

Archeological Background Study

Project Name: US 75 From Dallas County Line to Bethany Drive

Highway: US Highway 75

District(s): Dallas

County(s): Dallas and Collin Counties

CSJ Number(s): 0047-06-158, 0047-06-163, & 0047-07-232

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Report Completion Date: April 6, 2022

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated 12-09-2019, and executed by FHWA and TxDOT.

Table of Contents

Introduction	3
Area of Potential Effects	3
Information Source Checklist	5
Analysis of Project Setting	5
Conclusions	8
Recommendations	10
References Cited	12
Attachments	13

Introduction

The Texas Department of Transportation (TxDOT) proposes improvements to US 75 to address localized congestion for an approximately 18-mile section of US 75 from Interstate High (IH) 635 to State Highway (SH) 121 and an approximately 3-mile section of Sam Rayburn Tollway through the cities of Dallas, Richardson, Plano, Allen, and Town of Fairview. The project will convert existing Managed High Occupancy Vehicle (HOV) lanes to Technology Lanes. Technology Lanes influence operations, incentivize vehicle occupancy, impact time of day travel decisions, or provide other opportunities to accommodate the dynamic fluctuations in traffic flow and transportation needs. The proposed project will not be situated in a new location and would not substantially alter either the horizontal or the vertical alignment of the roadway.

This project may require compliance both with Section 106 of the National Historic Preservation Act and with the Texas Antiquities Code. The purpose of this document is to identify risks for archeological historic properties within the project's area of potential effects (APE). The document also considers whether any cemeteries may extend into the APE, requiring compliance with the state Health and Safety Code.

The following sections list the results of review of readily-available information for the APE's setting and adjacent areas. The report also evaluates adjacent areas (a buffer zone; see Recommendations Section for definition of the buffer zone). The buffer zone is evaluated in case a subsequent design change expands the APE. This report concludes with separate recommendations regarding project effects and the need for additional work within shallow deposits less than three feet in depth and within Holocene-age deposits of three feet or greater depth, if such deep deposits are present.

This background study is (check one):	★ the initial study for this project
	$\hfill\Box$ a continuation of previous investigations due to design changes or other reasons
	Identify previous investigation(s):
	If this box is checked, then answer the questions below only for the area that is affected by the design change.

Area of Potential Effects

The APE is defined to encompass the limits of the existing right of way (ROW) for approximately 18 miles of US 75 from IH 635 to SH 171, and approximately 2-mile section southwest and 1-mile section northeast of the highway interchange of US 75 and Sam Rayburn Tollway. The width of the existing ROW and APE varies between 46 to 94 feet. Typical depths of impact will be 3 feet. The

proposed project will not be situated in a new location and will not substantially alter either the horizontal or the vertical alignment.

See **Attachment 1** for a map of the APE, which is based on the project information attached as **Attachment 2**.

Information Source Checklist	
×	Labelled USGS 7.5' topographic quadrangle project location map (or equivalent if a 7.5' quadrangle is unavailable) is attached and includes an inset map that depicts the county within Texas where the project occurs. Attachment 1
\boxtimes	Predictive Archeological Liability Map (PALM) is attached if available. Attachment 3
	Geologic Atlas of Texas map is attached.
	Soils map is attached.
\boxtimes	FEMA flood hazard map is attached. Attachment 4
	National Wetlands Inventory map is attached
\boxtimes	Texas Archeological Sites Atlas map is attached, depicting any sites within one kilometer of the APE or additional APE. Attachment 5
	Historic topographic map is attached.
	Historic soils map is attached.
	Historic road map is attached.
	As-built plans for roadway are attached.
	Other map of historic information is attached.
	Specify Map:
	Aerial images are attached.
	Project area photographs are attached.
Analysis of Project Setting	
■ Prev	viously-Identified Archeological Sites
	No archeological sites have been identified within the APE or within 150 feet of the APE

\boxtimes	Archeological sites have been identified within the APE or within 150 feet of the APE
	No archeological sites have been recorded within the APE (Texas Historical Commission [THC] 2022). One previously recorded archeological site 41DL372 is recorded approximately 80 feet (24 meters) east of the APE north of Galatyn Parkway. This historic farmstead consists of burned glass, whiteware, green glass, aqua glass, brick, bottle necks, bottle bottoms, and amethyst glass (THC 2022). A concentration of brick may be the remaining foundations of the site. The site was found ineligible for the National Registry of Historic Places (NRHP) on 2/17/97. See Attachment 5.
■ Prev	viously–Identified Cemeteries
	No known cemetery sites occur within the APE or within 150 feet of the APE.
\boxtimes	Cemeteries occur within the APE or within 150 feet of the APE.
	One cemetery occurs within 150 feet of the APE (THC 2022). Ridgeview Cemetery (COL-C125) is a large actively used cemetery immediately west of the APE in the northern portion of the APE. Ridgeview Cemetery was constructed sometime between 1958 and 1968 after the current alignment of US 75 was already built (Historic Aerials 2022). A review of historic aerial photographs show an early alignment of roads for this cemetery in 1968. The early cemetery is boarding to the east the current alignment of the frontage road for US 75. By 1981, the cemetery has expanded north and reaches its current size and alignment by 2008. See Attachment 5.
• Hold	ocene-Age Deposits
	No Holocene-age deposits occur within or adjacent to the APE.
\boxtimes	Holocene-age deposits occur within or adjacent to the APE.
	The APE is composed of eight soil series: Altoga, Austin, Eddy, Ferris, Frio, Houston Black, Lewisville, and Tinn (NRCS 2022). The Altoga, Frio, and Tinn series are all Holocene-age deposits. The Altoga series formed in calcareous clayey alluvium derived from mudstone. The Tinn series formed in calcareous clayey alluvium. The Frio series formed in calcareous loamy and clayey alluvium (NRCS 2022). These three soil series are recorded around all three of the drainages within the APE, which the PALM scores as a 3 (low shallow potential, high deep potential), 4 (moderate shallow potential, low deep potential), and 6 (moderate shallow potential, high deep potential). See Attachment 3.
• Hist	orically-Reliable Water Sources
	No historically-reliable water sources occur within 500 feet of the APE.

