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Cultural Resources Survey for the MGR Bikeway (Duck Creek Trail Connections) Project, City of Garland, Dallas County, Texas

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CULTURAL RESOURCES REPORT

CULTURAL RESOURCES SURVEY FOR THE MGR BIKEWAY (DUCK CREEK TRAIL CONNECTIONS) PROJECT, CITY OF GARLAND, DALLAS COUNTY, TEXAS

Prepared for:
Texas Historical Commission
Texas Antiquities Permit #8721

On Behalf of:
The City of Garland
&
BW2 Engineers, Inc.

March 2019

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CULTURAL RESOURCES SURVEY FOR THE MGR BIKEWAY (DUCK CREEK TRAIL CONNECTIONS) PROJECT, CITY OF GARLAND, DALLAS COUNTY, TEXAS

by

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Cultural Resources Report
March 2019

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ABSTRACT

This report documents the substantive findings and management recommendations of a cultural resources survey conducted by Integrated Environmental Solutions, LLC (IES) for the proposed MGR Bikeway (Duck Creek Trail Connections) project in the City of Garland, Dallas County, Texas. The proposed project pertains to the construction of new trail segments to connect existing trails along Duck Creek. As the project will require compliance with a Section 404 of the Clean Water Act Nationwide Permit from the U.S. Army Corps of Engineers (USACE), portions of the project will be subjected to the provisions of the National Historic Preservation Act (NHPA) of 1966, as amended. Additionally, as the City of Garland is a political subdivision of the State of Texas, the project is subject to the provisions of the Antiquities Code of Texas (ACT).

The goal of this survey was to locate cultural resources that could be adversely affected by the proposed project, and to provide an evaluation of the eligibility potential of each identified resource for listing in the National Register of Historic Places (NRHP) or for designation as a State Antiquities Landmark (SAL). This cultural resources survey was conducted by Principal Investigator Christopher Goodmaster, Project Archeologist Thomas Chapman, and Field Technician Josh McCormick on 28 and 31 January 2019. All work conformed to 13 Texas Administrative Code 26, which outlines the regulations for implementing the ACT, and was conducted under Antiquities Permit No. 8721.

No artifacts were collected as part of this survey. All project-related records and field data will be temporarily stored at the IES McKinney office and permanently curated at the Center for Archeological Research (CAR) at The University of Texas at San Antonio. No further cultural resources investigation or evaluation of the APE is recommended. However, if any cultural resources are encountered during construction, the operators should stop construction activities in the vicinity of the inadvertent discovery, and immediately contact the project cultural resources consultant to initiate coordination with the USACE and Texas Historical Commission (THC) prior to resuming construction activities.

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CHAPTER 1: INTRODUCTION

This report presents the results of a cultural resources survey conducted by Integrated Environmental Solutions, LLC (IES), under contract to BW2 Engineers, Inc., on behalf of the City of Garland. The purpose of these investigations was to conduct an inventory of cultural resources (as defined by Code of Federal Regulations, Title 36, Section 800.4 [36 CFR 800.4]) present within the proposed project area or Area of Potential Effects (APE) and to evaluate identified resources for their eligibility for inclusion in the National Register of Historic Places (NRHP), as per Section 106 (36 CFR 800) of the National Historic Preservation Act (NHPA) of 1966, as amended, or for designation as State Antiquities Landmarks (SAL) under the Antiquities Code of Texas (ACT; Texas Natural Resources Code, Title 9, Chapter 191 [9 TNRC 191]) and associated state regulations (Texas Administrative Code, Title 13, Chapter 26 [13 TAC 26]).

The goal of this survey was to locate, identify, and assess archeological sites, buildings, structures, or other cultural resources within the APE that may be eligible for inclusion in the NRHP or designation as SALs. This investigation was conducted in accordance with 36 CFR 60.4 and 13 TAC 26, which outline the regulations for implementing Section 106 of the NHPA and the ACT, respectively. Prepared in accordance with the Council of Texas Archeologists (CTA 2002) guidelines, this report satisfies the NHPA Section 106 and the ACT requirements of the proposed project. A description of the proposed project area, pertinent regulations, environmental and historical contexts, field and analytical methods, results of the investigations, and recommendations regarding the identified cultural resources are provided in this document.

1.1 Regulatory Framework

1.1.1 *Antiquities Code of Texas*

As the City of Garland is a political subdivision of the State of Texas, it is required to comply with the ACT. The ACT was passed in 1969 and requires that Texas Historical Commission (THC) staff review actions that have the potential to disturb historic and archeological sites on public land. Actions that require review under the ACT include any project that includes ground-disturbing activities on land owned or controlled by a political subdivision of the State and include easements on private property. This survey was conducted under Antiquities Permit No. 8721.

1.1.2 *Section 106 of the National Historic Preservation Act*

The proposed project will require a Section 404 of the Clean Water Act (CWA) Permit from the U.S. Army Corps of Engineers (USACE). Therefore, portions of the project will be subject to the provisions of the NHPA of 1966, as amended. The NHPA (54 U.S. Code [U.S.C.] 300101 *et seq*.), specifically Section 106 of the NHPA (54 U.S.C. 306108) requires the State Historic Preservation Officer (SHPO), an official appointed in each State or territory, to administer and coordinate historic preservation activities, and to review and comment on all actions licensed by the federal government that will have an effect on properties listed in the NRHP, or eligible for such listing. Per 36 CFR 800, the federal agency responsible for overseeing the action must make a reasonable and good faith effort to identify cultural resources.

1.2 Area of Potential Effects

1.2.1 *Direct APE*

The APE encompasses approximately 2.45 acres (ac) and consists of two segments, which are herein referred to as the Northern APE and Southern APE (**Figures 1.1** and **1.2**). The Northern APE is located approximately 0.05 mile (mi) southwest of the intersection of Centerville Road and Duck Creek Drive/1st Street. The Southern APE is located approximately 2.57 mi southeast of the Northern APE and is 0.40 mi

