Permit Application Attachment

TWDB Track #201608372

EAST WILLIAMSON COUNTY REGIONAL WATER TRANSMISSION SYSTEM

Introduction

The Lone Star Regional Water Authority (Authority or LSRWA), a non-profit wholesale water supplier created by the Texas Legislature is proposing a project titled the East Williamson County Regional Water Transmission System (EWCRWTS). The EWCRWTS Includes approximately 115,000 linear feet of 24" water line, approximately 2,000 l.f. of 16" water line, two ground storage tanks, one standpipe and two high service pump stations.

The majority of the pipeline will be on private easement adjacent to public road rights-of-way (ROW) where the landowner makes it available. Future realignments could place the line inside Williamson County Road Right-of-Way. Short segments fall in Williamson County Land (200 feet) and on land controlled by the United States Corps of Engineers (USACE) (650 feet). The Authority is a political subdivision of the State of Texas and is seeking funding through the Texas Water Development Board (TWDB) SWIFT project funding.

The proposed activity is a dual jurisdiction project. The part of the pipeline project located on land owned by political subdivisions of the state are subject to requirements of the Antiquities Code of Texas. The segment of the pipeline project located on land owned by the USACE is subject to Section 106 of the National Historic Preservation Act and the requirements of the National Environmental Protection Act (NEPA).

Background

The Brazos River Authority (BRA) currently operates a 14 MGD water treatment plant on the south side of Lake Granger. BRA has a potable 27" water line in place from the water plant west to Circleville at State Highway 95. Lone Star Regional Water Authority intends to buy water from BRA by tieing-into this existing 27" water line and construct the EWCRWTS pipeline from Circleville to a site near I.H.35 in Jarrell. Storage tanks, pump stations and 22.2 miles of water line will be constructed. Participants in the Project that intend to purchase water wholesale from the Authority are the City of Jarrell, Jarrell-Schwertner Water Supply Corporation and the Sonterra MUD (in Jarrell).

Project Area

The proposed project is located in rural eastern Williamson County and includes a water pipeline designed to transport water originating from Lake Granger, northwesterly to the Jarrell, Texas area across undeveloped farmland (Figure 1). With the exception of a few minor deviations, the pipeline parallels existing county roadways. There are no buildings or structures along the route that will be impacted by the construction. Three significant waterways, the San Gabriel River, Pecan Branch, and Willis Creek (at CR 382) will be crossed by boring. Additional streams will be trenched including Opossum Creek, Yankee Branch, the North Fork of Donahoe Creek, and Donahoe Creek.

All three plant sites are essentially flat level farmland, with no distinguishing features or known historical use. The Circleville site currently is adjacent to a commercial propane business and trailer park. The other two sites are farmland. The majority of the pipeline will be on adjacent private easement where the landowner makes it available. Segments fall in Williamson County Road lands and on land controlled by the USACE.