\boxtimes	Historically-reliable water sources occur within 500 feet of the APE, or this question can't be answered confidently.
	From south to north, the APE crosses three drainages: Cottonwood Creek, Rowlett Creek, and another Cottonwood Creek. This northern Cottonwood Creek also crosses the APE along Sam Rayburn Tollway. All three of these creeks are recorded as historically-reliable water sources. See Attachment 4.
• We	tlands and Frequently-Flooded Areas
\boxtimes	The APE and adjacent areas contain wetlands or frequently-flooded areas.
	The APE and adjacent areas do not contain wetlands or frequently-flooded areas, or this question cannot be answered confidently.
	Three channels cross the APE that are prone to flooding and recorded by FEMA within the 100-year floodplain. The largest is associated with Rowlett Creek. See Attachment 4.
■ Pref	erred Landforms for Occupation
	The Atlas map or other information shows that the APE does not contain landforms on which human settlement or occupation typically occurred.
\boxtimes	The Atlas map or other information shows that the APE does contain landforms on which human settlement or occupation typically occurred, or this issue was not resolved with the available information.
	The APE crosses three drainage channels and passes near drainages such as Spring Creek, which runs to the east of the APE south of President George Bush Turnpike. The banks and terraces of these drainages would have been preferred landforms for past human occupation and have the potential to contain shallow and deep deposits of cultural material. A review of nearby sites in the <i>Atlas</i> indicates that the majority of recorded archaeological sites along these drainages are the remains of historic structures like homesteads or historic scatters. Many of these sites are found near tributaries such as Spring Creek (41COL82, 41COL83, 41COL304, and 41DL372), or in the historic centers of the City of Plano (41COL177, 41COL291, and 41COL314). For instance, site 41COL139 is a historic scatter of trash in a dried stock pond near Spring Creek. However, there are some recorded prehistoric sites. For example, site 41COL82 is a scatter of lithic tools and debris located on a bluff overlooking the southern Spring Creek.
• Prio	r Disturbances
	ngs that are favorable for human occupation have been subject to the following previous irbances.

	Previous road construction and maintenance.	
\boxtimes	Installations of utilities.	
\boxtimes	Modern land use practices like plowing, grade modifications, brush clearing, and tree removal,	
	Industrial, commercial, urban and/or suburban development	
	Erosion and scouring by natural causes.	
	Other (identify)	
	NO PRIOR DISTURBANCES OR UNKNOWN	
■ Prev	rious Archeological Surveys	
	The majority of the settings with high potential for archeological sites within or adjacent to the APE have been previously surveyed.	
\boxtimes	The majority of the settings with high potential for archeological sites within or adjacent to the APE have not been previously surveyed.	
	The APE has had six previous archeological investigations all related to previous roadwork along US 75 and Sam Rayburn Tollway (THC 2022). Only three of these projects had any additional details available in the <i>Atlas</i> . The earliest project with details was a 1991 survey by the Federal Highway Administration of the IH 635 and US 76 interchange. The second project with any additional details was a 2005 reconnaissance conducted by GMI under the sponsorship of TxDOT that covered a portion of the southern APE between IH 635 and President George Bush Turnpike. The final project with details was a 2008 survey by Horizon Environmental Services under the sponsorship of the United States Department of Agriculture – Rural Utilities Service. This was conducted under and then along Sam Rayburn Tollway.	
	Due to the lack of information on previous investigations, the majority of the APE with high potential for archeological sites have not been surveyed. However, these areas have been heavily impacted from construction activities such as grading, leveling, berming, installation of utilities, and the construction of various structures. See Attachment 5.	
Conclusions		
Results of Previous Investigations		

	Previous surveys have covered a sufficient proportion of the APE or adjacent areas to conclude that the APE and adjacent areas are unlikely to contain archeological sites or cemeteries.		
\boxtimes	Previous surveys have not covered a sufficient proportion of the APE or adjacent areas to draw inferences regarding the presence of archeological sites and cemeteries, or previous surveys show that archeological sites and/or cemeteries are present within the APE.		
• APE	APE Integrity (Prehistoric Sites)		
	APE contains no deposits with sufficient integrity that prehistoric archeological sites would the potential to address important questions. Any such sites would lack integrity of:		
\boxtimes	Location		
\boxtimes	Design		
\boxtimes	Materials		
\boxtimes	Association		
	Other		
	THE APE HAS THE POTENTIAL TO PRESERVE SITES WITH SUFFICIENT INTEGRITY TO QUALIFY THOSE SITES FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES		
• APE	Integrity (Historic-Age Sites)		
	The APE contains no deposits with sufficient integrity that historic-age archeological sites would have the potential to address important questions. Any such sites would lack integrity of:		
\boxtimes	Location		
\boxtimes	Design		
\boxtimes	Materials		
\boxtimes	Association		
	Other		
	THE APE HAS THE POTENTIAL TO PRESERVE SITES WITH SUFFICIENT INTEGRITY TO QUALIFY THOSE SITES FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES		

■ Results of Historic Map Research (Historic Age Sites)			
	\boxtimes	Historic map research shows that historic-era archeological deposits are not likely to occur within or adjacent to the APE	
		Historic map research shows that historic-era archeological deposits could occur within or adjacent to the APE; this research was inconclusive; or this research was not completed because it was not necessary to reach justifiable conclusions.	
•	Res	ults of Map Research (Cemeteries)	
		Map research shows that cemeteries are not likely to occur within or adjacent to the APE.	
	\boxtimes	Map research shows that cemeteries could occur within or adjacent to the APE, or this research was inconclusive.	
•	Results of Landform Study		
		The APE and adjacent areas occur in a setting that was not conducive to human occupation and activity	
	\boxtimes	The APE and adjacent areas occur in a setting that was conducive to human occupation and activity; research on this issue was inconclusive; or this research was not completed because it was not necessary to reach justifiable conclusions.	
Recommendations			
•	Sha	llow Deposits	
		The PALM scores much of the APE as a 1 (low shallow potential). Areas around the drainages have some potential for shallow deposits as they are scored as a 3 (low shallow potential, high deep potential), 4 (moderate shallow potential, low deep potential), and 6 (moderate shallow potential, high deep potential) (see Attachment 3). However, the roadway associated with US 75 has existed in more or less in its current alignment since the early twentieth century with additional construction in the 1950s when it was added to the Interstate Highway System. As such, the area has been subject to numerous construction projects that would have altered the landscape and removed or destroyed any shallow deposits. Any shallow deposits of cultural material under the roadway would not be intact. In the end, the project will not be on a new location and will not substantially alter either the horizontal or the vertical alignment. As such, RKI recommends no additional work to assess the APE for shallow deposits of cultural resources.	
•	Dee	p Deposits	