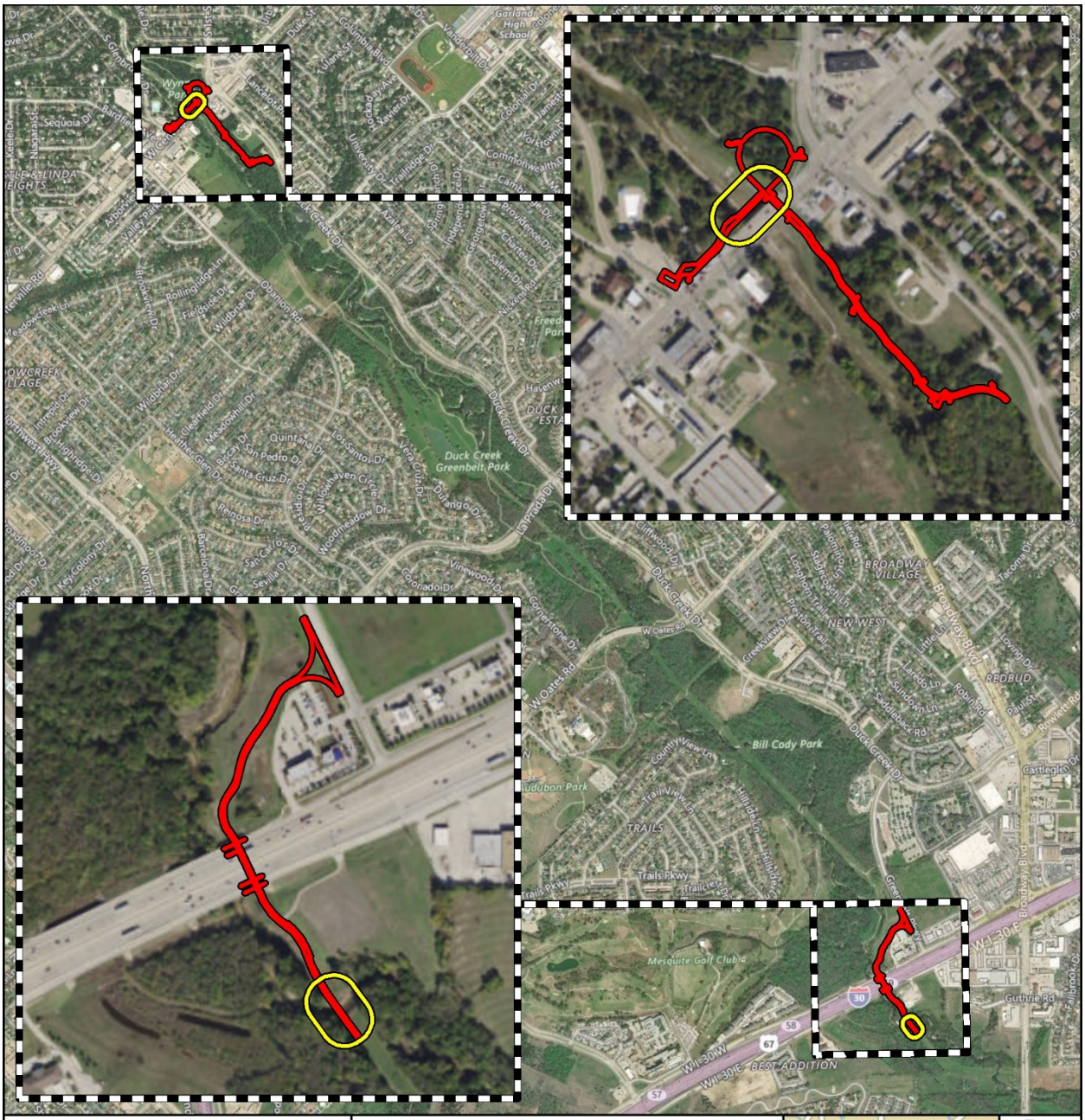

Figure 1.1
General Location Map

County: Dallas
State: Texas
Date map created: 2/4/2019
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.6 Streetmap
IES Project Ref: 04.188.004

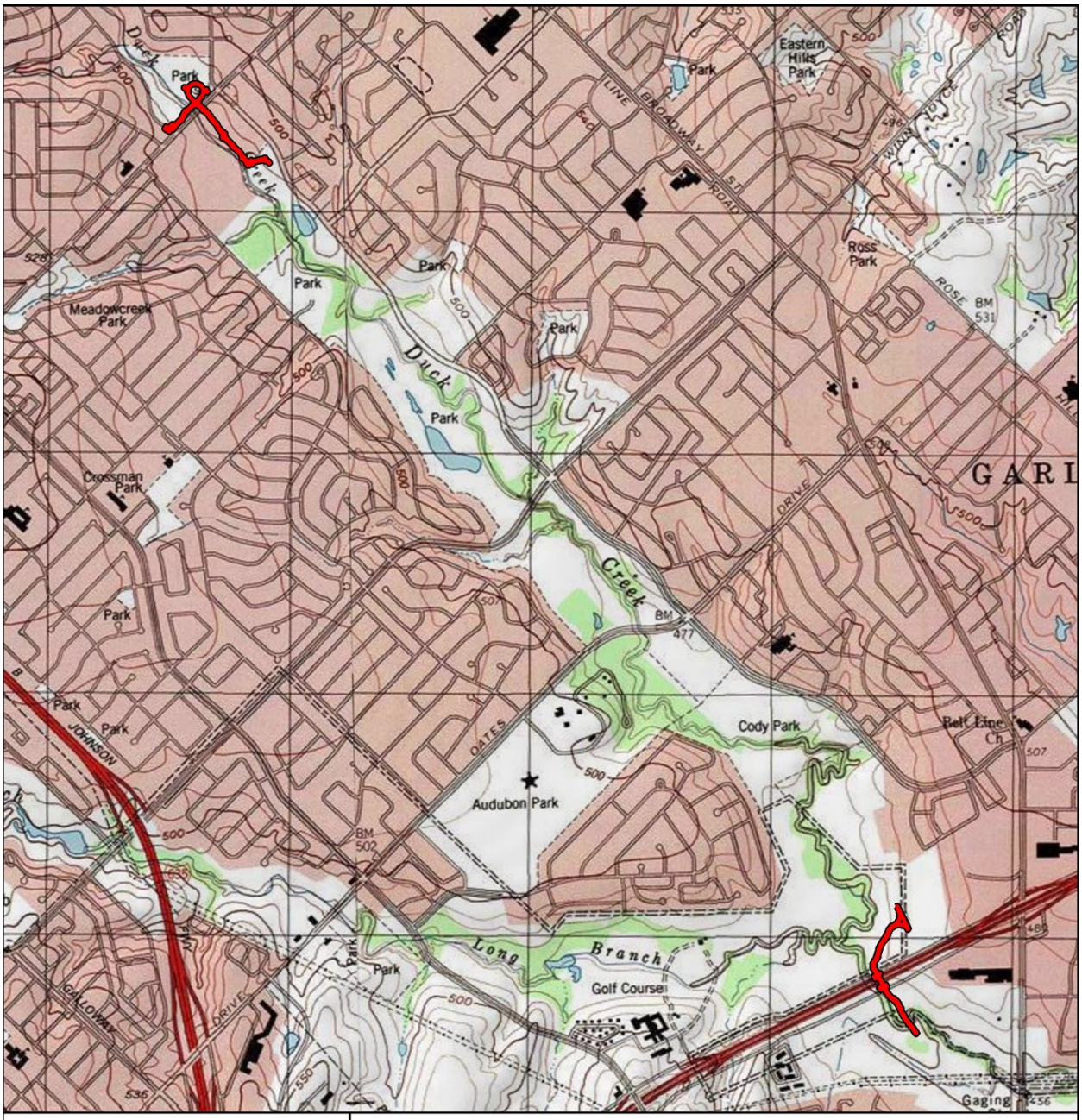

Figure 1.2
Topographic Setting

County: Dallas
State: Texas
Date map created: 2/4/2019
Source: USGS Topographic Map
7.5' Quadrangle: Mesquite 1974
White Rock Lake 1975
IES Project Ref: 04.188.004

southwest of the intersection of Interstate Highway (IH) 30 and North Belt Line Road/Broadway Boulevard.