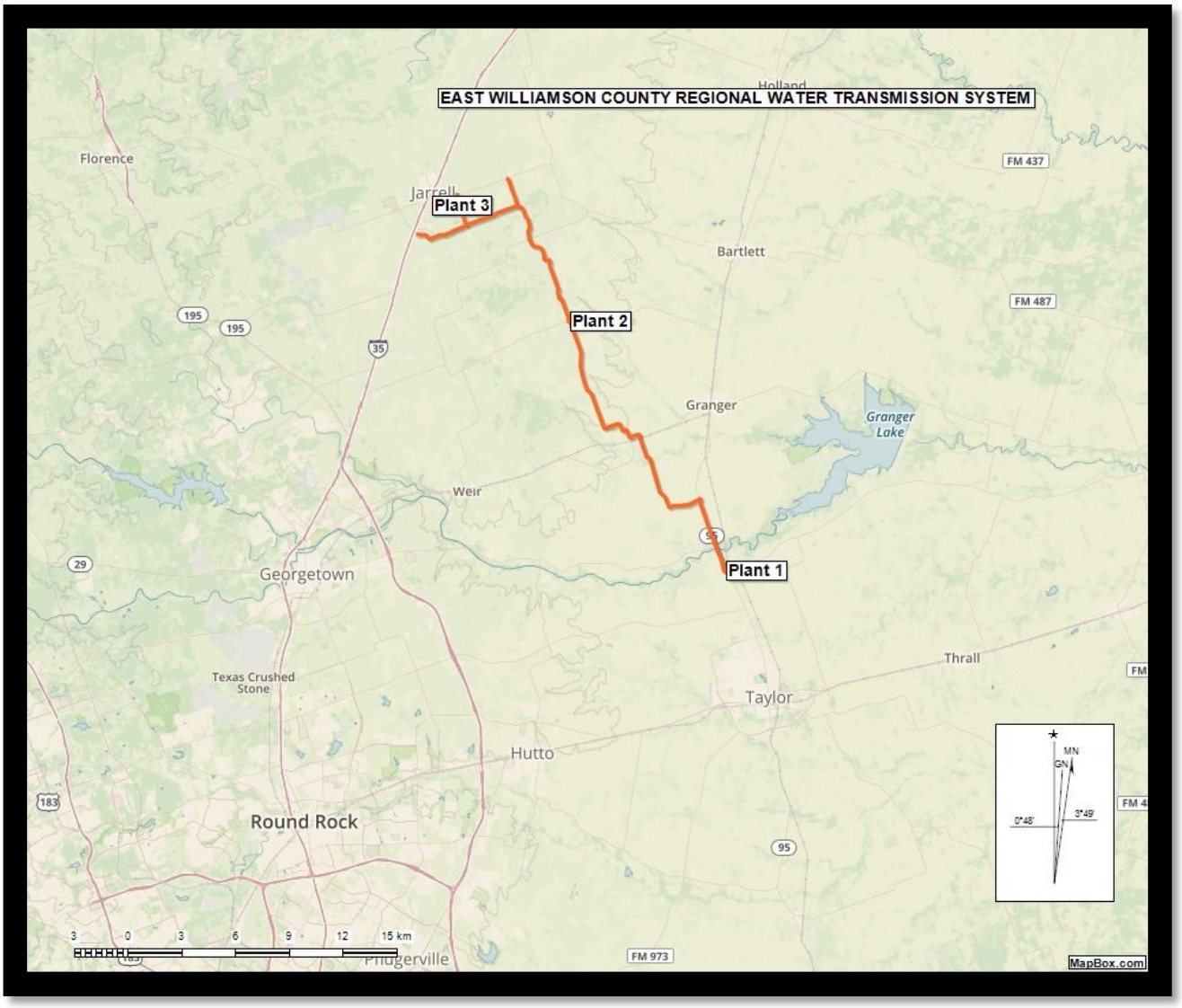


Figure 1. Map Showing the Alignment of the East Williamson County Regional Water Transmission Line System.

Project Description

The EWCRWTS includes approximately 22.2 miles of 24 inch waterline which will connect to an existing pipe location on State Hwy 95 in Circleville to a location near IH 35 in Jarrell, Tx. (Figure 2). Ground storage tanks and pump stations will be located at each end of the line, and at one midpoint in the line. Water will be pumped from a connection that originates out of the Granger Reservoir.

The 24 in. pipeline will be approximately 7 ft in depth and 4 ft in width. The three plant sites will range from .4 to 1 acre in size. Excavation at the plant sites will include foundations for the water storage tanks and turbine pumps. The deepest excavation will be up to 12 feet and width a maximum of 40 feet at the sites. Boring to depths of 5 feet to 30 feet will be performed at county road and major stream crossings. Bore pits will be placed on both sides of waterways and will measure 50 feet by 25 feet each. The length of bores varies from 195 feet at the San Gabriel River to 30 feet at Pecan Branch.

