

Pedestrian Survey of Proposed Greenway Extensions at Leon Creek/IH-10/Loop 1604 Area, San Antonio, Bexar County, Texas



by
Antonia L. Figueroa and Mark P. Luzmoor

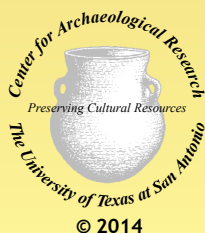
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Texas Antiquities Permit No. 6873

Non-Restricted

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Technical Report, No. 60**

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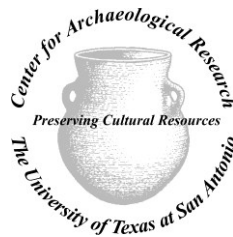
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Abstract:

In May 2014, the Center for Archaeological Research (CAR) at The University of Texas at San Antonio (UTSA) conducted an archaeological survey and shovel testing of a 1 km extension of the Leon Creek Greenway in advance of the construction of the proposed trail. The archaeological work included a 100 percent pedestrian survey of the proposed trail and shovel testing. The principal goal of the survey was to identify and document all prehistoric and/or historic archaeological sites that might be impacted by the proposed park trail. The initial portion of the trail began within the previously recorded Pavo Real site (41BX52), originally excavated in 1979-1980 (Collins et al. 2003). While this area was surveyed, no shovel tests were excavated in this previously tested area. Eight shovel tests were excavated along the remaining portion of the proposed trail extension. The only buried cultural material, consisting of several pieces of modern glass and a bullet casing, was encountered in a single shovel test located on the eastern end of the proposed trail, just west of IH-10. No temporally diagnostic artifacts, features, or new sites were identified during the course of this survey. The archaeological investigations were performed under the Texas Historical Commission Permit No. 6873, with Antonia L. Figueroa serving as the Project Archaeologist, Mark Luzmoor serving as Crew Chief, and Dr. Raymond Mauldin serving as the Principal Investigator. Cynthia Munoz served as the project manager. Given the lack of recovery, the CAR does not recommend any further work at this location. We suggest that construction of the Leon Creek Greenway trail extension should proceed as planned. In a letter dated June 5, 2014, the Texas Historical Commission (THC) agreed with these recommendations. Kay Hinds of the COSA Office of Historic Preservation also concurred with the CAR's suggestions. No artifacts were curated on this project. Records generated during this project were prepared for according to THC guidelines and are permanently curated at the CAR at UTSA.

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Acknowledgements:

We could not have completed this project without the efforts of the hardworking field crew that consisted of Colt Dresser, Lindy Martinez, and Alex McBride. Special thanks to Sable Kitchen and the staff of Adams Environmental, Inc. for project details and the opportunity to work on the project. For reviewing the report and providing comments, we would like to thank Kay Hinder with the City of San Antonio Office of Historic Preservation. The project would not be possible without the permit for archaeological investigations provided by Mark Denton with the Texas Historical Commission. Thanks to Cindy Munoz who served as project manager and Principal Investigator Dr. Raymond Mauldin of CAR for aiding with logistics and assisting with the project in many ways. Melissa Eiring processed the records for the project. Laura Carbajal assisted with the maps and GIS/GPS. Rick Young provided the figures for the report, and Kelly Harris edited the final document.

Chapter 1: Introduction

In May 2014, the Center for Archaeological Research (CAR) of The University of Texas at San Antonio was contracted by Adams Environmental, Inc. (AEI) to provide services to the City of San Antonio (COSA). The CAR conducted an archaeological pedestrian survey with shovel testing of a section of proposed trail that is part of the Greenway extensions at Leon Creek. The proposed trail is located in San Antonio, Bexar County, Texas. Figure 1-1 depicts the project area on the Castle Hills 7.5-minute series USGS quadrangle map. The proposed trail system is 1 km long, with construction impact estimated at less than 7.3 m in width. Conducted in advance of the construction of the proposed trail, the principal goal of the survey was to identify and document all prehistoric and/or historic archaeological sites that might be impacted by the proposed park trail.

