"	1	0%	34
³⁺⁴ Speak English "less than well"	21	3%	150
²⁺³⁺⁴ Speak English "less than very well"	40	6%	172
Linguistically Isolated Households*			
Total	23	100%	63
Speak Spanish	22	97%	62
Speak Other Indo-European Languages	0	0%	13
Speak Asian-Pacific Island Languages	1	3%	25
Speak Other Languages	0	0%	13
Households by Household Income			
Household Income Base	279	100%	159
< \$15,000	81	29%	101
\$15,000 - \$25,000	10	4%	92
\$25,000 - \$50,000	111	40%	114
\$50,000 - \$75,000	59	21%	94
\$75,000 +	18	7%	75
Occupied Housing Units by Tenure			
Total	279	100%	159
Owner Occupied	65	23%	154
Renter Occupied	215	77%	110
Employed Population Age 16+ Years			
Total	472	100%	291
In Labor Force	257	54%	250
Civilian Unemployed in Labor Force	23	5%	75
Not In Labor Force	215	46%	202

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of anyrace.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)

*Households in which no one 14 and over speaks English "very well" or speaks English only.

Location: User-specified point center at 29.441052, -98.403942

Ring (buffer): 0.5-miles radius

Description:

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	1,251	100%	435
English	796	64%	382
Spanish	388	31%	308
French	25	2%	13
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	0	0%	13
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	0	0%	13
Chinese	0	0%	13
Japanese	N/A	N/A	N/A
Korean	0	0%	13
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	7	1%	38
Other Asian	0	0%	13
Tagalog	29	2%	95
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	0	0%	13
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	6	0%	29
Total Non-English	455	36%	579

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017.

*Population by Language Spoken at Home is available at the census tract summary level and up.



Location: User-specified point center at 29.440773, -98.403575

Ring (buffer): .5-miles radius

Description:

Summary		Census 2010
Population		855
Population Density (per sq. mile)		1,154
Minority Population		779
% Minority		91%
Households		308
Housing Units		366
Land Area (sq. miles)		0.74
% Land Area		100%
Water Area (sq. miles)		0.00
% Water Area		0%

Population by Race	Number	Percent
Total	855	-----
Population Reporting One Race	810	95%
White	238	28%
Black	439	51%
American Indian	7	1%
Asian	24	3%
Pacific Islander	0	0%
Some Other Race	102	12%
Population Reporting Two or More Races	45	5%
Total Hispanic Population	321	38%
Total Non-Hispanic Population	534	62%
White Alone	76	9%
Black Alone	416	49%
American Indian Alone	3	0%
Non-Hispanic Asian Alone	24	3%
Pacific Islander Alone	0	0%
Other Race Alone	0	0%
Two or More Races Alone	15	2%

Population by Sex	Number	Percent
Male	396	46%
Female	459	54%

Population by Age	Number	Percent
Age 0-4	98	11%
Age 0-17	316	37%
Age 18+	539	63%
Age 65+	55	6%

Households by Tenure	Number	Percent
Total	308	
Owner Occupied	73	24%
Renter Occupied	235	76%

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.


Source: U.S. Census Bureau, Census 2010 Summary File 1.

QuickFacts

Bexar County, Texas; San Antonio city, Texas; Texas; United States

QuickFacts provides statistics for all states and counties, and for cities and towns with a *population of 5,000 or more*.

Table

All Topics	Bexar County, Texas	San Antonio city, Texas	Texas	United States
Population estimates, July 1, 2019, (V2019)	2,003,554	1,547,253	28,995,881	328,239,523
 PEOPLE				
Population				
Population estimates, July 1, 2019, (V2019)	2,003,554	1,547,253	28,995,881	328,239,523
Population estimates base, April 1, 2010, (V2019)	1,714,781	1,326,161	25,146,091	308,758,105
Population, percent change - April 1, 2010 (estimates base) to July 1, 2019, (V2019)	16.8%	16.7%	15.3%	6.3%
Population, Census, April 1, 2010	1,714,773	1,327,407	25,145,561	308,745,538
Age and Sex				
Persons under 5 years, percent	▲ 7.1%	▲ 7.1%	▲ 7.1%	▲ 6.1%
Persons under 18 years, percent	▲ 25.6%	▲ 25.3%	▲ 25.8%	▲ 22.4%
Persons 65 years and over, percent	▲ 12.1%	▲ 11.8%	▲ 12.6%	▲ 16.0%
Female persons, percent	▲ 50.6%	▲ 50.6%	▲ 50.3%	▲ 50.8%
Race and Hispanic Origin				
White alone, percent	▲ 84.4%	▲ 80.5%	▲ 78.8%	▲ 76.5%
Black or African American alone, percent (a)	▲ 8.5%	▲ 6.9%	▲ 12.8%	▲ 13.4%
American Indian and Alaska Native alone, percent (a)	▲ 1.2%	▲ 0.8%	▲ 1.0%	▲ 1.3%
Asian alone, percent (a)	▲ 3.3%	▲ 2.8%	▲ 5.2%	▲ 5.9%
Native Hawaiian and Other Pacific Islander alone, percent (a)	▲ 0.2%	▲ 0.1%	▲ 0.1%	▲ 0.2%
Two or More Races, percent	▲ 2.4%	▲ 2.8%	▲ 2.0%	▲ 2.7%
Hispanic or Latino, percent (b)	▲ 60.5%	▲ 64.2%	▲ 39.6%	▲ 18.3%
White alone, not Hispanic or Latino, percent	▲ 27.4%	▲ 24.8%	▲ 41.5%	▲ 60.4%
Population Characteristics				
Veterans, 2014-2018	149,790	103,935	1,474,232	18,611,432
Foreign born persons, percent, 2014-2018	13.3%	14.3%	17.0%	13.5%
Housing				
Housing units, July 1, 2019, (V2019)	705,038	X	11,283,353	139,684,244
Owner-occupied housing unit rate, 2014-2018	58.8%	54.4%	61.9%	63.8%
Median value of owner-occupied housing units, 2014-2018	\$152,400	\$136,800	\$161,700	\$204,900
Median selected monthly owner costs -with a mortgage, 2014-2018	\$1,423	\$1,351	\$1,549	\$1,558
Median selected monthly owner costs -without a mortgage, 2014-2018	\$480	\$465	\$500	\$490
Median gross rent, 2014-2018	\$980	\$958	\$998	\$1,023
Building permits, 2019	11,159	X	209,895	1,386,048
Families & Living Arrangements				
Households, 2014-2018	632,574	497,794	9,553,046	119,730,128
Persons per household, 2014-2018	3.00	2.94	2.86	2.63
Living in same house 1 year ago, percent of persons age 1 year+, 2014-2018	83.1%	82.9%	84.1%	85.5%
Language other than English spoken at home, percent of persons age 5 years+, 2014-2018	40.1%	43.4%	35.5%	21.5%
Computer and Internet Use				
Households with a computer, percent, 2014-2018	89.3%	87.9%	89.2%	88.8%
Households with a broadband Internet subscription, percent, 2014-2018	78.9%	76.6%	79.3%	80.4%
Education				
High school graduate or higher, percent of persons age 25 years+, 2014-2018	83.8%	82.0%	83.2%	87.7%
Bachelor's degree or higher, percent of persons age 25 years+, 2014-2018	27.6%	25.9%	29.3%	31.5%
Health				
With a disability, under age 65 years, percent, 2014-2018	10.5%	10.8%	7.9%	8.6%
Persons without health insurance, under age 65 years, percent	▲ 17.8%	▲ 18.4%	▲ 20.0%	▲ 10.0%
Economy				