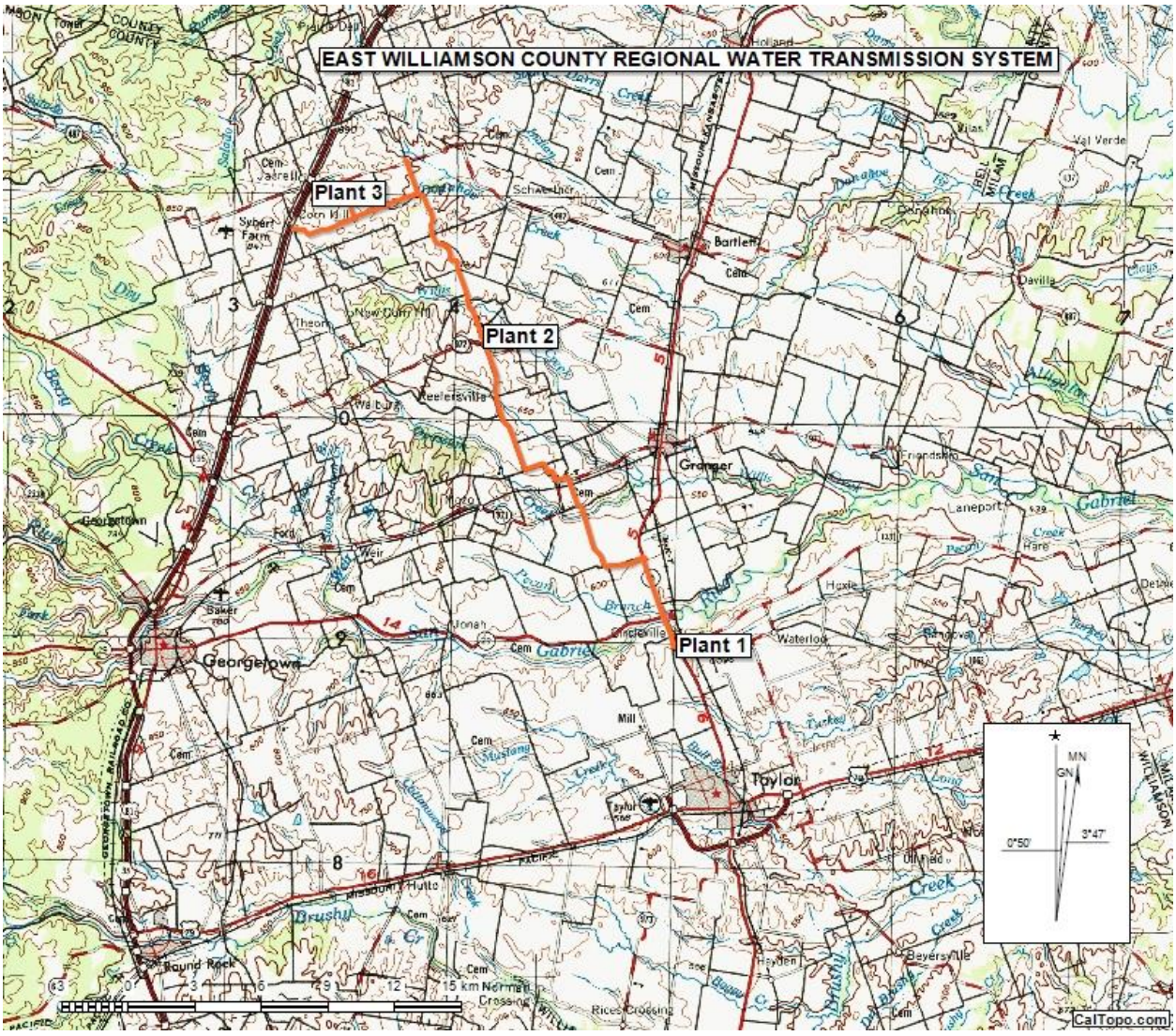


Figure 2. Regional Map Showing the Location of the East Williamson County Regional Water Line Transmission System.

