TEXAS HISTORICAL COMMISSION

ANTIQUITIES PERMIT APPLICATION FORM
ARCHEOLOGY

GENERAL INFORMATION

I. PROPERTY TYPE AND LOCATION

Project Name (and/or Site Trinomial) Intensive Archeological Survey for the Proposed Williamson County Southeast Loop Project, Williamson County, Texas
County (ies) Williamson County
USGS Quadrangle Name and Number Hutto (3097-311), Pflugerville East (3097-244), Taylor (3097-422), and Coupland (3097-133)
UTM Coordinates (approximate) Zone 14 E 645523–636313 N 3381084–3375072
Location South-central Williamson County, between SH 130 Toll and FM 3349, Williamson County, Texas
Federal Involvement ☐ Yes ☒ No
Name of Federal Agency
Agency Representatives

II. OWNER (OR CONTROLLING AGENCY)

Controlling Agency Williamson County
Representative Bill Gravell, Jr., County Judge
Address 710 South Main Street, Suite 101
City/State/Zip Georgetown, Texas, 78626
Telephone (include area code) 512-943-1550 Email Address

III. PROJECT SPONSOR (IF DIFFERENT FROM OWNER)

Sponsor Same as above
Representative
Address
City/State/Zip
Telephone (include area code) Email Address

PROJECT INFORMATION

I. PRINCIPAL INVESTIGATOR (ARCHEOLOGIST)

Name Chris Dayton, PhD, RPA
Affiliation Cox|McLain Environmental Consulting, Inc.
Address 8401 Shoal Creek Blvd., Ste. 100
City/State/Zip Austin, Texas 78757
Telephone (include area code) (512) 338-2223 Email Address chris@coxmclain.com

(OVER)

ANTIQUITIES PERMIT APPLICATION FORM (CONTINUED)

II. PROJECT DESCRIPTION

Proposed Starting Date of Fieldwork January 13, 2020
Requested Permit Duration 5 Years 0 Months (1 year minimum)
Scope of Work (Provided an Outline of Proposed Work) survey with shovel testing and backhoe trenching (see attached)

III. CURATION & REPORT

Temporary Curatorial or Laboratory Facility Cox|McLain Environmental Consulting, Inc.
Permanent Curatorial Facility Center for Archeological Studies (CAS) at Texas State University

IV. OWNER'S CERTIFICATION

I, Bill Gravell, Jr., County Judge, as legal representative of the Owner, Williamson County, do certify that I have reviewed the plans and research design, and that no investigations will be performed prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Owner, Co-owner, and Principal Investigator are responsible for completing the terms of this permit.

Signature _____ Date _____

V. SPONSOR'S CERTIFICATION

I, Same as above, as legal representative of the Sponsor, _____, do certify that I have reviewed the plans and research design, and that no investigations will be performed prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Owner, Sponsor, and Principal Investigator are responsible for completing the terms of the permit.

Signature _____ Date _____

VI. INVESTIGATOR'S CERTIFICATION

I, Chris Dayton, as Principal Investigator employed by Cox|McLain Environmental Consulting, Inc. (Investigative Firm), do certify that I will execute this project according to the submitted plans and research design, and will not conduct any work prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Principal Investigator (and the Investigative Firm), as well as the Owner and Sponsor, are responsible for completing the terms of this permit.

Signature _____ Date 12/6/19

Principal Investigator must attach a research design, a copy of the USGS quadrangle showing project boundaries, and any additional pertinent information. Curriculum vitae must be on file with the Division of Antiquities Protection.