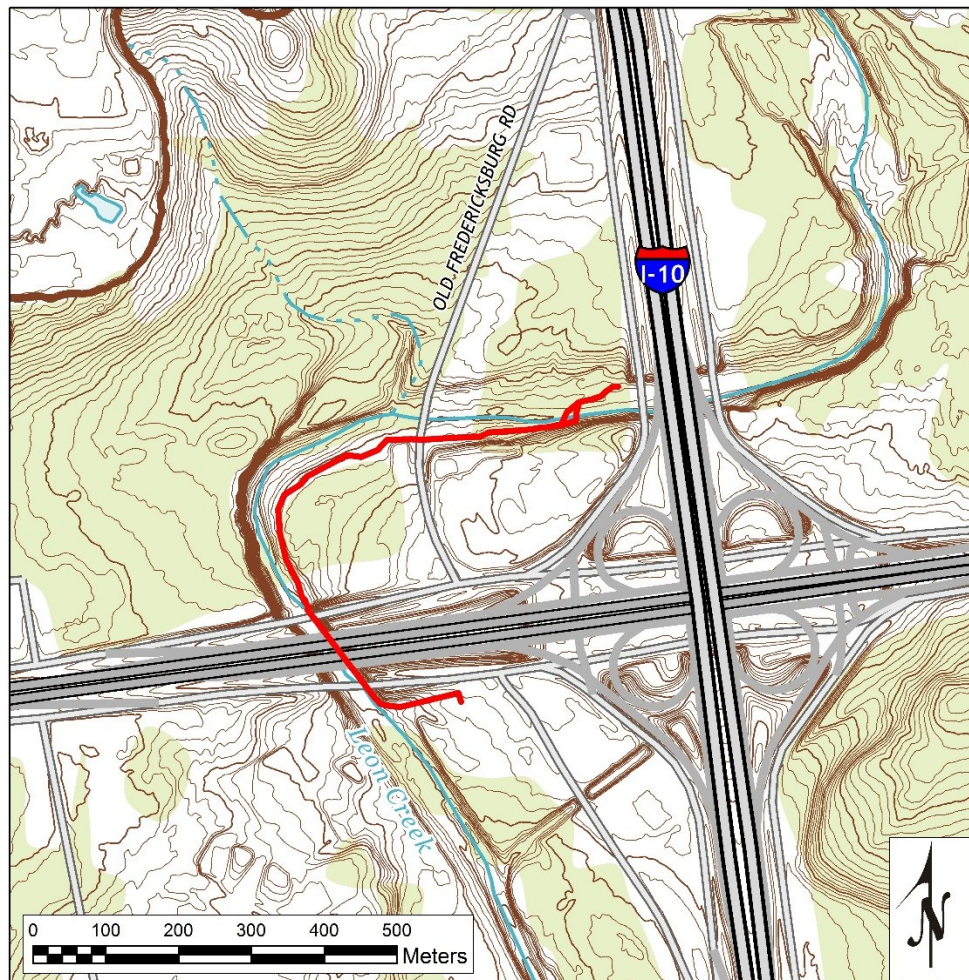


Figure 1-1. *The location of the project area (red line) on the Castle Hills 7.5-minute series USGS quadrangle map.*

This archaeological investigation was performed under THC Permit No. 6873, with Antonia L. Figueroa serving as the Project Archaeologist, Mark Luzmoor functioning as Crew Chief, and Dr. Raymond Mauldin serving as the Principal Investigator. Cynthia Munoz served as the project manager. The land impacted by the project is owned by the COSA. As such, the project has to comply with State Historic Preservation laws and, specifically, with the mandates of the Antiquities Code of Texas. The work was coordinated through the City's Office of Historic Preservation (OHP) in compliance with the City of San Antonio Unified Development Code Chapter 35. The investigations conducted by CAR included a pedestrian survey of the trail and the excavation of eight shovel tests. The only buried cultural material, consisting of several pieces of modern glass and a bullet casing, was encountered in a single shovel test. No prehistoric or clearly identifiable historic material was observed on the surface. Consequently, no new sites were identified during this linear survey. The CAR does not recommend any further work at this location. We suggest that construction of the Leon Creek Greenway trail extension proceed as planned. The THC, as well as the OHP, agreed with these recommendations.

Chapter 2: Project Setting

This chapter presents a brief overview of the project setting. The initial discussion concerns aspects of the physical environment of the region, with a focus on the project area. This is followed by a short review of the culture history of the region. The chapter concludes with a discussion of previous archaeological investigations near the project area.

Environment

The project area is in northwest San Antonio, Bexar County, Texas (Figure 2-1). Climate in this region is classified as subtropical-subhumid with hot, humid summers and mild, dry winters (Long 2010). Bomar (1999) reports that yearly temperature in San Antonio average 79.5°F (26.4°C), with January being the coolest month (60.8°F; 16°C) and August being the warmest (95.3°F; 35.2°C). Not surprisingly, the growing season is long, with an average of roughly 265 days a year in Bexar County (Long 2010).