The project will require two combination "Ground Storage Tank and High Service Pump Station" sites and one "Standpipe" site. Tank and High Service Pump Station Site No. 1 will be located at Circleville, near SH 95. At this site a 500,000 gallon, 30 foot high ground storage tank with a 55 foot diameter concrete ringwall foundation will be constructed, along with a 34 feet by 15 feet by 15 feet high electrical control building. Piping and pumps will also be included on the 1 acre site.

The second site, Tank and High Service Pump Station Site No. 2 will include identical improvements to Site No. 1. both sites are 1.0 acres in size. The site in Circleville is adjacent to an existing propane business and RV park, and site No. 2 is located on improved pastureland. The third site, the Standpipe Site No. 3, where the pipeline will terminate, will include a water standpipe on a tract 130 feet by 130 feet in size. The tract is currently in cultivated farmland and lies east of IH 35.

CULTURAL RESOURCES SURVEY

A project review by the Texas Historical Commission (THC) dated July 7, 2016, found that the majority of the pipeline route had not been surveyed by professional archeologists. The reviewer found that the portions of the pipeline that fall within 300 meters of all streams and tributaries should be surveyed by archeologists. In addition, the survey should include shovel testing in areas with the potential for alluvial deposition regardless of surface visibility. Lastly, if there is a potential for deeply buried cultural deposits within the depths of impacts, deeper subsurface investigations (such as backhoe trenching) may be required.

METHODS

Pre-field Preparations

In preparation for the completion of this permit application, preliminary background research was conducted to locate previously known archeological sites, stream and tributary crossings, to identify soils at crossings, to ascertain current land use, and to determine if previous cultural resource management (CRM) surveys had been performed along the pipeline route. A total of 24 crossings of water ways depicted as blue lines on United States Geological Survey (USGS) topographic maps were located along the 22.2 mile pipeline route. Previously known prehistoric and historic archeological sites fall in the vicinity of the ROW, but none fall inside it.

Soils mapped along minor drainages are shallow clays formed *in situ* from clays, shales, marl, and mudstones with the exception of major streams where alluvial sediments are present. Three major waterway crossings along the ROW include locations with alluvial soils with the potential to possess buried cultural deposits. Current land use of all the ROW with the exception of major waters ways is agricultural. Properties have been under cultivation since the late 1800s and many of the fields have been altered by artificial terracing and drainage control.

Previous CRM survey level investigations were conducted near the San Gabriel River crossing, the Yankee Branch crossing, and at all Donahoe Creek crossings along the pipeline. Prehistoric sites were found on major waterways and historic sites were found at minor water ways crossings. All sites fall outside the proposed pipeline alignment and were judged to be ineligible for listing in the National Register of Historic Places (NRHP) by the THC (Moore 2001, Owens 2006, Nash et al 2009).

Pedestrian Survey

The pedestrian survey will follow Secretary of the Interior guidelines and the State of Texas Archeological Survey Standards with modifications regarding shovel testing of areas where the surface visibility exceeds 40 percent. The survey will cover linear areas 50 feet wide situated within 300 meters at the San Gabriel River crossing, at three major streams with deep alluvial deposits, one major stream without deep alluvial soils, and at four selected tributary crossings (Figure 3). Plant locales are situated away from stream crossings and will not be surveyed.