In civilian labor force, total, percent of population age 16 years+, 2014-2018	63.6%	63.6%	64.2%	62.9%
In civilian labor force, female, percent of population age 16 years+, 2014-2018	58.3%	58.4%	57.7%	58.2%
Total accommodation and food services sales, 2012 (\$1,000) (c)	5,006,725	4,616,284	54,480,811	708,138,598
Total health care and social assistance receipts/revenue, 2012 (\$1,000) (c)	12,143,604	11,490,155	145,035,130	2,040,441,203
Total manufacturers shipments, 2012 (\$1,000) (c)	14,766,148	14,068,085	702,603,073	5,696,729,632
Total merchant wholesaler sales, 2012 (\$1,000) (c)	D	D	691,242,607	5,208,023,478
Total retail sales, 2012 (\$1,000) (c)	26,480,589	23,870,168	356,116,376	4,219,821,871
Total retail sales per capita, 2012 (c)	\$14,829	\$17,260	\$13,666	\$13,443

Transportation

Mean travel time to work (minutes), workers age 16 years+, 2014-2018	25.3	24.4	26.4	26.6
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Income & Poverty

Median household income (in 2018 dollars), 2014-2018	\$55,456	\$50,980	\$59,570	\$60,293
Per capita income in past 12 months (in 2018 dollars), 2014-2018	\$26,988	\$25,091	\$30,143	\$32,621
Persons in poverty, percent	▲ 17.2%	▲ 18.6%	▲ 14.9%	▲ 11.8%

BUSINESSES

Businesses

Total employer establishments, 2017	36,401	X	592,677 ¹	7,860,674
Total employment, 2017	751,933	X	10,580,160 ¹	128,591,812
Total annual payroll, 2017 (\$1,000)	33,852,351	X	544,772,560 ¹	6,725,346,754
Total employment, percent change, 2016-2017	1.5%	X	1.4% ¹	1.5%
Total nonemployer establishments, 2018	151,882	X	2,514,301	26,485,532
All firms, 2012	147,956	117,546	2,356,748	27,626,360
Men-owned firms, 2012	79,932	63,283	1,251,696	14,844,597
Women-owned firms, 2012	55,036	44,295	866,678	9,878,397
Minority-owned firms, 2012	85,682	71,287	1,070,392	7,952,386
Nonminority-owned firms, 2012	57,291	41,983	1,224,845	18,987,918
Veteran-owned firms, 2012	15,655	11,725	213,590	2,521,682
Nonveteran-owned firms, 2012	126,374	101,019	2,057,218	24,070,685

GEOGRAPHY

Geography

Population per square mile, 2010	1,383.1	2,879.8	96.3	87.4
Land area in square miles, 2010	1,239.82	460.93	261,231.71	3,531,905.43
FIPS Code	48029	4865000	48	1

About datasets used in this table

Value Notes

- 1. Includes data not distributed by county.

Estimates are not comparable to other geographic levels due to methodology differences that may exist between different data sources.

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable. Click the Quick Info icon to the row in TABLE view to learn about sampling error.

The vintage year (e.g., V2019) refers to the final year of the series (2010 thru 2019). *Different vintage years of estimates are not comparable.*

Fact Notes

- (a) Includes persons reporting only one race
- (b) Hispanics may be of any race, so also are included in applicable race categories
- (c) Economic Census - Puerto Rico data are not comparable to U.S. Economic Census data

Value Flags

- Either no or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest or upper interval distribution.
- D Suppressed to avoid disclosure of confidential information
- F Fewer than 25 firms
- FN Footnote on this item in place of data
- N Data for this geographic area cannot be displayed because the number of sample cases is too small.
- NA Not available
- S Suppressed; does not meet publication standards
- X Not applicable
- Z Value greater than zero but less than half unit of measure shown

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits.

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