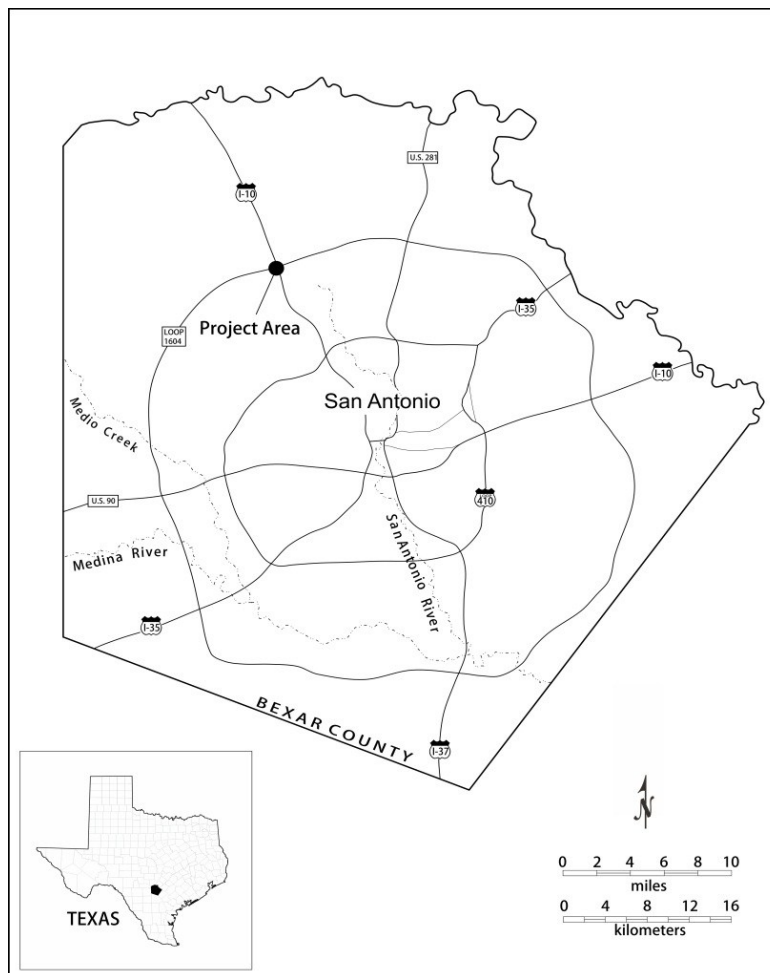


Figure 2-1. *Project area within Bexar County.*

Rainfall in San Antonio averages approximately 79 cm a year and currently has a bimodal distribution with peaks in May (10.7 cm) and September (8.7 cm). The driest month is December, with an average rainfall of only 3.8 cm (Bomar 1999; Long 2010). Details on historic and prehistoric climate patterns for the region can be found in Bousman (1998), Cooke (2005), Mauldin (2003), Nickels and Mauldin (2001), Nordt et al. (2002), and Toomey (1993).

The project area is located on the southern edge of the Balcones Escarpment. It is within the Balconian Biotic Province as defined by Blair (1950) and close to the Texan and Tamaulipan areas. This proximity to multiple biotic zones means that inhabitants of the region would have had access to a wide variety of floral and faunal resources (see Blair 1950).

The project area is within the boundaries of the Edwards Plateau, which gradually slopes to the southeast and ends in the Balcones Escarpment (Taylor et al. 1991). The proposed trail extension runs along Leon Creek underneath Loop 1604 to the immediate west of IH-10 (Figure 2-2). Several low terraces are present in adjacent to Leon Creek. The close proximity of the trail to the creek in this depositional setting suggests that archaeological material could be buried.



Figure 2-2. Aerial photograph depicting the project area.

Leon Creek is one of several major streams draining the northern portion of the Edwards Plateau. The creek originates from limestone dominated Glen Rose and Edwards formation, roughly 10 km upstream from the project area (Thorton and Freeman 2010). Leon Creek is fed by springs and by rainfall runoff (Brune 1981). Currently, water is frequently available throughout the year at this location. In addition to water, the geological setting includes good access to chert resources useful for tool production (Fredrick and Ringstaff 1994; Mauldin and Figueroa 2006). Copious amounts of limestone for use in thermal features is also present.

The project area is dominated by Tinn and Frio series soils, with slopes of zero to one percent. Tinn series soils are very deep, moderately well drained, very slowly permeable, and formed in calcareous clayey alluvium (NCSS 2014). Frio series soils consist of loamy alluvium of Holocene age that are derived from mixed sources (NCSS 2014). These soils are associated specifically with Leon Creek and its terraces. The northern portion of the project area borders along Venus loam soils, which are located along stream terraces with zero to one percent slopes (NCSS 2014).

Culture History

The prehistoric occupation of Bexar County can be divided into three broad culture periods: Paleoindian, Archaic, and Late Prehistoric. These periods are defined by changes in hunting and gathering technologies, as well as other aspects of material culture. These shifts are thought to reflect changes in overall adaptation, including subsistence and social relationships. This section is based on Collins' culture chronology from Central Texas (1995, 2004), as well as Black (1989; see also Black and Creel 1997), Hester (2004), and Johnson and Goode (1994).

Paleoindian

The Paleoindian period coincides with the end of the Pleistocene and spans roughly from 11,500-8800 BP (Bousman et al. 2004; Collins 2004). The period is often subdivided into an Early and a Late sub-period (e.g., Bousman et al. 2004), with the Early period most commonly identified with Clovis and Folsom projectile points. While claims for earlier occupations in Central Texas are increasingly well supported (see Collins 2003; Waters et al. 2011), Clovis material represents the earliest occupations that are acknowledged by most researchers. In the past, researchers generally thought of Paleoindian populations as groups of hunter-gatherers ranging over wide areas in pursuit of megafauna. Although Late Pleistocene megafauna may have constituted a large part of Paleoindian subsistence, these peoples are perhaps better characterized as generalized hunter-gatherers whose diet also included small game and plants. Collins (2003:9) suggests that the Gault site may represent a generalized adaptation, similar in that respect to the following Early Archaic period, rather than the specialized "big game" hunters commonly portrayed (e.g.,

Wormington 1957). Nevertheless, an analysis of faunal assemblages on 33 Clovis age sites by Waguespack and Surovell (2003) demonstrate that extinct megafauna were consistently present. Folsom occupations, which follow Clovis, do appear to be a more specialized adaptation focused on the exploitation of bison (*Bison antiquus*). These components are more limited spatially relative to Clovis, with Folsom located in or near grasslands that would be ideal for bison procurement (see Amick 1994; Andrews et al. 2008).