FOR OFFICIAL USE ONLY

Reviewer _____ Date Permit Issues _____
Permit Number _____ Permit Expiration Date _____
Type of Permit _____ Date Received for Data Entry _____

Texas Historical Commission
Archeology Division
P.O. Box 12276, Austin, TX 78711-2276
Phone 512/463-6096
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TEXAS HISTORICAL COMMISSION
The State Agency for Historic Preservation

ARCHEOLOGICAL INTENSIVE SURVEY SCOPE

Williamson County Southeast Loop Project
Williamson County, Texas

Project Description

The purpose of the investigation described in this document is to identify archeological resources within the anticipated construction footprint for the proposed Williamson County Southeast Loop roadway, a new facility located south and east of the City of Hutto in south-central Williamson County, Texas (**Figures 1** and **2**). The corridor begins at State Highway 130 (SH 130, also known as Texas Toll 130 or TX 130) and extends approximately 5.9 miles (9.5 kilometers) to Farm-to-Market Road (FM) 3349.

Within the project limits, the proposed roadway would include four main lanes and six frontage road lanes, with additional lanes for turning at intersections as needed. The proposed right-of-way varies from 240 to 460 feet (73.2 to 140.2 meters) in width. Improvements will also take place where the proposed facility intersects with the following roadways: County Road (CR) 134, CR 137, CR 138, CR 404, FM 1660, and FM 3349. Bridges and/or overpasses will be constructed at several water features, including a reservoir impounded by Soil Conservation Service (SCS, now Natural Resources Conservation Service or NRCS) Dam Number 21, Brushy Creek and its associated floodplains, and Cottonwood Creek and its associated floodplains. Land within and adjacent to the project area is generally used for agriculture, with scattered rural commercial and residential development.

The archeological area of potential effects (APE) has been defined based on the maximal footprint of all proposed alternatives, which together cover approximately 363.36 acres. This project would largely be constructed primarily within new right-of-way (331.30 acres) and includes 14.58 acres of existing roadway right-of-way and 17.48 acres of proposed drainage easement (see **Figure 1**). The typical depth of impacts from this project is unknown at this time, but deep impacts (beyond 1 meter or 3.28 feet) will likely occur at all proposed bridge/overpass locations, potentially extending up to 7 meters (roughly 23 feet) below ground surface.

The project is owned by Williamson County, a political subdivision of the State of Texas, rendering the project subject to the Antiquities Code of Texas. No federal funding or permitting has been identified for the project at this time. If the project later includes federal funding or oversight (e.g., Texas Department of Transportation [TxDOT]/Federal Highway Administration [FHWA] involvement or United States Army Corps of Engineers [USACE] permitting), the project could also need to be compliant with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Background Information

The APE ranges in elevation from 176 to 226 meters (577 to 741 feet) above mean sea level along the 5.9-mile (9.5-kilometer) proposed alignment in south-central Williamson County (see **Figure 1**). The area consists primarily of undeveloped or agricultural lands. The APE crosses four mapped drainages: Brushy Creek, near the center of the APE; Cottonwood Creek, a tributary to Brushy Creek, just north of the center of the APE; and two additional unnamed tributaries to Brushy Creek.

Surface geology of the APE consists of the following, presented from southwest to northeast: Cretaceous-age Austin Chalk, Holocene-age Alluvium and Terrace deposits, Cretaceous-age Navarro and Taylor Groups, and Pleistocene-age High gravel deposits (United States Geological Survey [USGS] 2019a). Austin Chalk consists of interbeds and partings of calcareous clay, thin-bedded marl with interbeds of massive chalk, hard lime mudstone and soft chalk. Terrace deposits and Alluvium contain sand, silt, clay, and gravel in various proportions, with gravel more predominant in older, higher terrace deposits. Clasts are mostly limestone, chert, quartz, and various

igneous and metamorphic rocks from the Llano region and Edwards Plateau. The undivided Navarro and Taylor Groups consist of mostly silty calcareous clay with sandstone beds and concretionary masses, underlain by fine-grained quartz sand with concretions in discontinuous beds and marine megafossils. High gravel deposits are commonly composed of an upper silty clay unit that is good for crop production and a lower coarse unit that yields some water; these deposits often contain caliche-cemented cobbles of chert as large as 12.7 centimeters (5 inches) in size, pebbles of variegated quartzite, limestone, chert, and quartz (USGS 2019b).