The proposed project entails the construction of two pedestrian trail sections, which will connect existing trails along Duck Creek. The project will consist of tree removal, grading, and the installation of pavement, drainage outfalls, retaining walls along the trail near Centerville Road bridge, and a retaining wall north of Duck Creek in the Southern APE. The proposed trails will cross Duck Creek in both the Northern and Southern APE. The northern crossing will include the installation of reinforced concrete rip-rap and a 210-foot (ft) steel truss pedestrian bridge anchored by piers. The southern creek crossing will include rock rip-rap reinforcement walls and a 100-ft steel truss pedestrian bridge anchored by piers. The maximum depth of impacts from the installation of bridge piers will extend to approximately 24 ft below the ground surface.

1.2.2 *Indirect APE*

As the project will require federal permitting from the USACE, an assessment of the indirect effects will be required within USACE jurisdiction to satisfy Section 106 of the NHPA requirements. It is anticipated that the sole potential indirect effect of the undertaking would be related to visual effects associated with the construction of the two pedestrian bridges to historic-age (i.e., greater than 50 years old) structures in the vicinity. To account for these proposed above-ground elements, a 100-ft-wide indirect APE was assessed surrounding the USACE jurisdictional impact areas associated with bridge construction.

1.3 Administrative Information

Sponsor: City of Garland

Review Agency: THC; USACE

Principal Investigator: Christopher Goodmaster, MA, RPA

IES Project Number: 04.188.004

Days of Field Work: 28 and 31 January 2019

Area Surveyed: 2.45 ac

Resources Recommended Eligible for NRHP Under 36 CFR 60.4: None

Resources Recommended Not Eligible for NRHP Under 36 CFR 60.4: None

Resources Recommended Eligible for SAL Under 13 TAC 26: None

Resources Recommended Not Eligible for SAL Under 13 TAC 26: None

Curation Facility: No artifacts were collected. Field notes and project records will be temporarily stored at the IES office in McKinney and permanently curated at the Center for Archeological Research (CAR) at The University of Texas at San Antonio.

CHAPTER 2: ENVIRONMENTAL BACKGROUND

2.1 Environmental Setting

2.1.1 *Climate*

Dallas County lies in the north-central part of the State of Texas. Annual precipitation averages between approximately 35 to 42 inches (in). About half of the precipitation usually falls as rain between April and May, with July and August being the two driest months of the year. The subtropical region tends to have a relatively mild year-round temperature with the occasional exceedingly hot and cold periods (Estaville and Earl 2008).

2.1.2 *Topography, Geology, and Soils*

The Mesquite and White Rock Lake 7.5-minute USGS topographic quadrangle maps illustrate that the APE is located on the floodplain and terraces of Duck Creek and on the sloping margins of an upland ridge within a suburban park setting (see **Figure 1.2**). The primary topographic feature of the APE is Duck Creek, which flows in a generally northwest-to-southeast direction towards the East Fork Trinity River. Previous urban development adjacent to the APE has since altered much of the topographic setting surrounding the APE. Clearing and grading has resulted in leveling the terrain and channelizing a portion of Duck Creek in the vicinity of the Northern APE.

The APE lies within the Northern Blackland Prairie subregion of the Texas Blackland Prairies ecoregion. This area is distinguished from surrounding regions by gently rolling hills and fine-textured, black, clay-rich soils and prairie vegetation (Griffith et al. 2007). Vertisols dominate the Blackland Prairie ecoregion and consist of high clay content soils that have significant shrink and swell potential. Most of the native prairie has been converted to cropland, non-native pasture, and expanding urban uses. Historical vegetation included little bluestem, big bluestem, yellow Indiangrass, and tall dropseed.

The APE is underlain by the Cretaceous-age Ozan (Ko) and Quaternary-age alluvium (Qal) geologic formations (McGowen et al. 1987, USGS 2019; **Figure 2.1**). The Ozan Formation is comprised of sandy, chalky, and glauconitic marl (Scoggins 2004). The Quaternary-age alluvium and terrace deposits are comprised of clay and silty clay largely derived from the Trinity River and its major tributaries (USGS 2019).

As illustrated by the *Soil Survey of Dallas County, Texas*, there are nine soil map units within the APE (Coffee et al. 1980; **Figure 2.2**; **Tables 2.1** and **2.2**). Approximately 14.5 percent of the Northern APE and 55.6 percent of the Southern APE contains soils typical of upland settings in the Northern Blackland Prairies region. The remaining 85.5 percent and 44.4 percent of the Northern and Southern APE, respectively, contain frequently flooded alluvial soils along Duck Creek. Soil data was viewed from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (Web Soil Survey 2019).

Figure 2.1
Geologic Setting

County: Dallas
State: Texas
Date map created: 2/4/2019
Source: TNRIS Geologic Atlas of Texas; Dallas Sheet
IES Project Ref: 04.188.004