Late Paleoindian materials encompass a variety of projectile point forms within Texas (see Bousman et al. 2004). These include a variety of lanceolate-shaped, unfluted points (e.g., Golondrina/Barber/Dalton, Scottsbluff, St. Mary's Hall), as well as stemmed forms (e.g., Wilson, San Patrice, Berclair, Big Sandy). The spatial distribution of any one Late Paleoindian type is limited, and a variety of point forms is present. This diversity and limited distribution may reflect lower overall mobility, as well as an emphasis on local resources (see Anderson 1996).

Archaic

The Archaic period (8800-1200 BP) is associated with intensification of hunting and gathering and a move toward greater exploitation of local resources. This is reflected in the broadening of the material culture, including changes in projectile points and the "extensive use of heated rock" in cooking (Collins 1995:383). Food processing technologies appeared to have broadened as features, such as hearths, ovens, and middens, increase in frequency during this time (Black and McGraw 1985). Collins (1995, 2004) subdivides the Archaic into Early, Middle, and Late sub-periods (see also Johnson and Goode 1994). These sub-periods are distinguished by variances in climate conditions, resource availability, subsistence practices, and diagnostic projectile point styles (Collins 1995, 2004; Hester 2004).

In Central Texas, the Early Archaic dates from roughly 8800-6000 BP (Collins 1995, 2004). Changing climate and the extinction of megafauna appear to have initiated a behavioral change by hunter-gatherers, though as we suggested above, these changes may have been initiated at the close of the Late Paleoindian period (Anderson 1996). Early Archaic hunter-gatherers in Central Texas intensively exploited local resources, including deer, fish, and plant bulbs. A series of what appear to be specialized tools, including Guadalupe bifaces and Clear Fork gouges, appear during this period (Turner and Hester 1999). New processing facilities, such as burned rock middens (e.g., Acuna 2006; Collins 1998), also are present for the first time. These shifts all hint at differences in subsistence, settlement, and overall organization relative to the Paleoindian period.

The Middle Archaic, which dates from around 6000-4000 BP (Collins 1995, 2004), appears to have been a period of increasing population (Johnson and Goode 1994), based on the large number of sites documented

from this time in Central Texas and adjacent regions (Story 1985; Weir 1976). Climate was gradually drying as the Altithermal drought began. Demographic and cultural change likely occurred in response to these hotter and drier conditions. The accumulation of burned rock middens during the Middle Archaic coincided with an increased exploitation of plant resources (Black 1989; Johnson and Goode 1994). A variety of new point styles emerge (Turner and Hester 1999). Some researchers (e.g., Collins 2004; Johnson 1995; Johnson and Goode 1994) suggest that the shifts in point styles during the early portion of this period reflect the movement of populations into the region. They note that these styles are part of a specialized lithic technology geared to bison hunting. Collins (1995; 2004) also suggests that bison are present during the early portion of the Middle Archaic, when Bell, Andice, and Calf Creek points are present. He suggests that bison are absent late in the Middle Archaic, when these point styles decline (see also Dillehay 1974). In a recent review of bison presence/ absence data from Central and South Texas, Munoz and Mauldin (2011:105-117; see also Mauldin and Munoz 2011) found bison were present on 23 percent of 13 early Middle Archaic sites. This is consistent with Collins's (1995; 2004) suggestions. However, they also found that bison were recovered from five of 19 (26 percent) late Middle Archaic sites.

The final phase of the Archaic in Central Texas dates from 4000-1200 BP (Collins 2004). There is no consensus among researchers regarding population size in this sub-period. At this time there was a shift in projectile points styles, with the development of Bulverde, Pedernales, Kinney, Lange, Marshall, Williams, Marcos, Montell, Castroville, Ensor, Frio, Fairland, and Darl. Late Archaic cemeteries in Central and South Texas (e.g., Lukowski 1988; Munoz et al. 2013; Taylor and Highley 1995) may indicate that increasing population densities and the establishment of territorial boundaries (Black and McGraw 1985; Nickels et al. 1998; Story 1985). However, there is no consensus on the patterns of population growth during this time. Prewitt (1981, 1985) suggests increased population relative to the Middle Archaic, while Black (1989) believes populations were constant or decreased during the Late Archaic. There is also disagreement as to the continuing use of burned rock middens. Prewitt (1981) suggests that burned rock midden use declined, while others have argued that midden use continues throughout the Late Archaic (see Acuna 2006; Black et al. 1997; Black and McGraw 1985; Goode 1991). Bison are present at this time in Central Texas and form a component of subsistence (Collins 2004; Dillehay 1974; Mauldin et al. 2012). There is evidence of declining bison at the close of the Late Archaic (Dillehay 1974). Late in this subperiod, subsistence is assumed to reflect the use of a broad spectrum of resources (Black 1989), focused on local plants and animals (e.g., Skelton 1977).

Late Prehistoric

The Late Prehistoric period (1200-350 BP) in Central Texas marks a distinctive shift from the use of the atlatl and dart to the use of the bow and arrow (Black 1989; Collins 2004; Hester 2004; Story 1985). The

Late Prehistoric is subdivided into early and late sub-periods termed Austin and Toyah Intervals, respectively (Black 1986; Prewitt 1981).