According to Natural Resources Conservation Service (NRCS) data, the following soil series are mapped within the APE and are listed alphabetically below (Soil Survey Staff 2019):

- Altoga silty clay loam on 5 to 8 percent slopes, moderately eroded;
- Austin silty clay on 1 to 3 percent slopes;
- Austin-Whitewright complex on 2 to 6 percent slopes, eroded;
- Branyon clay on 0 to 1 and 1 to 3 percent slopes;
- Branyon-Krum complex on 1 to 3 percent slopes;
- Burleson clay on 0 to 1 and 1 to 3 percent slopes;
- Heiden clay on 1 to 3 percent slopes;
- Houston Black clay on 1 to 3 percent slopes;
- Krum silty clay on 1 to 3 percent slopes;
- Krum-Branyon complex on 0 to 1 percent slopes;
- Lewisville-Altoga complex on 2 to 5 percent slopes;
- Oakalla silty clay loam on 0 to 2 percent slopes, occasionally flooded or frequently flooded;
- Sunev loam on 2 to 5 percent slopes;
- Tinn clay on 0 to 1 percent slopes, frequently flooded;
- Water; and
- Whitewright silty clay loam on 1 to 5 percent slopes (Soil Survey Staff 2019).

More than 60 percent of the APE contains soils from one of the following series, each of which cover at least 12 percent of the APE: Austin-Whitewright complex on 2 to 6 percent slopes, Branyon clay on 0 to 1 percent slopes, Branyon clay on 1 to 3 percent slopes, or Burleson clay on 0 to 1 percent slopes. Austin-Whitewright soils are often found on sloping and erosional areas, and feature a combination of the moderately deep, well drained soils of the Austin series and the shallow, carbonate- and gravel-rich soils of the Whitewright series. Branyon and Burleson soils are very deep, moderately well drained, and very slowly permeable soils that formed in calcareous clayey alluvium derived from mudstone of Pleistocene age (Soil Survey Staff 2019).

A review of the Hybrid Potential Archeological Liability Map (HPALM), TxDOT's archeological predictive modeling tool, was conducted to help focus field efforts (see **Figures 3a–3h**). Please note that due to the way datasets were processed and compiled in HPALM, the total project acreage in HPALM does not match the actual footprint of the project (see **Figure 3a**). A digital disconnect along the Travis/Williamson county line (an "empty spot" in the data, so to speak) has resulted in a total HPALM area of 361.05 acres, versus a real-world area of 363.36 acres according to the design files. This minor 2.31-acre delta still allows useful consultation of HPALM data.

The HPALM analysis reveals that approximately 58.7 percent of the APE falls within Map Units 2, 4, 5, 6, 8, and 9 (Abbott and Pletka 2016; **Table 1**). These map units are considered to have at least moderate potential to contain archeological resources, whether shallow or deep. The remaining 41.3 percent of the APE falls within Map Units 0 or 1, which are considered to have a negligible or low potential to contain archeological resources at any depth.

Table 1: HPALM Map Units (Values) by Acreage			
Map Unit	**Description of Potential**	**Acreage**	**Percentage**
0	Negligible Potential at any depth	2.54	0.70%
1	Low Potential at any depth	146.54	40.59%
2	Low Shallow Potential, Moderate Deep Potential	0.10	0.03%
3	Low Shallow Potential, High Deep Potential	0.00	0.00%
4	Moderate Shallow Potential, Low Deep Potential	29.74	8.24%
5	Moderate Potential at any depth	73.63	20.39%
6	Moderate Shallow Potential, High Deep Potential	0.00	0.00%
7	High Shallow Potential, Low Deep Potential	0.00	0.00%
8	High Shallow Potential, Moderate Deep Potential	15.77	4.37%
9	High Potential at any depth	92.73	25.68%
	Total	**361.05***	**100.00%**
actual acreage = 363.36; variation is due to HPALM error shown in **Fig. 3a*			

A search of the Texas Archeological Sites Atlas (Atlas) maintained by the THC and the Texas Archeological Research Laboratory (TARL) was conducted in order to identify archeological sites, Official Texas Historical Markers (OTHMs), properties or districts listed on the National Register of Historic Places (NRHP), State Antiquities Landmarks (SALs), cemeteries, and previous archeological investigations undertaken within 1 kilometer (0.62 miles) of the APE.