Area of Potential Effects

Geologic Formation

Kau - Austin Chalk
Ko - Ozan Formation
Qal - Alluvium

N

1 inch = 2,250 ft

0 2,250 4,500 ft

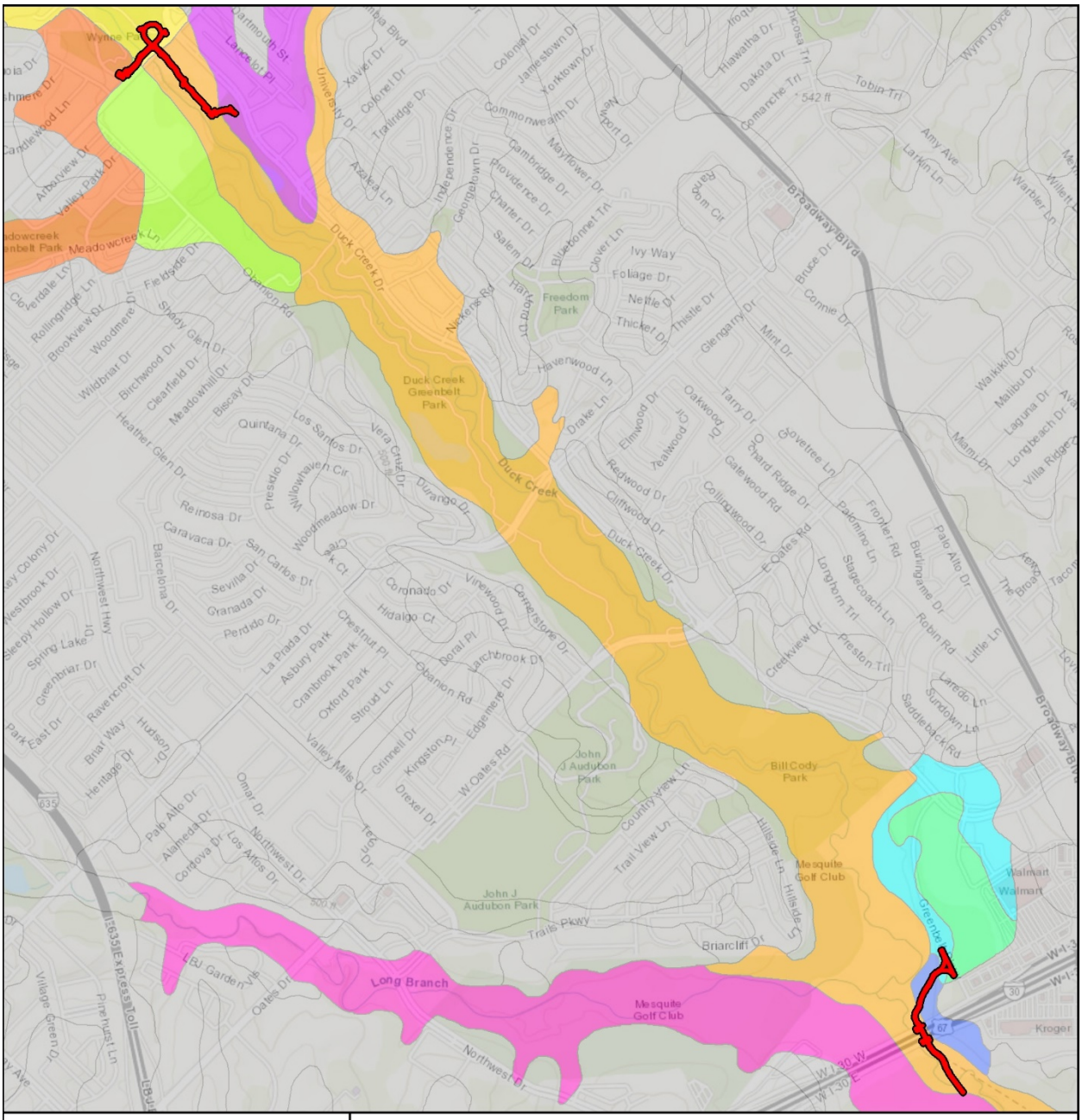

Figure 2.2
Soil Map Units Located Within and Adjacent to the APE

County: Dallas
State: Texas
Date map created: 2/4/2019
Source: 2007 USDA
NRCS Digital Soils Database
IES Project Ref: 04.188.004

Table 2.1: Soils within the Northern APE

Soil Map Unit Description	Percentage of APE
35 – Ferris-Urban land complex, 5 to 12 percent slopes - This component is described as clay located in ridges. Depth to a root restrictive layer or bedrock is 40 to 60 in to densic bedrock. The natural drainage class is well drained.	7.9
37 – Frio silty clay, 0 to 1 percent slopes, frequently flooded - This component is described as silty clay located on floodplains. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is well drained.	22.2
38 – Frio-Urban land complex, frequently flooded - This component is described as silty clay located on floodplains. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is well drained.	63.5
45 – Houston Black-Urban land complex, 0 to 4 percent slopes - This component is described as clay located in ridges. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is moderately well drained.	3.0
49 – Lewisville-Urban land complex, 0 to 4 percent slopes - This component is described as clay located in stream terraces. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is well drained.	3.4

Table 2.2: Soils within the Southern APE

Soil Map Unit Description	Percentage of APE
37 – Frio silty clay, 0 to 1 percent slopes, frequently flooded - This component is described as silty clay located on floodplains. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is well drained.	43.7
46 – Lewisville silty clay, 1 to 3 percent slopes - This component is described as silty clay located on stream terraces. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is well drained.	10.2
47 – Lewisville silty clay, 3 to 5 percent slopes, eroded - This component is described as silty clay located on stream terraces. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is well drained.	27.7
48 – Lewisville silty clay, 5 to 8 percent slopes - This component is described as silty clay located in stream terraces. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is moderately well drained.	17.2
73 – Trinity clay, 0 to 1 percent slopes, frequently flooded - This component is described as clay located in flood plains. Depth to a root restrictive layer or bedrock is more than 80 in. The natural drainage class is moderately well drained.	0.7

CHAPTER 3: CULTURAL BACKGROUND

3.1 Previous Investigations

A file search within the Texas Archeological Sites Atlas (TASA) and the Texas Historic Sites Atlas (THSA) maintained by the THC indicated there are no previously recorded archeological sites, National Register properties or districts, historical markers, or cemeteries within the APE (TASA 2019; THSA 2019). The TASA database identified two previously conducted archeological surveys within portions of the APE (TASA 2019; **Table 3.1**; **Figure 3.1**). However, both surveys were reconnaissance in nature and did not include subsurface investigations (SDHPT 1987; Whitsett 1978). In addition, TASA records indicate that four previously conducted archeological surveys and a single previously recorded archeological site are located within 1 mi of the APE (TASA 2019; **Tables 3.2** and **3.3**).

Table 3.1: Previously Conducted Archeological Surveys within the APE

Agency	ACT Permit No.	Firm/Institution	Date	Survey Type	Location (Approximate)
Environmental Protection Agency (EPA)	n/a	Texas Department of Water Resources	1978	Linear	Overlaps southern half of Southern APE
State Department of Highways and Public Transportation (SDHPT)	n/a	SDHPT	1987	Linear	Overlaps southern half of Southern APE

Table 3.2: Previously Conducted Archeological Surveys within 1 Mile of the APE

Agency	ACT Permit No.	Firm/Institution	Date	Survey Type	Location (Approximate)
Texas Parks and Wildlife Department (TPWD); City of Garland	459	AR Consultants, Inc.	1985	Area	0.43 mi south of Northern APE
USACE	n/a	USACE	1993	Linear	0.43 mi north of Northern APE
USACE; City of Garland	3568	Lopez Garcia Group	2005	Area	0.20 mi south of Northern APE
Department of Housing and Urban Development (HUD)	n/a	C Dimensions, Inc.	2007	Area	0.70 mi northeast of Southern APE

Table 3.3: Previously Recorded Archeological Sites within 1 Mile of the APE

Site Trinomial	Time Period	Site Type	Site Size	Depth Extent	Cultural Materials	Topographic Setting	Reference
41DL50	Prehistoric	Camp	750 x 255 ft	No data	Projectile points, scrapers, and drills	Upland	Harris 1941

3.2 Cultural Resources Potential

In addition to the TASA review, several additional resources were referenced to determine the overall potential for encountering cultural resources within the APE. These resources included soil survey data (NRCS 2019; Coffee et al 1980), geologic data (McGowen et al. 1987), the Texas Department of Transportation (TxDOT) Potential Archeological Liability Map (PALM), the National Archives and Records Administration's (NARA) 1940 Census Enumeration District Maps for Dallas County, the Texas Historic Overlay (THO) georeferenced maps, and historic and modern aerial photography and satellite imagery.