The PALM scores potions of the APE around drainages as having potential for deep impacts. These areas around drainages are scored as a 3 (low shallow potential, high deep potential), 4 (moderate shallow potential, low deep potential), and 6 (moderate shallow potential, high deep potential) (see attachment 3). In addition, Ridgeview Cemetery is located immediately west of the APE. This cemetery was constructed after US 75 was built in its current alignment. Regardless of these potential deposits, the project is not planned to impact any floodplains and will not substantially alter either the horizontal or the vertical alignment. Furthermore, the area has already been disturbed by existing roadway constructions such as the installation of piers for bridges, signs, and lighting. RKI recommends no additional work to assess the APE for deep deposits of cultural resource. Recommendations Summary (select only one check box) □ No further study needed ☐ Survey of entire APE ☐ Variable, see attached figure Results Valid Within □ 50 feet of APE ☐ 0 feet of APE ☐ Variable, see attached figure • The Definition and Evaluation of this Horizontal Buffer Zone is Based on One or More of the Following Considerations \boxtimes The integrity of the areas within and adjacent to the setting is affected by prior development. Previous investigations show that archeological materials are unlikely to exist in this area. Adjacent areas have potential to preserve archeological sites with good integrity. Other (specify) Findings of no effect to archeological historic properties and/or State Antiquities Landmarks and recommendations for no further work apply to all areas within the horizontal buffer zone, as specified in the previous section. Any design change within this study area would not require further action or review beyond those actions recommended in this study. Design changes that either extend beyond the buffer zone or result in potential impacts deeper than the impacts considered in this report would require additional review. Note that no buffer zone may be defined for some projects, based on local conditions.

References Cited

Historic Aerials

2022 Historic aerials viewer. Electronic document available at https://www.historicaerials.com/, accessed April 6, 2022.

Natural Resources Conservation Service (NRCS)

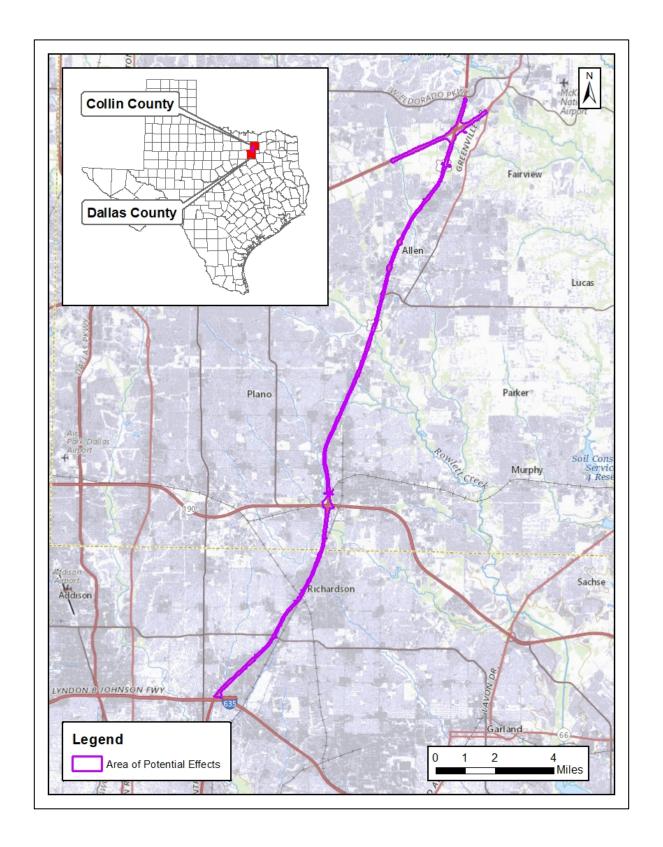
2022 Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/. Accessed April 6, 2022.

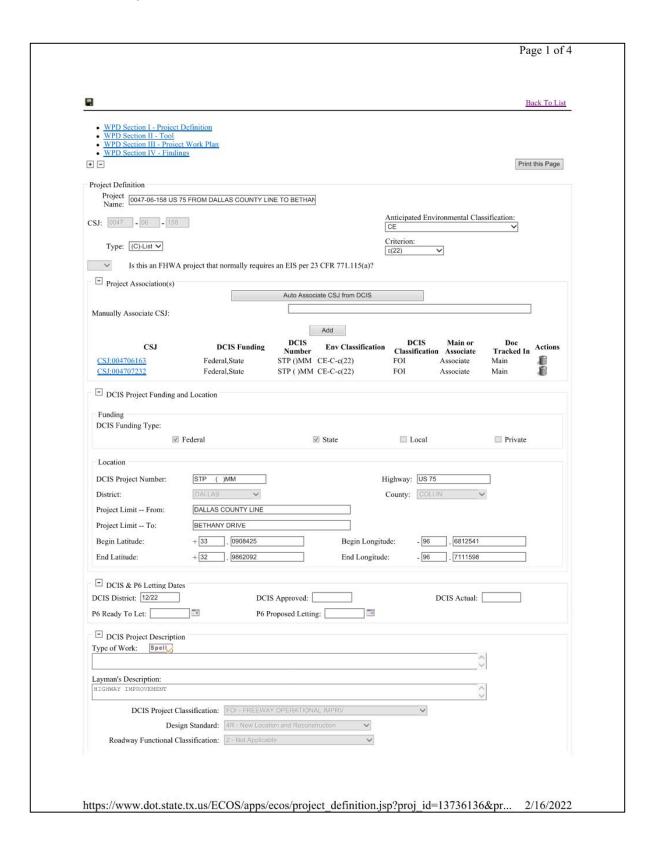
Texas Historical Commission (THC)