With the exception of changes associated with the introduction of the bow and arrow, Austin lithic technology appears to have strong similarities to those in the Late Archaic (Johnson and Goode 1994; Prewitt 1981). Cemeteries are present during this period, including interments at Loeve Fox (Prewitt 1974) and Pat Parker (Greer and Benfer 1975). Indicators of violent death are present, with several cases of Scallorn points either embedded in human bone or found in close association with burials (e.g., Prewitt 1974:46). Some researchers have argued that burned rock middens were used less frequently during this period (e.g., Houk and Lohse 1993), though others suggest that the use of these features peaked at this time (Acuna 2006; Black and Creel 1997; Mauldin et al. 2003). Deer seem to be a focus during this period, possibly in response to what most researchers see as an absence, or at least a dramatic decline, in bison availability (Collins 2004; Dillehay 1974; but see Mauldin et al. 2012).

In the following Toyah Interval, lithic production is characterized by the use of flake/blade lithic technology that represents a departure from the more formal bifacial core reduction that dominated earlier periods. Toyah artifacts include Perdiz and Clifton arrow points, bone tempered ceramics, beveled knives, graters, drills, and end scrapers (see Black 1986; Johnson 1994; Kenmotsu and Boyd 2012). In addition, Collins (2004) suggests that mobility during this period was extremely high, based on an assumed dependence on bison. The assumption is based on the frequent co-occurrence of a set of lithic artifacts (Perdiz points, beveled knives, end scrapers) with bison remains, as these animals returned to Texas at roughly the same time as Toyah appeared (e.g., Dillehay 1974; Greer 1976; Hester 1975; Huebner 1991; Prewitt 1981). Bison were widely used during Toyah, being present on 83 percent of the 53 Toyah components recently reviewed for Central and South Texas (Mauldin et al. 2012). However, the remains of deer, along with other animals, are common on Toyah sites, as are the remains of local plant resources (Black 1986; Nickels 2000). Derring (2008) has recently reviewed subsistence data from Central Texas for this period. He concludes that Toyah subsistence was “based on a broad suite of plant and animal resources” (Derring 2008:59; see also Karbula 2003; Thoms 2008; Mauldin et al. 2013).

Historic

Although the Historic period theoretically begins in Texas with the shipwreck of the Narvaez expedition along the Texas coast in 1528, the majority of the inhabitants of Texas were Native Americans until the late eighteenth century (Favata and Fernandez 1993). From AD 1550 to the late 1600s, European forays into South and Central Texas were infrequent (Wade 2003). René Robert Cavelier, Sieur de La Salle, established a French settlement, Fort St. Louis, along Matagorda Bay on the Texas coast in 1685. Hunger, disease, and

escalating hostilities between the French and the Karankawas, subsequently destroyed the colony (Foster 1998). In 1690, as a result of the discovery of the remains of the La Salle colony, the Spanish began securing the northern border of New Spain, expanding their interests in East Texas to counter any French expansion across the Mississippi River. Europeans successfully settled in the region in early AD 1700 (Taylor 1996). The southward incursion of the Comanche and Apache and the northward expansion of Spanish influence led to the displacement of many of the area's indigenous groups. Decimated by disease brought by Europeans, many of the remaining groups sought refuge in the numerous Spanish missions established early in the eighteenth century. The move to the missions significantly impacted the hunter-gatherer way of life and the material culture. Artifacts from the Historic period reflect European influences and include metal, glass, and ceramics along with pre-Hispanic Goliad wares and lithic arrow points, tools, and gunflints (Taylor 1996). During this time, the San Antonio area was occupied by Tonkawas, Coahuiltecans, and Lipan Apaches (Long 2010).

Previous Archaeological Investigations

A background literature review revealed one previously recorded prehistoric archaeological site in close proximity to the project area (41BX1064) and one (41BX52) within the project area. In addition, Tennis (1996) discusses site 41BX47. While over 1.5 km to the southwest of the current project, the site has evidence of a variety of burned rock features buried along Leon Creek that date in the Archaic and Paleoindian periods.

The Pavo Real site (41BX52) was first recorded in 1970 by Bill Fawcett and Paul McGuff (THC 2014). The site had been heavily impacted from mechanical clearing associated with the expansion of Loop 1604. Data recovery excavations between May 1979 and January 1980 by the Texas Department of Highways and Public Transportation (TDHPT) consisting of test units and backhoe trenches revealed Paleoindian and Archaic components (Collins et al. 2003:5). Both Clovis and Folsom components were discovered during these data recovery operations. However, during excavations, the stratigraphy of the components made it difficult to determine if they were separate or if they were a mixed Clovis-Folsom assemblage. Few Paleoindian hearths or burned rock middens were encountered, but many Archaic age hearths and middens were discovered throughout the site (Collins et al. 2003:5-6).

Additional data recovery excavations were carried out at the Pavo Real site between November 2006 and June 2007 to determine the depth of construction fill and locate any intact archaeological deposits (Figueroa and Frederick 2008). Because no Paleoindian period materials were recovered, no further work was recommended at this site. In 2009, ACI Consulting revisited the site. Although no surface or subsurface cultural material was observed (Thornton and Freeman 2010), ACI Consulting and the THC recommended

long term monitoring for archaeological materials. The current project area crosses the portion of site 41BX52 extensively tested in 1979 and 1980 by Collins et al. (2003).