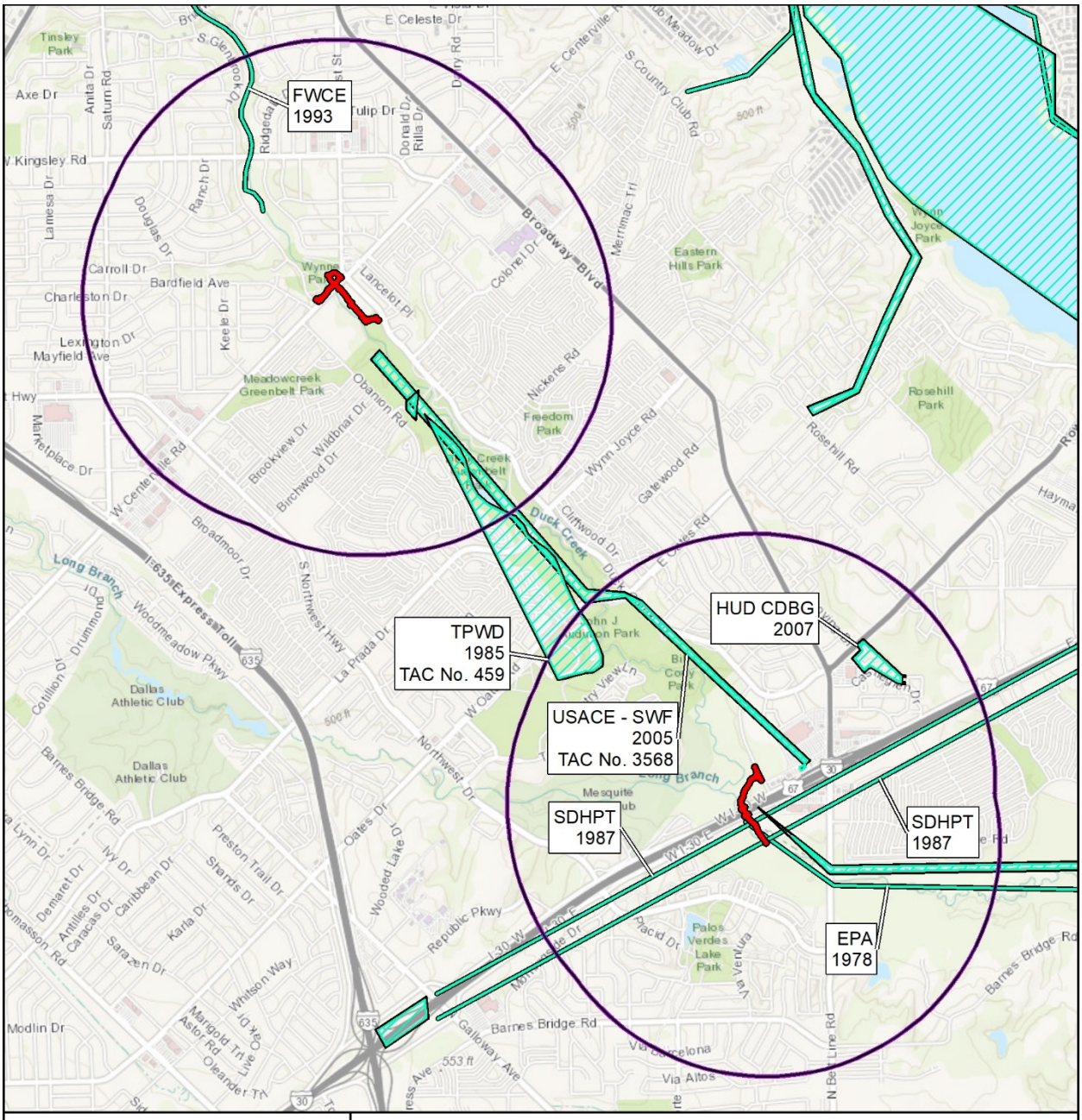

Figure 3.1
Previous Investigations Within
1 Mile of the APE

County: Dallas
State: Texas
Date map created: 2/4/2019
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.6
IES Project Ref: 04.188.004

3.2.1 *Disturbance Analysis*

During the background review, it was determined that ground-disturbing activities related to past land use have transpired within the APE. Historical aerial photographs indicate that the property parcels within and adjacent to the APE were primarily used for agricultural or ranching purposes as early as 1942, and presumably since the late 19th or early 20th centuries. The majority of the APE has been cleared of woody vegetation at various points throughout the 20th century, which has gradually become covered by secondary growth.

Beginning in the late 1950s and early 1960s, urbanization began to spread to eastern Dallas County. The area surrounding the Northern APE was largely developed into residential subdivisions. Prior to 1968, several commercial buildings were constructed adjacent to the Northern APE at the southwest corner of Duck Creek Drive and Centerville Road, which had been paved and widened. In the 1970s, most of the APE north of Centerville Road was heavily disturbed by construction activities associated with the expansion of the road. During this road project, it appears that Duck Creek was partially channelized. Between 1989 and 2001, park trails, access roads, stormwater outflow channels, and parking lots were constructed in parts of the APE. Currently, the Northern APE is situated in the Lon L. Wynne Park, north of Centerville Road and Bass Park, south of Centerville Road.

Based on a review of historical aerial photographs, the Southern APE was used for agricultural purposes or remained undeveloped for most of the 20th century. Notable disturbances within and adjacent to the Southern APE include the construction of IH 30 between 1942 and 1952, completion of highway frontage roads in the late 1970s, operation of the Belt Line-67 drive-in movie theater east of the APE, installation of a wastewater sewer line, and construction of commercial buildings north of IH 30 in 2010 or 2011. Between 1979 and 1989, multiple overhead electric transmission lines were erected in the APE and the corridor has been routinely maintained. Prior to 2001, a stormwater outfall channel was installed near the northern part of the Southern APE. This channel was filled when the adjacent property was developed in 2011. Construction of Greenbelt Parkway and the Duck Creek Trail took place along the northern margin of the Southern APE in 2006. In 2008, the overhead electric transmission line corridor, extending through the Southern APE, received extensive maintenance that included vegetation clearing, grading, and installation of rock rip-rap armoring at channel crossings.

3.2.2 *Direct APE*

3.2.2.1 Prehistoric Archeological Resources Potential

Although only a single prehistoric archeological site (41DL50) has been previously recorded within 1 mi of the APE, several prehistoric archeological sites have been documented along the Duck Creek watershed. Previously recorded sites within the watershed occupy both the upland terrace escarpments (41DL47, 41DL48, 41DL50, and 41DL195) as well as the floodplain of Duck Creek (41DL457). According to the TxDOT PALM, most of the overall APE contains a moderate to high potential for shallow and deeply buried cultural materials within previously undisturbed areas. The remainder of the APE north of Centerville Road and along IH 30 features a low to moderate potential for containing shallow and deeply buried cultural deposits within a reasonable context. As previously discussed, significant ground-disturbing activities have transpired within the APE that have likely compromised the contextual integrity of the area. Subsequently, the potential for the preservation of archeological deposits within previously disturbed portions of the APE has been reduced to moderate to low.