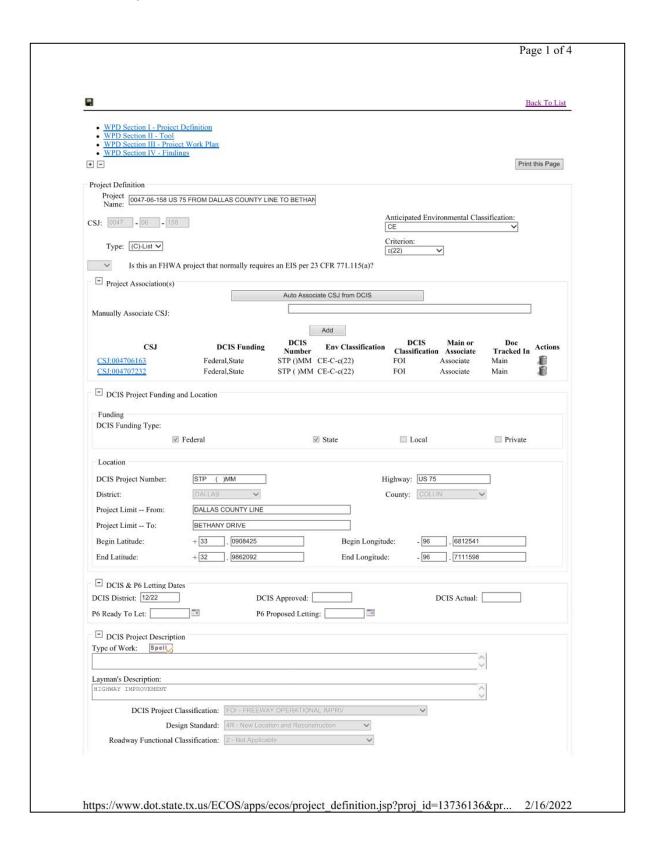
2022 Texas Archeological Sites Atlas. Texas Historical Commission. Available at, https://atlas.thc.state.tx.us/. Accessed April 6, 2022.

Attachments

Attachment 1-Map showing horizontal extent of APE, including existing ROW and proposed ROW/new easements







Page 3 of 4 US 75 North Central Expressway is a main north-south route from the Dallas central business district (CBD) to the North Dallas area. The southern end of this corridor is depressed. The corridor is surrounded by multi-storied commercial, retail, low to high density residential, and a The proposed project area is located within the city limits of Dallas, Richardson, Plano, Fairview, and Allen. Land use types surrounding the proposed ROW consists of commercial, education, farmland, hotel/motel, industrial, institutional/semi-public, mixed use, multi-family residential, office, parking, parks/recreation, railroad, ranch land, retail, single family residential, transit, and utilities. The project is not anticipated to change land usage as it currently exists. Park and recreation areas within the general vicinity of the project area (identified and described by location to the project area include:

Central H&B Trail - E. ROW Sta. 270+00 to 279+50, CSJ 0047-07-232

Proposed Central H&B Trail at Galatyn Parkway Extension - Sta. 306+00, CSJ 0047-07-232

Prairie Creek Greenbelt and Renner H&B Trail - Sta. 162+50 to 184+00, CSJ 0047-06-158

Spring Creek Greenbelt and Spring Creek H&B Trail - Sta. 185+00, CSJ 0047-06-158

Bluebonnet H&B Trail - Sta. 465+00 to 466+00, CSJ 0047-06-158

The Courses at Waters Creek - W. ROW Sta. 465+00 to 477+00, CSJ 0047-06-158

Muncey Massacre Site - W. ROW Sta. 540+00, CSJ 0047-06-158

Rolling Hills Park - E. ROW Sta. 625+00, CSJ 0047-06-158

Cottonwood Creek Greenbelt and Cottonwood Creek Trail - Sta. 654+00, CSJ 0047-06-158

Stacy Road H&B Trail - Sta. 690+00, CSJ 0047-06-158

Waterways identified within the general vicinity of the project area include:

Cottonwood Creek

Duck Creek

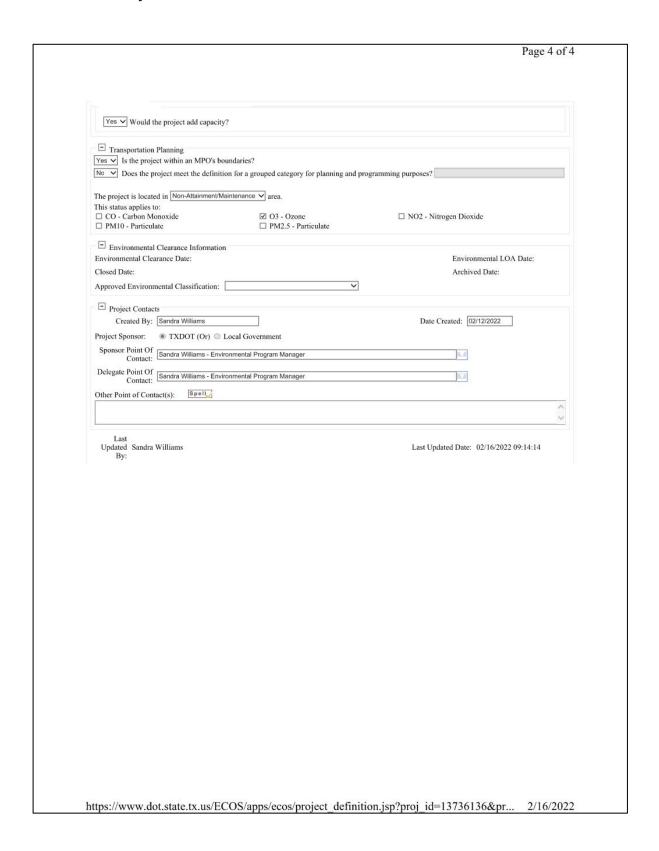
Spring Creek Spring Creek Brown Branch Pittman Creek Rowlett Creek No archeological or historical sites have been identified within the APE or within 150 feet of the area of potential effects (APE). No known cemetery sites occur within the APE or within 150 feet of the APE. Substantial traffic generators such as IH 635, the President George Bush Turnpike (PGBT), and Sar Rayburn Tollway (SRT)/TX 121, and major cross streets to include Bethany Drive, Galatyn Parkway, Park Boulevard, Legacy Drive, Plano Parkway, Midpark Road and Sprind Valley Road, Campbell Road. The existing US 75 corridor from IH 635 to Sam Rayburn Tollway (SRT) is an 8- lane (4 lanes in each direction) concrete paved controlled-access urban freeway with fully directional interchange at the IH 655, President George Bush Turnpike (FGBT), and Sam Rayburn Tollway (SRT). The ramping configuration varies throughout the corridor; however, it mostly follows an x-ramp layout with auxiliary lanes. Due to the urban nature of the corridor, there are multiple walls and center concrete barrier throughout the project limits. Between IH-635 and just south of Bethany Drive there are 4 general purpose lanes and one HOV lane in each direction. There are three ingress/egress locations for HOV within this segment. These occur at the southern HOV limits near IH-635 (access from 635-Managed Lanes), the northern HOV limit just south of Bethany Drive, and within the system between Galatyn Pakway and Park Boulevard. At the ingress/egress locations, the HOV lanes are separated with broken white stripes with continuous access to the GP lanes. This segment usually consists of 11-foot (GP) lanes, 12-foot HOV lanes, variable width outside shoulders (10-foot to 11-foot, and a variable width inside shoulders (6-foot to 20.25-foot). The HOV Lane other than ingress/egress location is separated by pylons. These locations utilize 11-foot GP lanes, 12 ft HOV lanes, 10 ft outside shoulders, variable width inside-shoulders (2 to 3 ft) and 3 ft buffer (with fixed pylons) between existing HOV and GP lanes. Existing ROW varies between 144-foot to 172.5-foot. The existing US 75 corridor SRT and just south of Bethany Drive is a controlled-access highway Describe Proposed Facility: Spell The existing HOV facility is proposed to be converted to Peak Hour (Technology) lane with continuous access provided to GP lanes with broken white stripes between IH-635 and SRT with technology gantries at various locations along the corridor.

The proposed section along US 75 between (SRT and south of Bethany Drive) includes 11 ft GP lanes, 11 ft peak hour (technology) lane, varying 7 to 11 ft outside shoulder and 3 -5 ft inside shoulder each direction.

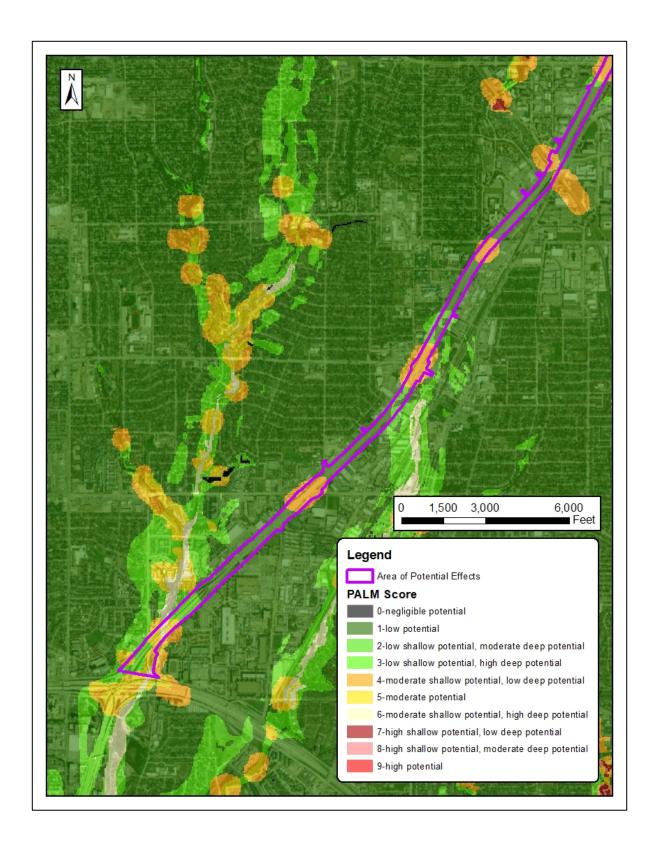
The proposed section from south of Bethany Drive towards - IH-635 includes 11 ft GP lanes, 12 ft peak hour (technology) lanes, 10 -11 ft outside shoulder and 5 ft inside shoulder with concrete barrier.

No ROW is being acquired for the proposed facility design for the HOV to Peak Hour (technology) lane conversion project. The US 75 facility would remain within a variable typical pavement width of approximately 46 to 94 feet. The proposed project would be constructed within existing operational ROW along both sides of US 75 and no additional ROW or easement would be required.

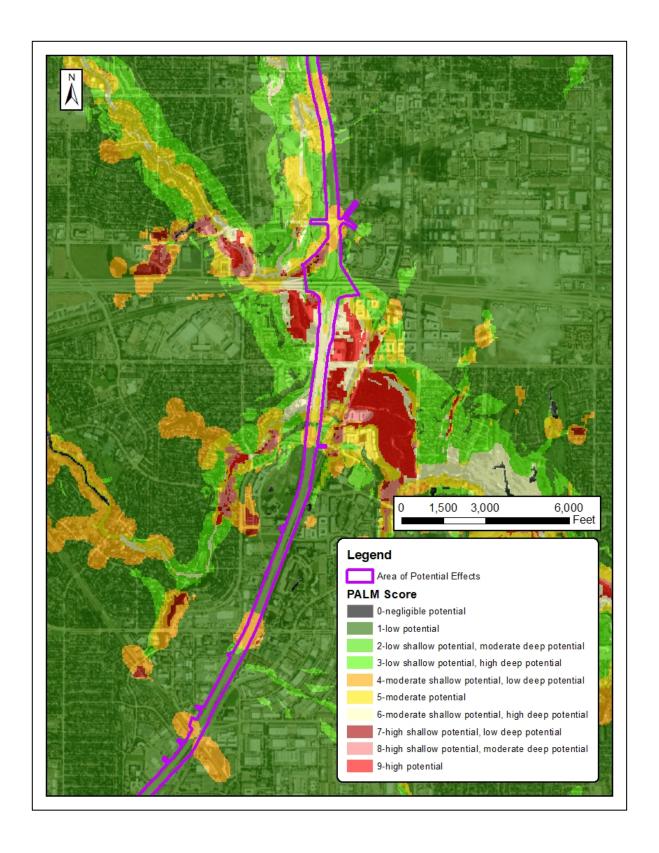
https://www.dot.state.tx.us/ECOS/apps/ecos/project_definition.jsp?proj_id=13736136&pr... 2/16/2022