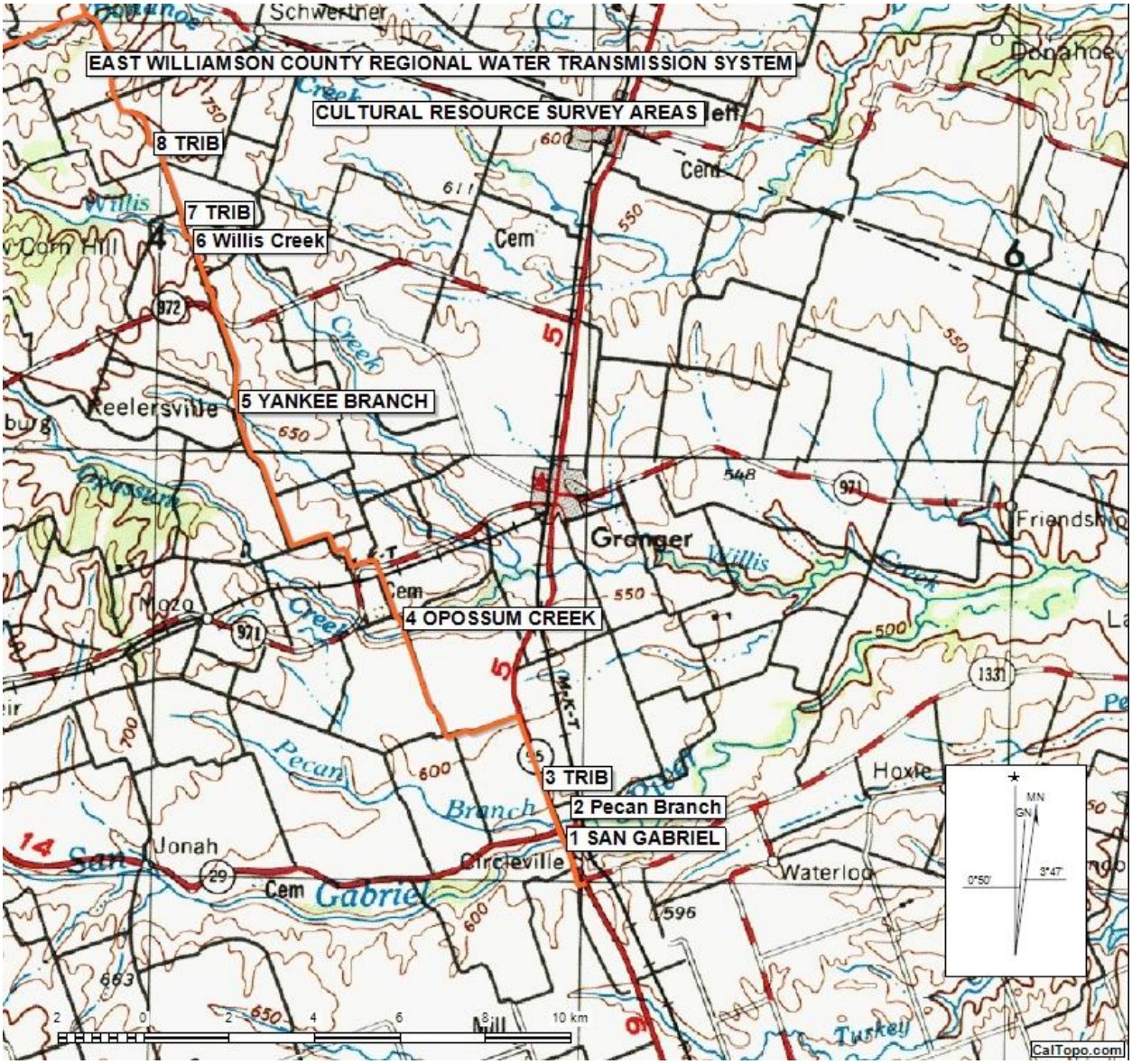


Figure 3. Map Showing Waterway Crossings that are High Probability Areas for Cultural Resources Which Will Be Surveyed.

Five crossings are at locales with alluvial deposition and are considered to be high probability areas (HPAs) for cultural resources and the presence of buried deposits and are: the San Gabriel River, Pecan Branch, Opossum Creek, Willis Creek, and Donahoe Creek. Although thought of as HPAs, the four Donahoe Creek crossings along the pipeline route near Jarrell have been previously surveyed and despite the presence of alluvial soils, findings were negative (Owens 2006). Therefore, the crossing of Donahoe Creek and its tributary crossings are considered to be LPAs for cultural resources and will not be surveyed.