3.2.2.2 Historic Period Resources Potential

Historic-period resources within North-Central Texas are primarily related to farmsteads, houses, and associated outbuildings and structures that date from the mid-19th to the mid-20th centuries. Typically, these types of resources are located along old roadways, but can be located along railroads, streams, and open pastures. Although determining the presence of the earliest of these buildings and structures is problematic, maps depicting these features in the vicinity of the APE are available as early as 1920.

Based on a review of historical maps and aerial photographs, the APE once contained two buildings. The 1920 USDA Dallas County soils map depicts a building located within the northern terminus of the Southern APE. However, this building is not illustrated on the 1900 Sam Street's Map of Dallas County or the 1936 Dallas County Highway map, nor is it visible on 1942 aerial photographs. The former location of the structure has subsequently been disturbed by the installation of utilities and a drainage channel. The other building within the APE was identified in an aerial photograph dating to 1942. The photograph indicates the building was located in the northern portion of the Northern APE. The building is not depicted on historical maps and appears to have been demolished by 1952. Construction activities related to the expansion of Centerville Road and creation of the Lon L. Wynne Park have caused significant disturbance around the former location of the building. In consideration of significant past ground disturbing activities, the potential of encountering historic-age archeological resources with contextual integrity is low.

3.2.3 *Indirect APE Resource Potential*

A review of historical and modern aerial photographs indicate there are no historic-aged architectural resources within the indirect APE associated with the proposed project.

CHAPTER 4: METHODS

The methods utilized during this survey satisfy the archeological survey standards for field investigations recommended by the CTA (CTA 1996, 2001), as approved by the THC. Components of the survey included archival and background research, pedestrian reconnaissance survey, and intensive archeological survey. Prior to fieldwork, the IES staff conducted historical and archeological records reviews to determine the locations of previously recorded resources within the APE and within a 1-mi (1.6-kilometer [km]) radius of the direct APE (see **Section 3.1**). IES staff also reviewed ecological, geologic, and soils data, historical and modern topographic maps, and aerial photographs of the APE. Due to the variability in prehistoric and historic-period settlement patterns, land use, and archeological site preservation potential within the APE, multiple survey and sampling methods were used during this investigation, including the use of systematic shovel testing and backhoe trenching to identify archeological site locations.

4.1.1 *Pedestrian Survey*

The intensive pedestrian survey consisted of visual examination of the ground surface and existing subsurface exposures for evidence of archeological sites within previously unsurveyed and undisturbed portions of the APE. The pedestrian survey consisted of a single transect, which was implemented along portions of the APE corridor with the potential to contain archeological deposits. The pedestrian survey transect generally followed the centerline of the proposed trail. Areas displaying high levels of disturbance were photographed to document the lack of potential for containing archeological deposits. Other documentation methods included narrative notes and maps.

4.1.2 *Intensive Survey*

In areas with potential for the preservation of buried archeological materials, shovel tests were excavated to the top of culturally sterile deposits, typically the argillic (Bt) subsoil horizon in this area. Each shovel test was at least 30 centimeters (cm) in diameter and was hand excavated in levels not exceeding 20 cm in thickness. Excavated soil was screened using 0.64-cm hardware cloth to facilitate the recovery of buried cultural materials. If clay content was high and could not be efficiently screened, the excavated soil was troweled through by hand and inspected for cultural materials. Investigators documented the results of each shovel test on standardized forms. In addition, all shovel test locations were recorded using hand-held Global Positioning System (GPS) units.

Standards for archeological methods typically require that measurements be recorded in metric units. For this reason, while general distances and engineering specifications are described in imperial units (e.g., in, ft, mi) within this report, archeological measurements and observations are listed in metric units (e.g., cm, meter [m], km), unless historic-period artifact or architectural elements are more appropriately recorded in imperial units.

4.1.3 *Backhoe Trenching*

Due to the depth of the proposed impacts within the Duck Creek floodplain, archeological investigations included backhoe trenching. Backhoe trenching was conducted where proposed impacts will exceed 1 m in depth within previously undisturbed portions the Duck Creek floodplain at the locations proposed for the installation of bridge piers.

Backhoe trenches averaged 6 m in length and were excavated to a maximum depth of 3.5 m. After each trench had been excavated to a depth of approximately 2 m, an Occupational Safety and Health Administration (OSHA) competent field supervisor assessed the stability of the trench prior to recording soil data. After detailed recording of the uppermost 2 m of the exposed soil profile, excavation continued to the maximum depth of 3.5 m. Soil profile data for excavation depths greater than 2 m were estimated from excavated samples and measurements taken from the top of each trench profile. Backhoe trench profiles and excavated fill were monitored for the presence of archeological materials. A representative soil sample from each stratigraphic layer was screened through 0.64-cm hardware mesh or was manually

troweled and inspected for cultural materials. The remaining excavated soil was visually inspected as it was placed on the spoil pile. Trench excavation ceased once excavation reached the vertical extent of Holocene soils, bedrock, water table, or the maximum depth at which the backhoe could safely excavate. Each excavated trench was photographed, recorded using a GPS unit, and backfilled.

4.1.4 *Archival Research*

Prior to field investigations, a suite of archival sources including historic maps and aerial photographs was reviewed to determine former land use patterns and the locations of historic-age (i.e., greater than 50 years old) structures within the direct APE and indirect APE.

4.2 Curation

No artifacts were encountered during this investigation. Project-related records, field notes, photographs, forms, and other documentation will be curated. These project records will be prepared to CAR curation standards. All project records will be temporarily stored at the IES office and will be permanently curated at CAR at The University of Texas at San Antonio.

CHAPTER 5: RESULTS

During this survey, the direct APE was subjected to reconnaissance survey transects and a systematic intensive survey. Pedestrian reconnaissance was conducted across the entire APE to confirm the extent of prior ground disturbances and assess the likelihood of encountering cultural resources. Ground surface visibility was highly variable and irregular across the APE, ranging from 0 to 100 percent. Intensive survey with systematic shovel test sampling was conducted across previously unsurveyed and undisturbed portions of the APE with the potential to contain archeological resources within the shallow subsurface. Backhoe trenching was conducted where proposed impacts will exceed 1 m in depth within previously undisturbed portions of the Duck Creek floodplain due to the potential for deeply buried archeological deposits in the floodplain setting.

5.1 Archeological Survey

5.1.1 *Pedestrian and Intensive Survey Observations*

Pedestrian survey verified the past ground disturbances outlined in **Chapter 3**. The Northern APE, in Lon L. Wynne Park on the west side of Duck Creek, featured concrete parking areas and sidewalks (**Appendix A, Photographs 1** and **2**). Duck Creek has been channelized and modified with stormwater outfalls (**Appendix A, Photographs 3** and **4**). The portion of the APE in Lon L. Wynne Park on the east side of Duck Creek has sidewalks bisecting the APE and the margins of the Duck Creek channel have been graded (**Appendix A, Photographs 5** through **9**). The APE then passes under the Centerville Road bridge, which is disturbed from the construction of the bridge (**Appendix A, Photographs 10** and **11**). The APE then follows the eastern bank of the channelized creek for 0.17 mi in a northwest-to-southeast direction, until reaching a concrete sidewalk and stormwater outfall processing structure (**Appendix A, Photographs 12** through **16**).