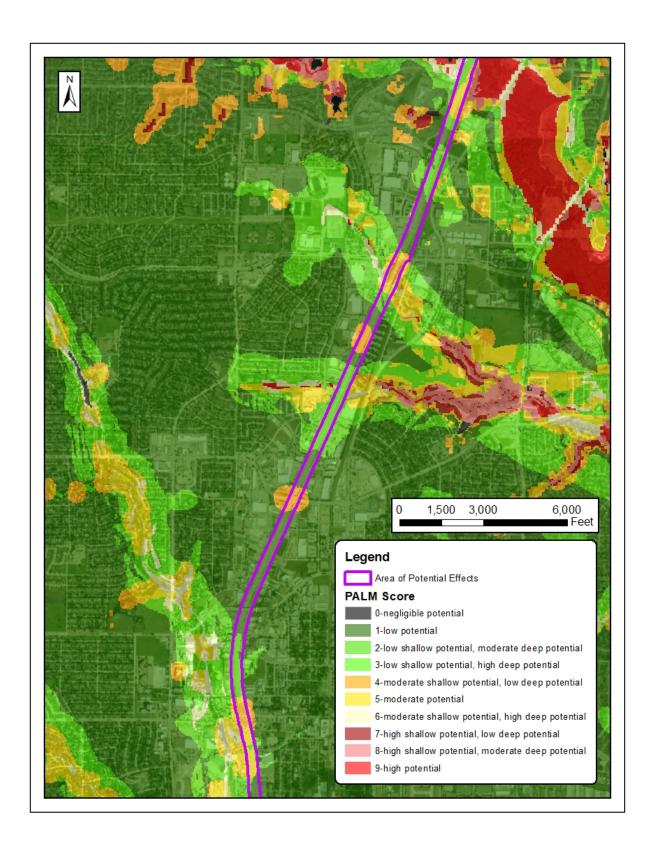
Attachment 3a - PALM



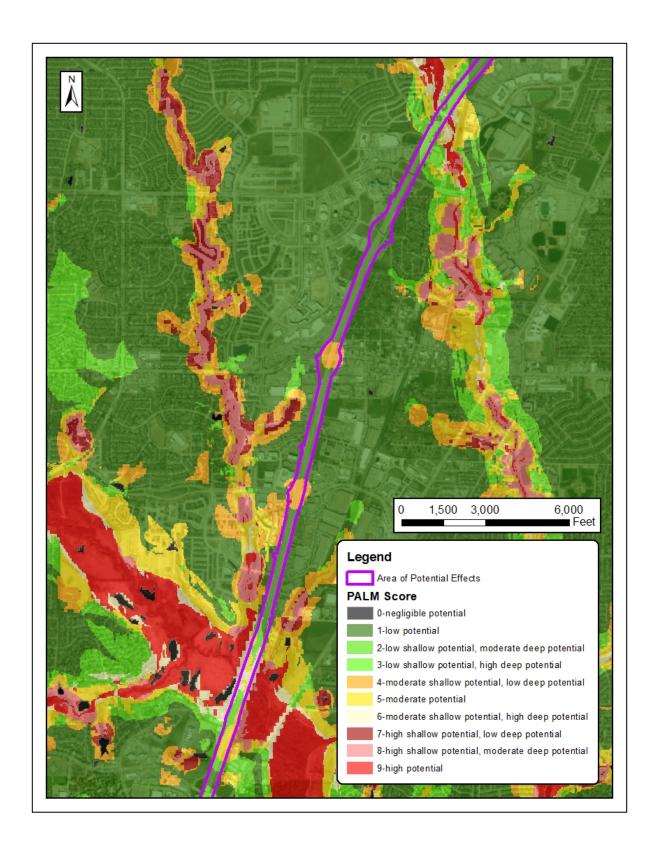
Attachment 3b - PALM



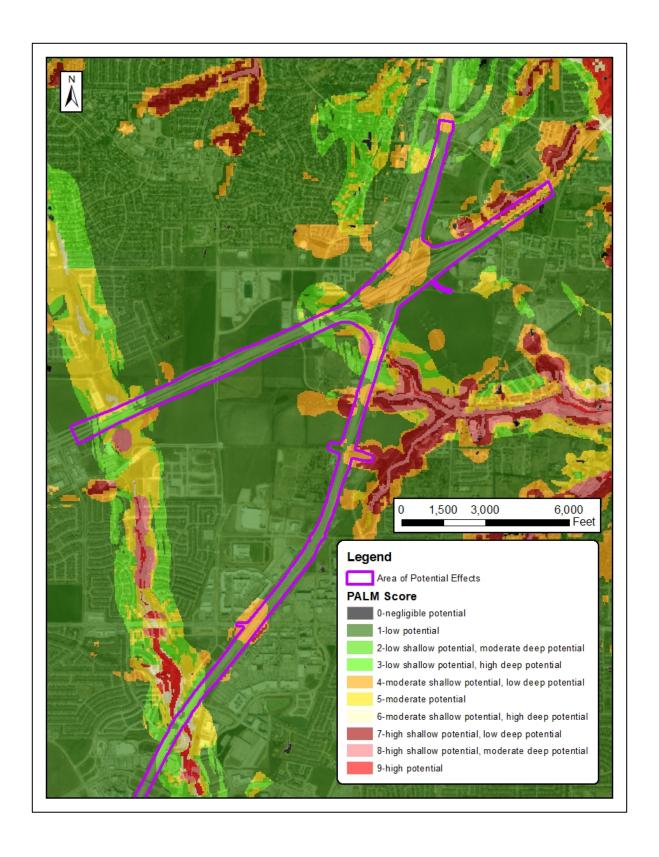
Attachment 3c - PALM



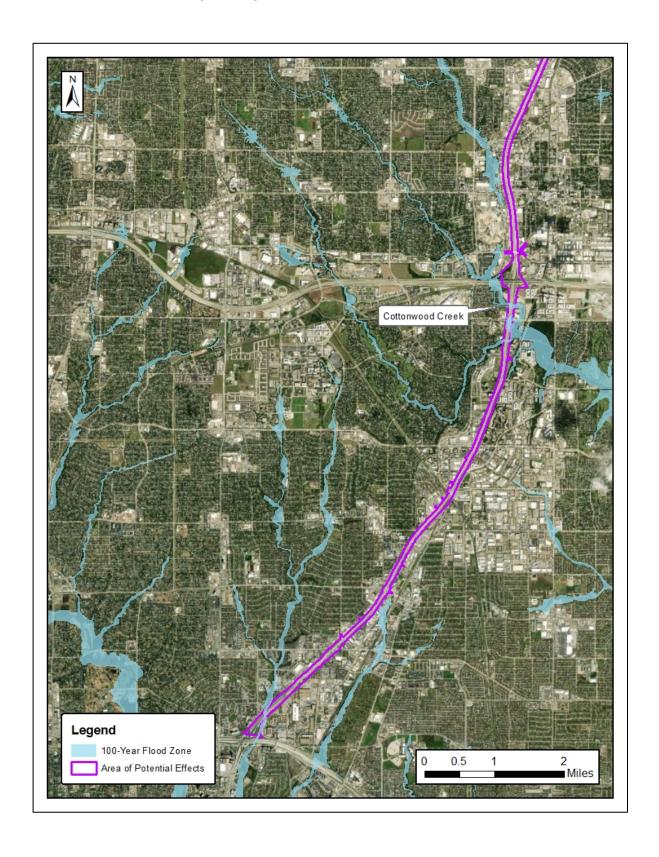
Attachment 3d - PALM



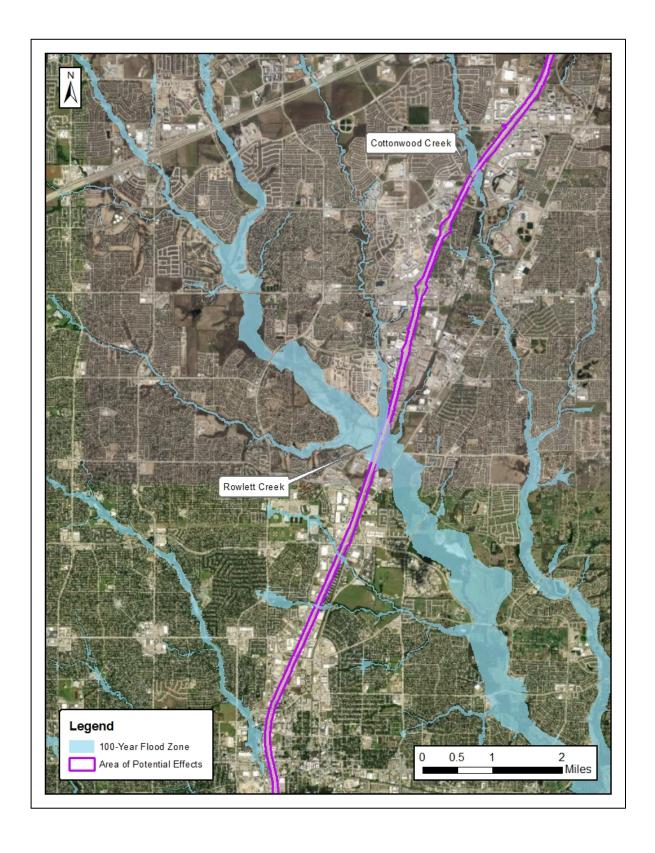