According to Atlas survey coverage data (**Figures 2a–2c**; THC 2019), the bulk of the APE has not been previously surveyed. However, several surveys are located adjacent to or intersect with the APE, including:

- a 1976 linear survey along FM 3349 with an incomplete Atlas entry;
- a 2001 linear survey conducted by PBS&J for TxDOT for the TX 130 tollway;
- a 2003 linear survey conducted by Hicks and Company for the TX 130 tollway;
- a 2006 linear/areal survey conducted by HDR for Federal Housing Administration;
- a 2010 survey conducted by SWCA for Williamson County for the CR 138 roadway (overlaps the APE);
- a 2011 linear/areal survey conducted by Horizon Environmental Services for TxDOT (intersects the APE);
- a 2014 linear/areal survey conducted by Amaterra Environmental, Inc. for City of Hutto along the FM 1660 roadway (intersects the APE); and
- a 2015 linear/areal survey conducted by and for TxDOT for the FM 1660 roadway (intersects the APE).

Other surveys mapped within the 1-kilometer study area around the APE include:

- a 1982 areal survey conducted for TxDOT with an incomplete Atlas entry;
- a 1983 areal survey with an incomplete Atlas entry;
- a 2003 areal survey conducted by PBS&J for TxDOT;
- a 2006 areal survey conducted by Prewitt & Associates, Inc. for TxDOT;
- a 2007 areal survey conducted by PBS&J for the U.S. Department of Education;
- a 2009 linear/areal survey conducted by and for Lower Colorado River Authority;
- a 2009 areal survey conducted by Horizon Environmental Services for the City of Hutto's Hutto Lake Park;
- a 2014 areal survey conducted by and for Lower Colorado River Authority; and
- a 2018 areal survey and testing project conducted by Cox|McLain Environmental Consulting, Inc. (CMEC) for the City of Hutto's Pollard Park (THC 2019).

No archeological sites or resources are mapped within the APE; however, archeological site [redacted] is mapped as immediately adjacent to the APE and is highlighted below. In all, 11 archeological sites, 4 cemeteries, and 2 historical markers have been recorded within 1 kilometer of the APE (**Table 2,** see **Figures 2a–2c**).

Table 2: Resources within the 1-Kilometer Buffer Area Surrounding the APE

Resource [redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

Table 2: Resources within the 1-Kilometer Buffer Area Surrounding the APE			
Resource Designation	**Trinomial and/or Name**	**Description / Additional Information**	**Eligibility Determination**
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
Data Source: (THC 2019; Tipton 2019)			

A review of available historic aerial photographs and topographic maps on the Nationwide Environmental Title Research (NETR) website was also undertaken to determine how the corridor has been utilized over time. The earliest topographic maps reviewed (1893–1896) show limited development around the project area, with just a few structures shown near the Williamson-Travis County line at the APE's southwestern terminus. The National and Great Northern Railroad is shown north of the APE in the railroad alignment along US 79, but few of the roadway alignments used today are shown in maps from this time. Topographic maps from 1910 show some additional sparse residential development near the southern portion of the APE, and even sparser residential development around the northern portion of the APE, with an overall density roughly comparable to the current dispersed settlement/development pattern. Topographic map coverage for the area is sparse between 1910 and the 1940s, and no maps showing the APE's condition are available within this timeframe. The next available maps are from 1950 to 1955, and show only a slight increase in residential development, and the US 79 roadway is shown for the first time along the railroad north of the APE. The 1970 map shows most of the roadways near the APE, but the map is at too coarse of a scale to ascertain further details about development within the APE. The

roadway that would become the SH 130 toll road is shown for the first time in 1968. The facility was known as FM 685 until the early 2000s (USGS 2019b).