Site 41BX1064 was originally documented in 2008 as a part of the North Loop 1604 Improvements project (Thompson et al. 2008). It is a Prehistoric midden site that was mostly destroyed by mechanical clearing. Because the site was located outside of the APE for this project, it was not fully investigated (Thompson et al. 2008). The site was recommended as potentially eligible as a State Antiquities Landmark (SAL) and for listing to the National Register of Historic Places (NRHP; Thompson et al. 2008:38). In 2009, ACI Consulting revisited the site and found it disturbed. Surface artifacts were noted (Thornton and Freeman 2010). Because BX1064 is outside the current project area, a revisit was not necessary.

Located to the south along Leon Creek, site 41BX47 was sampled using Gradall trenches (Tennis 1996). Eighty-four burned rock features were located at various depths. Artifacts and a single radiocarbon date confirm that the site has evidence of use spanning much of the Archaic, and into the Paleoindian period. As with site 41BX1064, this site was outside of the project area and was not revisited on the current survey.

Chapter 3: Field and Laboratory Methods

CAR conducted a 100 percent pedestrian survey with shovel testing along the proposed trail for the Greenway extension at Leon Creek. During archaeological investigations, eight shovel tests were excavated along the proposed trail. This survey was conducted according to the Texas Historical Commission (THC) guidelines as a linear survey with a corridor < 30 m wide. This chapter outlines the field and laboratory methods followed during the archaeological investigations.

Field Methods

Based on the 1 km linear survey area, excavation required to fulfill the THC minimum survey standards is 11 shovel tests at a density of 16 shovel tests per 1.6 km. Shovel tests were excavated every 90 m along the trail corridor. However, due to mechanical disturbance from the construction of Loop 1604 and to the trail's placement next to Leon Creek, the CAR was only able to complete eight shovel tests to assess the 1 km trail. Shovel tests were 30 cm in diameter, and when possible, extended to a depth of 60 cm below the surface (cmbs). They were excavated in 10-cm increments, and all soil from each level was screened through ¼-inch hardware cloth. A soil sample was collected from each level. All encountered artifacts were recovered with appropriate provenience for laboratory processing, analysis, and curation. A shovel test form was completed for every excavated shovel test. Data collected from each shovel test included the final excavation depth, a tally of all materials recovered from each 10-cm level, and a brief soil description (texture, consistency, Munsell color, inclusions). The location of every shovel test was recorded with a Trimble Geo XT GPS unit. Shovel test locations were sketched onto aerial photographs as a backup to GPS provenience information. Any additional observations considered pertinent were included as comments on the standard shovel test excavation form. Positive shovel tests were units that contained cultural material at least 50 years old.

Disturbances associated with the trail construction would be limited, and would not exceed the shovel test depth. Nevertheless, given the terrace setting and the potential for buried deposits along the creek, we had explored the possibility of backhoe trench excavation. However, the undisturbed portions of the trail were located in areas that lacked deeper sediment. Consequently, no backhoe trenches were excavated on this project.

Laboratory Methods

No artifacts were recovered from the survey. All records obtained and/or generated during the project were prepared in accordance with 36 CFR 79, and THC requirements for State Held-in-Trust collections. Digital photographs were printed on acid-free paper and labeled with archivally appropriate materials and placed

in archival-quality sleeves. All field forms were completed with pencil. Field notes, forms, photographs, and drawings were printed on acid-free paper and placed in archival folders. A copy of the survey report and all computer disks pertaining to the investigations were stored in an archival box and curated with the field notes and documents. Following laboratory processing and analysis, and in consultation with THC, all sediment samples were discarded. This discard was in conformance with THC guidelines. Upon completion of the project, all records were permanently curated at the CAR facility.

Chapter 4: Survey Results

During May of 2014, the CAR conducted a pedestrian survey with shovel testing of a proposed trail corridor for the Greenway extensions at Leon Creek, located in northwest San Antonio, Bexar County, Texas. The field work resulted in the excavation of eight shovel tests (STs) along the proposed trail. Figure 4-1 depicts the project area and the locations of the excavated shovel tests. This section will summarize the shovel testing efforts that were undertaken in the project area. The terminal depth of shovel tests and recorded cultural material are presented in Table 4-1. The only cultural material, modern pieces of glass and a single bullet casing, encountered was from ST 8. No new archaeological sites were discovered during this project.