The Southern APE, extending southwest from the existing Duck Creek Trail, traverses an elevated construction pad site before turning south and southeast to parallel a disturbed utility easement containing a buried sanitary sewer pipeline and an overhead electric utility line (**Appendix A, Photographs 17** through **19**). After crossing under the IH 30 bridge, the APE continues to follow the utility easement and terminates immediately south of Duck Creek (**Appendix A, Photographs 20** and **21**).

Shovel tests were conducted within previously unsurveyed portions of the APE with the potential to contain intact buried cultural deposits within the shallow subsurface. During the intensive survey, 10 negative shovel tests were excavated in the Northern APE and two negative shovel tests were excavated within the Southern APE (**Figure 5.1**). The remaining portions of the APE were determined to have been subjected to significant previous ground disturbances. Previously disturbed areas were visually assessed and photographed during the pedestrian survey.

Soils exposed within shovel tests generally revealed a profile that transitioned from very dark grayish brown (10YR 3/2) to brown (10YR 4/3) clay that contained few to no gravel inclusions (**Appendix A, Photograph 22**). Portions of the APE featured soils that exhibited heavy mottling within yellowish brown (10YR 5/6) and light gray (10YR 7/2) clays and limestone gravels. The majority of the Southern APE was extensively disturbed through previous construction and maintenance of the utility easement corridor. Additionally, an exposed cut bank within the Duck Creek channel west of the APE exhibited the presence of a paleosol (buried A horizon) approximately 2 m below the ground surface (**Appendix A, Photograph 23**).

Figure 5.1
Shovel Test and
Trench Location Map

County: Dallas
State: Texas
Date map created: 2/8/2019
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.5
IES Project Ref: 04.188.004

Area of Potential Effects - Direct
Previously Disturbed Area
Negative Shovel Test
Backhoe Trench

N

0 0.5 1 mi
0 0.5 1 1.5 km

5.1.2 *Backhoe Trenching*

Backhoe trenching was conducted within previously undisturbed portions of the Duck Creek floodplain due to the potential for preservation of deeply buried archeological deposits within the alluvial setting. Two backhoe trenches were excavated within the APE at the locations proposed for the pedestrian bridge piers (see **Figure 5.1**; **Table 5.1**). Despite the observation of a well-developed paleosol at a depth of approximately 2 m along the distal bank of a meander upstream and west of the APE, this paleosol was not observed in either trench excavated within the APE.

Trench 1 was excavated approximately 3 m south of the Duck Creek channel (**Appendix A, Photographs 24** through **28**). The soil profile exposed within Trench 1 consisted of a thin surface layer of yellowish brown (10YR 5/4) sandy loam overlying a nearly 1-m thick deposit of dark gray (10YR 4/1) clay loam mixed with a large quantity of modern construction debris. At a depth of 116 cm below surface (cmbs), dark gray (10YR 4/1) clay loam with a weak platy structure transitioning to weak subangular blocky structure was encountered within the upper 20 cm of the stratum, which gradually transitioned to massive structure with depth. This stratum may represent a weakly-developed paleosol (buried A horizon), indicating a period of relative landscape stability allowing formation of the A horizon followed by a period of widespread upland erosion and alluvial deposition that served to bury and preserve the former ground surface. This stratum gradually transitioned to grayish brown (10YR 5/2) massive clay loam with brownish yellow (10YR 6/6) mottles at a depth of approximately 145 cmbs. The final stratum likely represents pre-Holocene alluvial deposits and is unlikely to contain or overly prehistoric cultural deposits.

Trench 2 was excavated north of the Duck Creek channel. The soil profile exposed within Trench 2 was generally similar to Trench 1 (**Appendix A, Photographs 29** and **30**). Like Trench 1, a significant quantity of construction debris was encountered within upper portion of Trench 2, extending to a depth of approximately 51 cmbs. A similar, weakly-developed paleosol, consisting of an approximately 30 cm thick very dark gray (10YR 3/1) massive clay, gradually transitioned to a grayish brown (10YR 5/2) massive sandy clay loam by a depth of 80 cmbs. This stratum continued to a depth of at least 350 cmbs, where excavation ceased due to depth limitations of the excavation equipment.

Table 5.1: Summary of Backhoe Trench Results

Trench No.	Landform	Soil Profile	Artifacts
1	Floodplain	0–23 cmbs: yellowish brown (10YR 5/4) sandy loam; granular structure; clear wavy boundary 23–116 cmbs: dark gray (10YR 4/1) clay loam; medium subangular blocky structure; large quantities of construction debris consisting of gravel and modern refuse; yellowish red (5YR 4/6) mottling along root pores; gradual wavy boundary 116–145 cmbs: dark gray (10YR 4/1) clay loam; platy structure transitioning to subangular blocky structure within the upper 20 cm of the stratum, gradually transitioning to massive structure with depth; diffuse smooth boundary 145–300 cmbs: grayish brown (10YR 5/2) clay loam; massive structure; brownish yellow (10YR 6/6) mottles	None
2	Floodplain	0–22 cmbs: dark grayish brown (10YR 4/2) clay loam; fine granular structure; gradual wavy boundary 22–51 cmbs: dark grayish brown (10YR 4/2) clay; massive structure; large quantities of construction debris consisting of gravel and modern refuse; yellowish brown (10YR 5/8) clay loam clasts; clear irregular boundary 51–80 cmbs: very dark gray (10YR 3/1) clay; massive structure; clear irregular boundary 80–350 cmbs: grayish brown (10YR 5/2) sandy clay loam; massive structure; laminated sands at 290 cmbs	None

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CHAPTER 6: SUMMARY AND RECOMMENDATIONS

During this cultural resources survey for the proposed MGR Bikeway (Duck Creek Trail Connections) project, the entire 2.45-ac APE was inspected through pedestrian reconnaissance and intensive survey. In total, 12 shovel tests and two backhoe trenches were excavated within the APE. All shovel tests and backhoe trenches were negative for artifacts or cultural deposits. In addition, 100-ft-wide indirect APE buffers surrounding USACE jurisdictional impact areas associated with bridge construction were reviewed for indirect visual impacts to historic-age architectural resources as per Section 106 of the NHPA. As a result of the survey, no archeological sites or above-ground architectural resources were encountered within the APE and no architectural resources were identified within the indirect APE.