The earliest available historic aerial imagery (from 1954) shows the APE and surrounding areas as cleared agricultural fields with sparse rural residential development. Additional roadways and terracing are present in imagery from 1964, but the dominant land use continues to be rural residential and agricultural development, a trend that continues through the 1985 and 1995 imagery, when more dense suburban residential development starts to appear in the areas surrounding the APE's southwestern terminus. This expansion of development continues through the 2004, 2008, and 2010 imagery (Google Earth 2019; NETR 2019).

Known and perceived disturbances within the APE include those associated with agricultural processes such as clearing, plowing, and terracing; roadway construction and maintenance, installation of overhead and underground utilities, clear cutting of vegetation, and residential and commercial development practices. These impacts were observed during an initial environmental constraints and land use field visit.

Research Design

CMEC archeological personnel will conduct intensive survey of the previously unsurveyed portions of the APE per Category 6 under 13 TAC 26.15 and using the definitions in 13 TAC 26.5. Field methods and strategies will comply with the requirements of 13 TAC 26.10-26.18 and with guidelines established by the Council of Texas Archeologists (CTA) and approved by the THC.

This archeological survey would include the pedestrian survey of all areas of proposed new right-of-way, including excavation of shovel tests in areas where local conditions (soil, slope, etc.) and roadway, utility, and developmental disturbances allow. The bulk of the APE consists of proposed new right-of-way extending across agricultural and undeveloped lands that are not known to have been surveyed in the past. CMEC will also examine the existing right-of-way and conduct pedestrian survey with judgmental shovel testing in areas of existing right-of-way that appear to have undergone relatively little disturbance (e.g., along the margins of minor county roads).

More than half of the APE (58.7 percent) falls within Map Units 2, 4, 5, 6, 8, and 9, which are considered to have moderate to high potential to contain both shallow archeological sites and deep archeological deposits.

All shovel tests will be excavated in natural levels to subsoil or 60 centimeters (24 inches), whichever is encountered first. Excavated matrix will be screened through 0.635-centimeter (0.25-inch) hardware cloth as allowed by moisture and clay content, which may require that the removed sediment be crumbled/sorted by hand, trowel, and/or shovel point. Deposits will be described using conventional texture classifications and Munsell color designations. Radial shovel tests will be placed at 5-meter (16-foot) intervals around each shovel test containing cultural material until two negative units have been established in each cardinal direction, as allowed by project limits, observed disturbance, and other constraints. Deviations from THC and CTA standards will be explicitly justified.

In addition, CMEC will endeavor to conduct backhoe trenching where HPALM, topography, and soil data indicate potential for intact, deeply-buried deposits, and where deep impacts are anticipated. At this time CMEC expects to perform such trenching (as allowed by access restrictions) within the portions of the APE nearest to Brushy Creek and Cottonwood Creek, as well as the areas mapped within HPALM map units with high potential to contain deeply buried archeological deposits (HPALM map units 3, 6, and 9). The actual placement and extent of trenches may be affected by factors such as property access, vegetation, soil moisture content and other conditions, and safety factors.

CMEC archeologists will also closely inspect the portion of the APE closest to site [redacted] to determine the site's condition and if the site boundary

extends into the APE. If an extension of the site's boundary into the APE is warranted, a site revisit form and revised delineation will be completed.

The project has a low probability of encountering human burials; however, if burials are found, Williamson County and the THC will be notified, and all requirements of 8 Texas Health and Safety Code (THSC) 711 will be followed.