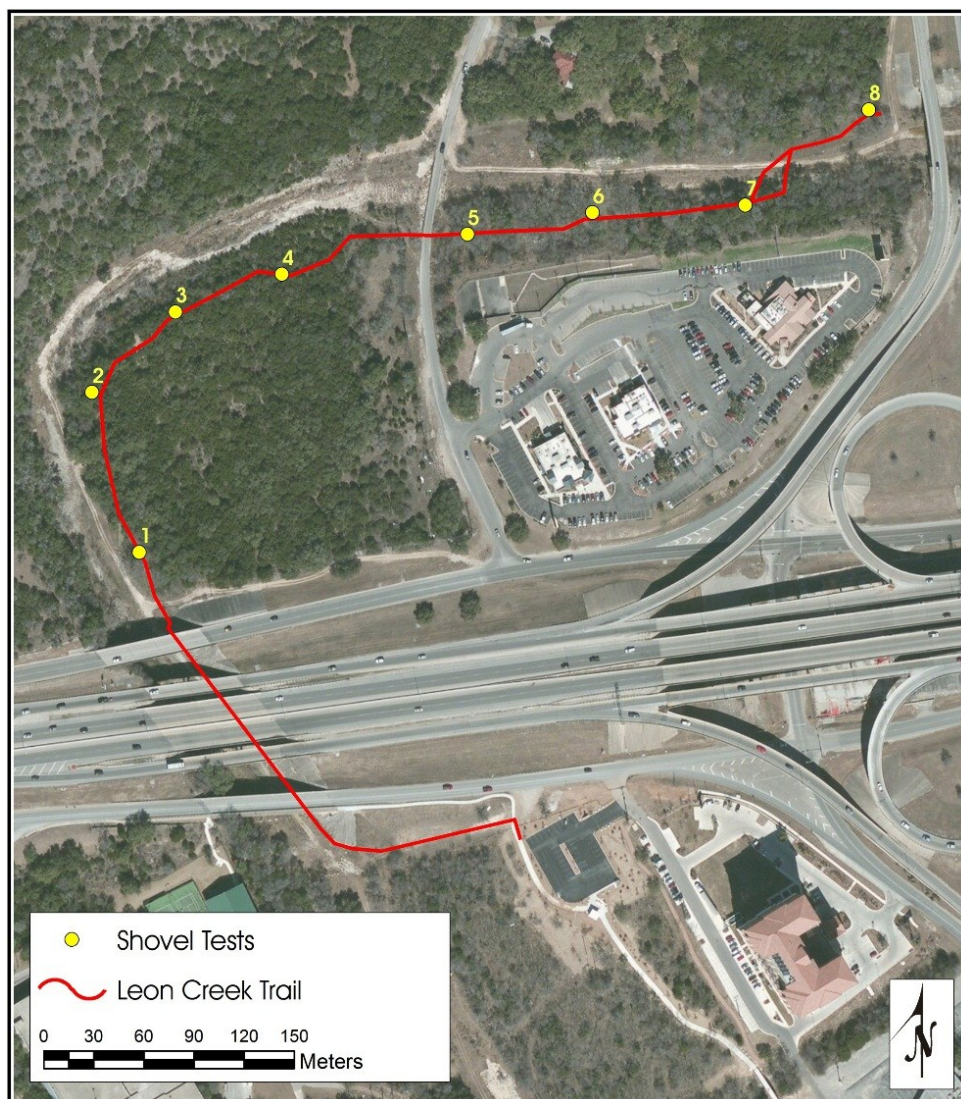


Figure 4-1. *Shovel Test excavations along proposed trail corridor.*

Table 4-1. Results from Shovel Test Excavations

ST	Terminal Depth (cmbs)	Reason for Termination	Cultural Material
1	60	end of shovel test	none
2	60	end of shovel test	none
3	40	gravel	none
4	18	gravel	none
5	60	end of shovel test	none
6	60	end of shovel test	none
7	23	bedrock	none
8	60	end of shovel test	glass (10-20 cmbs); glass, bullet casing (20-30 cmbs); glass (50-60 cmbs)

Four shovel tests (STs 1-4) were excavated west of Fredericksburg Road, and four (STs 5-8) were excavated to its east (see Figure 4-1). Shovel tests were placed approximately 90 m apart. Because the proposed trail runs along the previously investigated areas at the Pavo Real site (41BX52) and along Leon Creek underneath Loop 1604, no shovel tests were excavated in these areas (Figures 4-3, 4-4, and 4-5). Shovel Tests 3 and 4 were terminated before they reached 60 cmbs due to heavy gravel (Figure 4-6). Exposed bedrock was evident in this area where an informal trail already existed (Figure 4-7). As seen in Figure 4-7, vegetation in this part of the project area consisted of mostly cedar, and ground visibility was 50-60 percent. Soils in STs 1-4 consisted of a light brownish (10YR 6/2) silty loam to a grayish brown (10YR 4/2) sandy clay loam with gravel 5-30 mm in size. No cultural material was noted in this portion of the trail corridor.