Intensive pedestrian survey with shovel testing will be performed at four HPA locales including the San Gabriel River, Pecan Branch, Opossum Creek, and Willis Creek on alluvial stream terraces within 300 meters of the waterway by two technicians using parallel transects 5-10 meters apart. Systematic shovel testing will be performed on both sides of the river and creeks at the rate of 4-6 tests per terrace. Shovel tests in alluvial settings will be dug in 10-20 cm levels and to depths of 1-1.5 meters or to basal clay whichever comes first. All matrix will be dry screened using ¼ inch hardware cloth. Non diagnostic artifacts will be tallied described and discarded. Any diagnostic artifacts found in shovel tests will be collected for analysis and curation.

Five crossing locations are moderate probability areas (MPAs) for the presence of cultural resources and are : a tributary of Pecan Branch (West of SH95), Yankee Branch (CR320), tributary of Willis Creek (CR382), tributary of Willis Creek (Schwertner tract), and a tributary of North Fork of Donahoe Creek (CR303). The remaining blue line crossings are at ephemeral drainages or headwaters where no stream terraces and/or alluvium are present and are considered to be low probability areas (LPAs) for cultural material.

Intensive survey of the MPA steam crossings will be conducted by two technicians using parallel transects 10 meters apart. Shovel testing will be performed, as needed, in areas where surface visibility is less than 40 percent. All matrix will be dry screened using ¼ inch hardware cloth. Non diagnostic artifacts will be tallied described and discarded. Any diagnostic artifacts found in shovel tests will be collected for analysis and curation.

Subsurface Survey

No backhoe trenching is planned at this time, pending the results of the pedestrian survey and shovel testing. If evidence of buried cultural horizons with features, such as stained soils, charcoal, charred objects, and/or fire cracked rock associated with prehistoric artifacts are visible on surface and similar evidence is recovered from shovel testing, back hoe trenching would be recommended to reach strata closer to the depth of impact. If no cultural material is present on the surface and/or cultural material is not recovered from shovel testing in alluvial settings, no back hoe trenching will be recommended. If locations have been previously disturbed and/or contain underground utilities, no backhoe trenching will be recommended.

RESULTS

Findings will be reported in a technical document following the report guidelines of the Council of Texas Archeologists (CTA) and submitted to the THC for review and comment. Appropriate copies of the final report will be distributed as required by permit conditions. Appropriate shape files of areas surveyed and electronic document files will be submitted to THC to complete permit requirements.