The APE is located on both public land and privately-owned land anticipated for acquisition. Artifacts identified in shovel tests and surface contexts will be noted, described, photographed, and returned to their original contexts, except in the case of extraordinary diagnostic artifacts. At this time, landowner permission is being coordinated by Williamson County's consultant team and access is available to approximately 50 percent of the APE is available (167.32 acres of private land with right-of-entry granted and 14.58 acres of existing right-of-way). If access to a given parcel is not available at the time survey fieldwork is undertaken, a reasonable and good-faith effort will be made to document inaccessible areas from accessible areas for the purposes of the present permit. This permit would then be closed (assuming all work products and submittals meet THC/CTA requirements). If necessary, additional investigations would be undertaken later under a separate scope, fee, and Antiquities Permit to be developed when remaining land is acquired by the County or otherwise becomes accessible.

Any site recorded during the investigation will be identified by a temporary marker placed on the site. The marker will have an identifying number in the form of the initials of the CMEC employee who recorded the site, followed by a consecutively assigned number that will indicate the order in which the sites were discovered (e.g., XX-01, XX-02, etc.). This number is a temporary field number to be superseded by a formal site trinomial obtained following the completion of fieldwork (see below). Site designations will be applied only to features (whether surface or subsurface) that appear to represent occupation or activity areas and/or to clusters of artifacts (whether surface or subsurface) with the minimum threshold of two contiguous positive shovel test units.

CMEC personnel will keep a complete record of field notes with observations including (but not limited to) identified sites, cultural materials, location markers, contextual integrity, estimated time periods of occupations, vegetation, topography, hydrology, land use, soil exposures, general conditions at the time of the survey, and field techniques employed. The field notes will be supplemented by digital photographs.

Reporting and Curation

Relevant field observations for any new sites discovered or previously recorded sites revisited during these investigations will be transferred to TexSite forms and submitted to TARL for official recording and integration into the trinomial system. An analysis of recorded materials and site characteristics will be performed, and the results will be presented in a clear and concise manner. These data will be used to formulate a preliminary evaluation of the NRHP and/or SAL eligibility of each site, as well as a recommendation for further work or no further work, supported by explicit justifications. Data, sites recorded, and NRHP/SAL eligibility assessments will be presented in a standard draft survey report to be submitted to the County and THC for review and comment. Comments on the draft report will be incorporated into a final version to be submitted (with the number and format of copies to be determined based on client preferences) to the County and THC. The final permit closure submittal will include a transmittal letter, abstract form, project area shapefile, tagged PDF files of the report in both restricted (with site locations) and public (without site locations) versions, as applicable.

Upon completion of the fieldwork and reporting, CMEC will make all materials and forms generated by this project available to future researchers through curation at the Center for Archaeological Studies (CAS) at Texas State University in San Marcos, Texas per 13 TAC 26.16 and 26.17. A curation form filed at both CAS and THC will accompany the collections.

References

Abbott, J. T., and S. Pletka

2016 Hybrid Potential Archeological Liability Map for the Texas Department of Transportation Austin District. Available at http://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/toolkit/archeological-map.html. Accessed November 11, 2019.

Google Earth™

2019 Historic Aerial Imagery viewed through Google Earth Pro Viewer. Available at http://www.google.com/earth/index.html. Accessed November 11, 2019.

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2019 *Soil Survey Geographic (SSURGO) Database*. Natural Resources Conservation Service. Available at http://casoilresource.lawr.ucdavis.edu/soilweb/. Accessed November 11, 2019.

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2019 *Texas Archeological Sites Atlas*. Texas Archeological Research Laboratory and the Texas Historical Commission. Available at http://nueces.thc.state.tx.us. Accessed November 11, 2019.

Tipton, J.

2019 *Find a Grave Cemetery Database*. Find A Grave. Available at http:/findagrave.com. Accessed November 11, 2019.

U.S. Geological Survey (USGS)

2019a *Texas Geology Map Viewer*. United States Geological Survey. Available at http://txpub.usgs.gov/dss/texasgeology/. Accessed November 11, 2019.

2019b *Historical Map Viewer*. United States Geological Survey. Available at http://historicalmaps.arcgis.com/usgs/index.html. Accessed November 11, 2019.

List of Figures

Figure 1: Project Location
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Figures 3a–h: HPALM Map