Attachment 3e - PALM



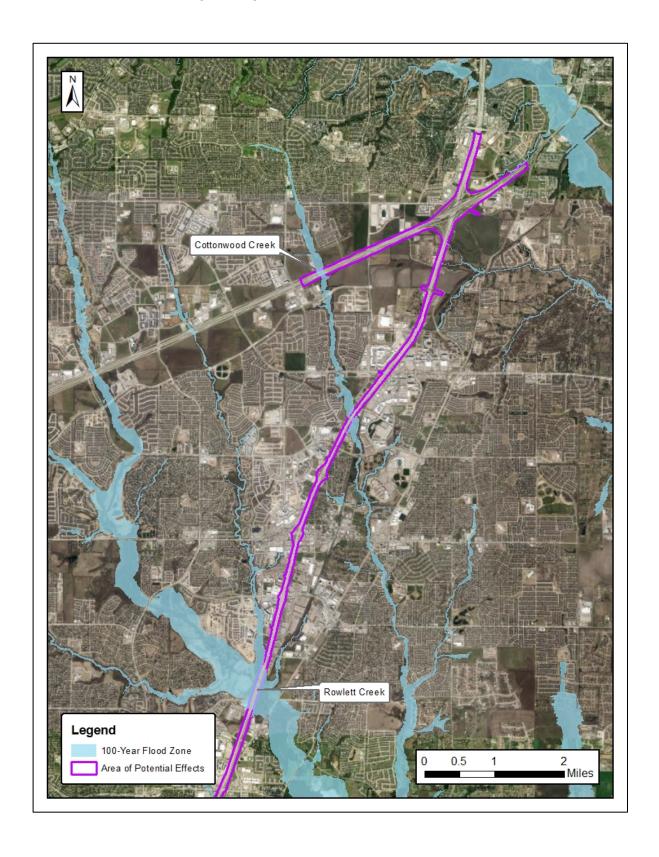
Attachment 4a – FEMA Floodplain Map



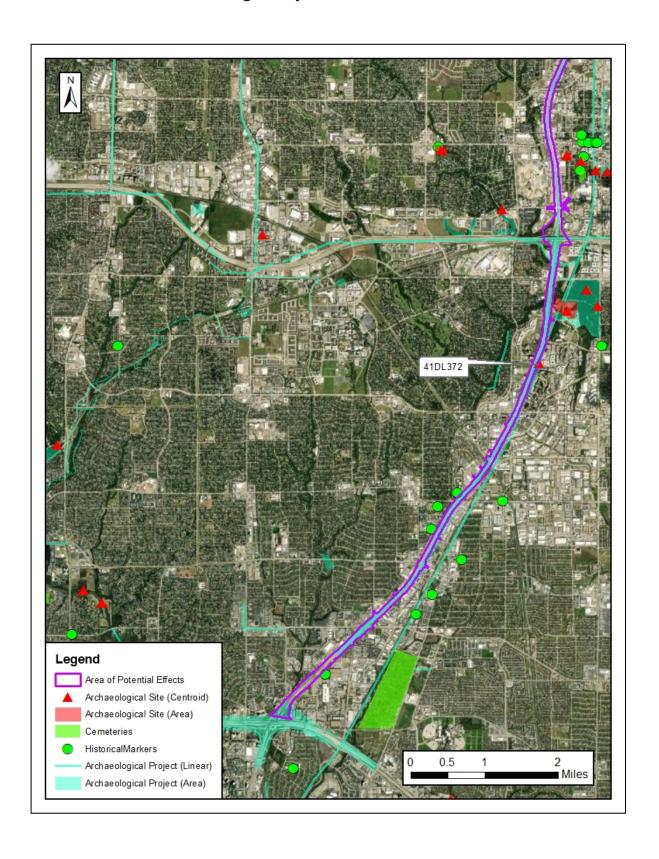
Attachment 4b – FEMA Floodplain Map



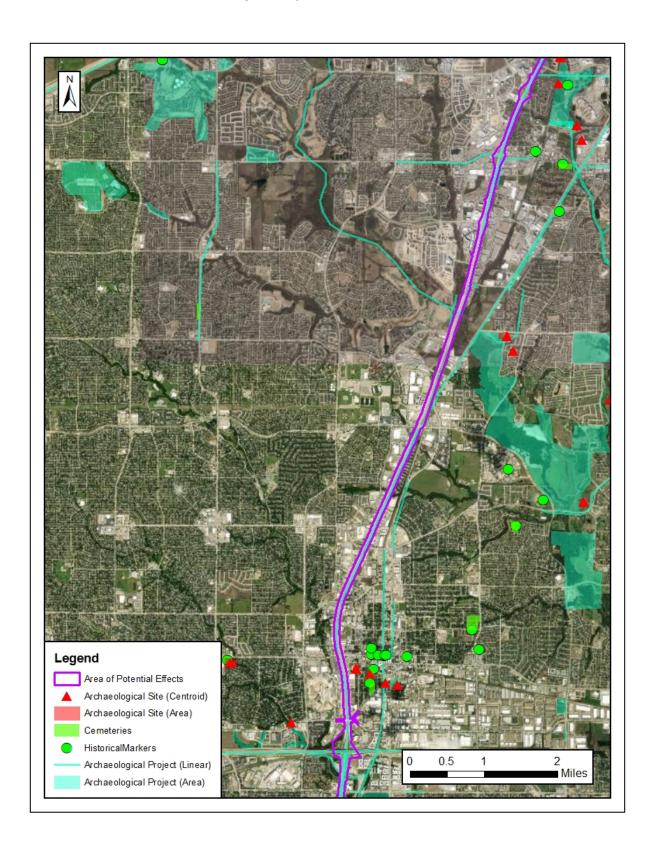
Attachment 4c – FEMA Floodplain Map



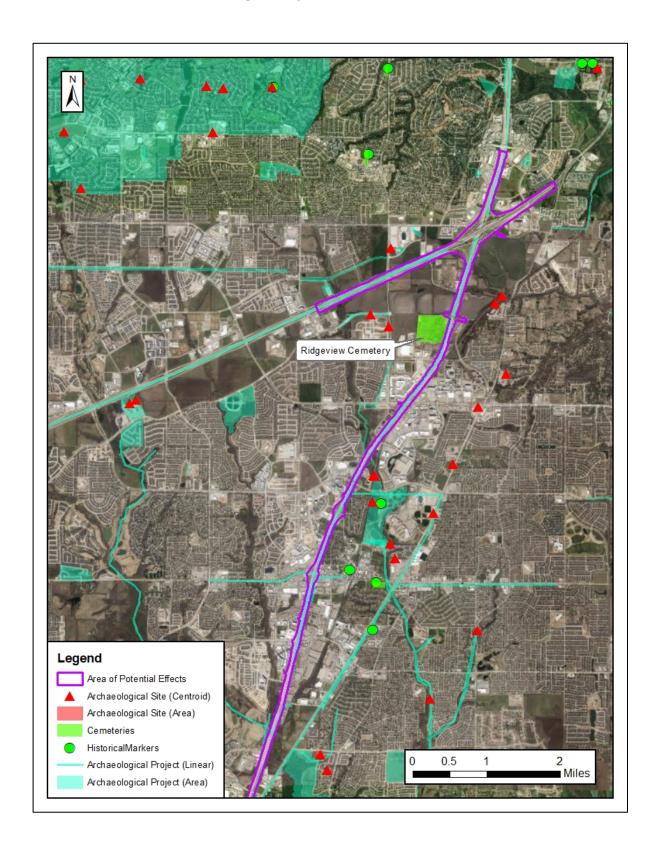
Attachment 5a - Previous Archaeological Projects



Attachment 5b - Previous Archaeological Projects



Attachment 5c - Previous Archaeological Projects



This report was written on behalf of the Texas Department of Transportation by:



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