REFERENCES

Moore, William

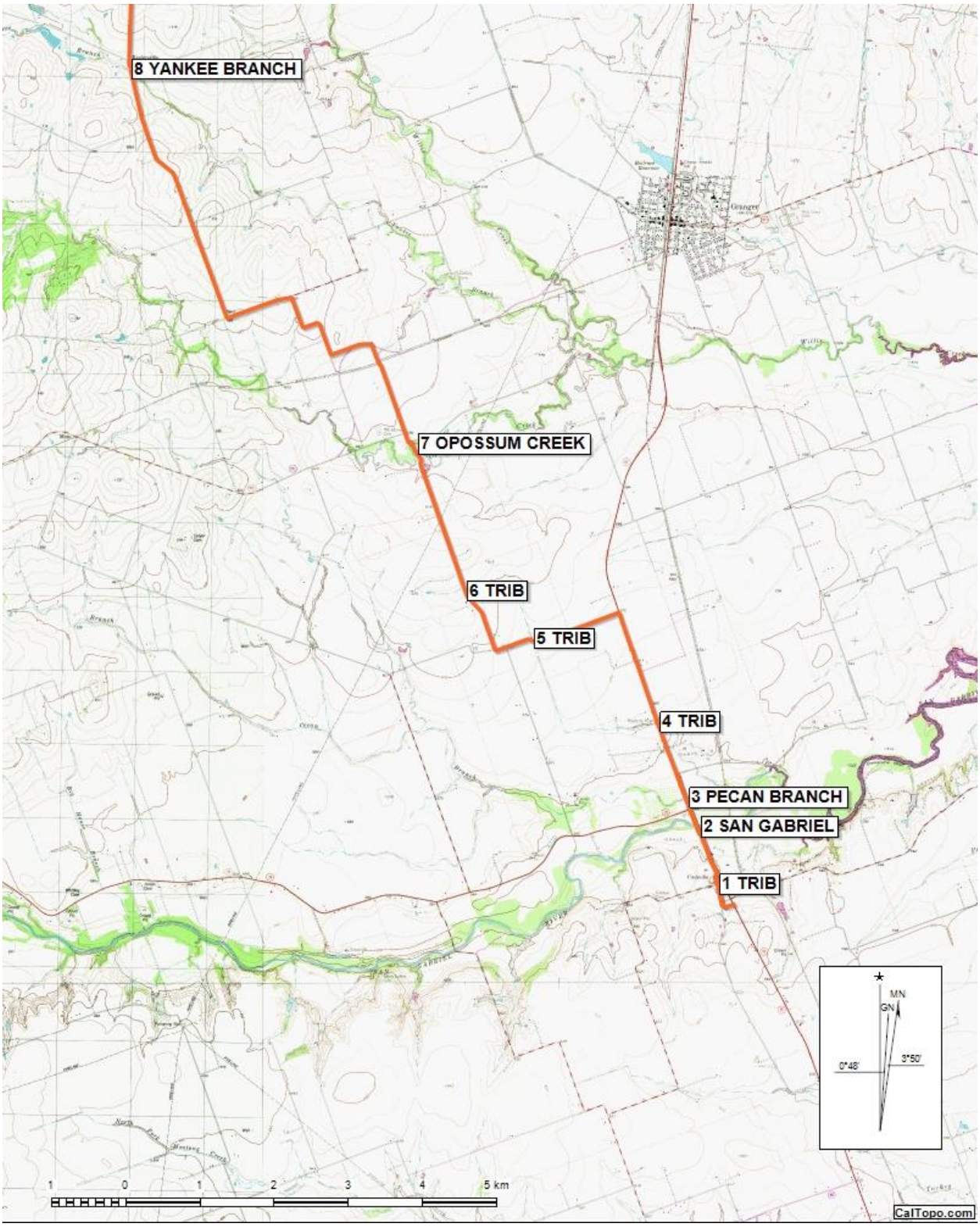
2001 An Archeological Survey of a Proposed Water Transmission Line for the City of Granger, Williamson County Texas. TAC Permit 2652. Brazos Valley Research Associates. Contract Report Number 83. Bryan, Texas.

Nash, Michael et al.