Therefore, it is the recommendation of IES that the MGR Bikeway (Duck Creek Trail Connections) project be permitted to continue without the need for further cultural resources investigations. However, if any cultural resources are encountered during construction, the operators should immediately stop construction activities in the area of the inadvertent discovery. The project cultural resources consultant should then be contacted to initiate further consultation with the THC/SHPO prior to resuming construction activities. In addition, if project designs change, and areas outside the APE detailed within this report are to be impacted, additional field investigations may be required.

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CHAPTER 7: REFERENCES CITED

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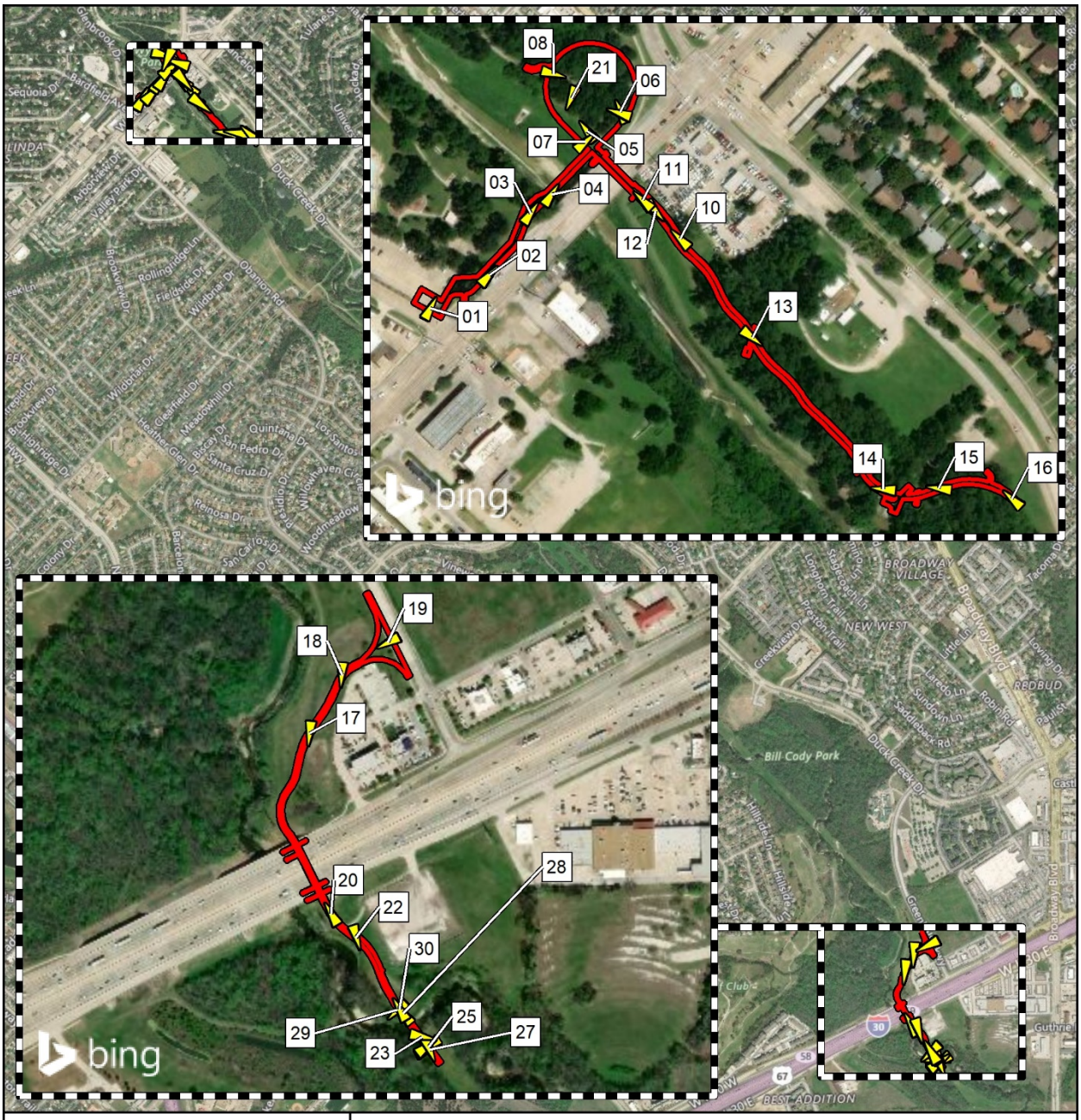
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Bill Cody Park
BROADWAY VILLAGE
NEW WEST
REDBUD
BEST ADDITION
Guthrie
Appendix A
Photograph Location Map
Area of Potential Effects - Direct
Photograph Location
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County: Denton
State: Texas
Date map created: 2/4/2019
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.5
IES Project Ref: 04.217.022
1 inch = 2,100 feet
0
2,100
4,200
ft

Photograph 1 – Overview of Northern APE showing parking lot and road easement, view to the northeast.

Photograph 2 - Overview of Northern APE showing road easement, view to the northeast.

Photograph 3 – Spillway at location of pedestrian bridge within Northern APE, view to the northeast.

Photograph 4 – Location of pedestrian bridge within Northern APE with graded creek bank, view to the northeast.

Photograph 5 - Location of pedestrian bridge within Northern APE with graded creek bank, view to the north.

Photograph 6 – Overview of Northern APE in Lon L. Wynne Park, view to the northeast.

Photograph 7 - Overview of Northern APE in Lon L. Wynne Park, view to the east.

Photograph 8 - Overview of Northern APE in Lon L. Wynne Park, view to the east.

Photograph 9 - Overview of Northern APE in Lon L. Wynne Park, view to the west.

Photograph 10 – Northern APE passing under Centerville Road bridge, view to the northwest.

Photograph 11 – Graded creek bank passing under Centerville Road bridge within Northern APE, view to the northwest.

Photograph 12 – Graded creek bank within Northern APE, view to the southeast.

Photograph 13 – Overview of Northern APE, view to the southeast.

Photograph 14 - Stormwater outflow processing structure and concrete sidewalk within Northern APE, view to the southwest.

Photograph 15 - Stormwater outflow processing structure and concrete sidewalk within Northern APE, view to the southwest.

Photograph 16 - Overview of Northern APE at intersection with existing trail, view to the northwest.

Photograph 17 - Overview of Southern APE, view to the southeast.

Photograph 18 - Overview of Southern APE, view to the southeast.

Photograph 19 - Overview of Southern APE, view to the southeast.

Photograph 20 - Overview of Southern APE, view to the northwest.

Photograph 21 - Overview of Southern APE, view to the northwest.

Photograph 22 – Representative shovel test profile.

Photograph 23 – Cutbank of Duck Creek west of Southern APE, view to the southwest.

Photograph 24 –Trench 1 within Southern APE, view to the southeast.

Photograph 25 –Trench 1, east profile.

Photograph 26 –Trench 1, Zone II, disturbed construction fill.

Photograph 27 – Trench 1, modern debris within Zone II construction fill.

Photograph 28 –Trench 1, Zone III, transitional platy-to-subangular blocky soil structure.

Photograph 29 – Trench 2, view to the northwest.

Photograph 30 –Trench 2, west profile.