Figure 4-2. *Fredricksburg Road cuts across the proposed trail extension.*

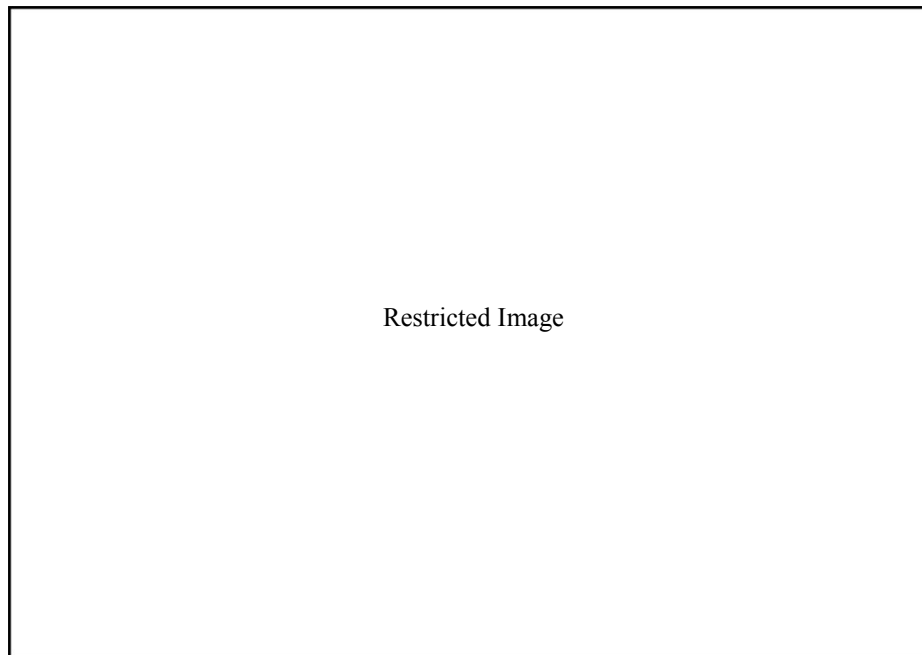


Figure 4-3. *Southern portion of proposed trail (red) overlain on aerial depicting previous excavations (orange) and site boundaries (yellow) for 41BX52. Base map and boundaries from Figueroa and Frederick (2008:7).*



Figure 4-4. *Trail corridor in creek bed south of Loop 1604.*



Figure 4-5. *Trail extension running underneath Loop 1604 and directly next to Leon Creek, facing south.*



Figure 4-6. *Shovel Test 3, note the large quantities of of gravel in soil.*



Figure 4-7. *Exposed bedrock along western portion of project area.*

Shovel Tests 5 and 6 were excavated to the east of Fredericksburg Road along the south bank of Leon Creek (Figure 4-8). The area contained high grasses with zero percent ground visibility. Shovel Test 7 was terminated at 23 cmbs due to bedrock. Shovel Test 8, placed to the west of IH-10 and two, two-track roads (Figure 4-9), contained glass in Levels 2 (10-20 cmbs), 3 (20-30 cmbs), and 6 (50-60 cmbs), and a bullet shell casing in Level 3 (20-30 cmbs). This material was not collected but was noted on shovel test forms. Soils in this area consisted of a pale brown (10YR 6/3) silty loam to a very dark gray (10YR 3/2) clay loam.



Figure 4-8. *Excavation of Shovel Test 5 with crew members Colt Dresser (right) and Alex McBride (left).*

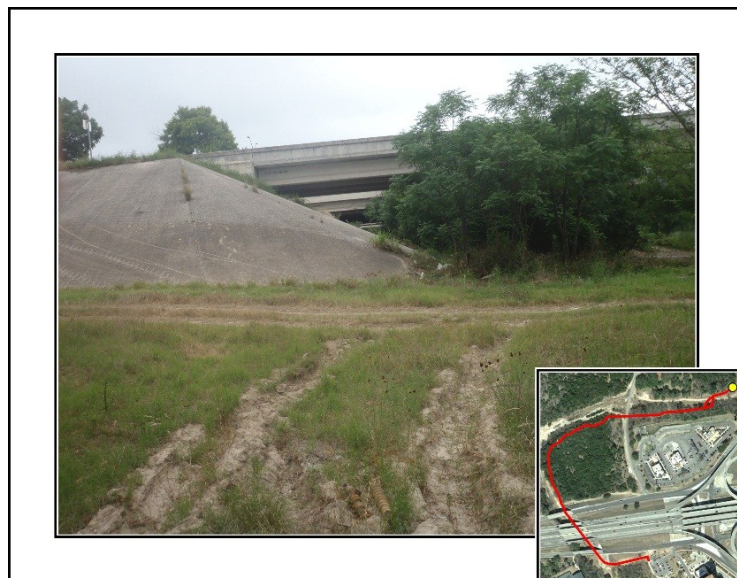


Figure 4-9. *Two, two-track roads and IH-10 access road on eastern end of project area.*

Chapter 5: Summary and Recommendations

On May 12, 2014, archaeologists from the Center for Archaeological Research (CAR) at The University of Texas at San Antonio (UTSA) conducted a 100 percent pedestrian archaeological survey with shovel testing of a 1 km extension of the Leon Creek Greenway in advance of the construction of the proposed trail. The principal goal of the survey was to identify and document all prehistoric and/or historic archaeological sites that may be impacted by the proposed park trail. Eight shovel tests were excavated along the proposed trail extension. No temporally diagnostic artifacts, features, or new sites were identified during the course of this survey.

The only cultural material encountered consisted of modern glass and a bullet casing just west of IH-10, on the eastern end of the project area. No shovel tests were conducted on the south side of Loop 1604 near the Pavo Real site (41BX52). The site has already been thoroughly explored and excavated since its discovery in 1970 (Collins et al. 2003; Figueroa and Frederick 2008, Thornton and Freeman 2010). Therefore, the CAR does not recommend any further testing and suggests the construction of the trail extension proceed as planned. The Texas Historical Commission and the COSA Office of Historic Preservation agreed with this recommendation.

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