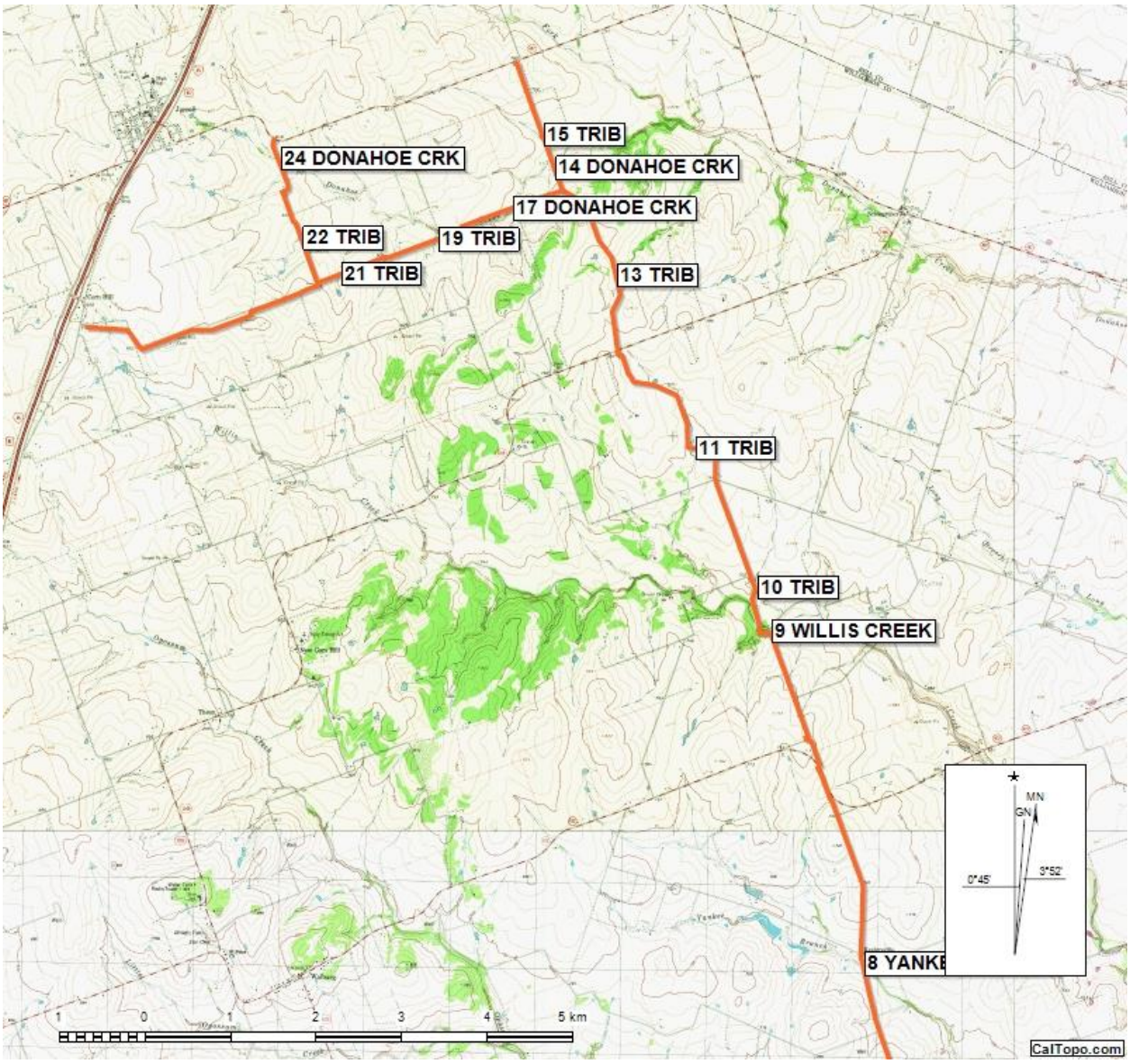
2011 Details for Cultural Resources Survey for the Proposed Oncor Electric Delivery Company Salado to Hutto 345_kV Transmission Line Project and Salado Switching Station Upgrade, Bell and Williamson Counties, Texas. TAC5363. PBS&J Document No. 100093. Austin, Texas.

Owens, Jeffery

2006 Cultural resource survey of the city of Jarrell Wastewater Treatment System, Williamson County, Texas. TAC Permit 3859. Horizon Environmental Services. Austin, Texas.



Map Showing the Southern Segment of the East Williamson County Regional Water Transmission System with River, Stream, and Creek Crossings Numbers 1 to 8 (Map Source Pflugerville West (3097-243), Texas and Jarrell, Texas (3097-341) USGS 1:24,000).



Map Showing the Southern Segment of the East Williamson County Regional Water Transmission System with River, Stream, and Creek Crossings 8 to 24 (Map Source Jarrell, Texas USGS 1:24,000/3097-341).