Sec. 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties. The Federal Highway Administration delegated most of their responsibility for Section 106 compliance to TxDOT.

TxDOT’s Cultural Resources Management (CRM) Section conducts these reviews on behalf of 25 TxDOT Districts around the state. The CRM section is comprised of the Archeological Studies and Historical Studies Branches.

TxDOT works under a programmatic agreement with the Advisory Council on Historic Preservation, the Federal Highway Administration and the Texas State Historic Preservation Office (SHPO) regarding the implementation of transportation undertakings. This agreement allows TxDOT to efficiently meet the Sec. 106 requirements for many simple projects that have a low risk for impacts to cultural resources.
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TEXAS’ CULTURAL ENVIRONMENT

In the 1960s, an appreciation of the need to preserve representative aspects of our nation’s history swept across the country. Concern over preserving our built environment culminated when the U.S. Congress approved the National Historic Preservation Act (NHPA) in 1966. The preamble of this act explains its purpose, reading, “To establish a program for the preservation of additional historic properties throughout the nation.”

The Texas Highway Department — now Texas Department of Transportation (TxDOT) — established an archeological studies section just a few short years later in 1970. Guided by the NHPA, TxDOT considers any impact that transportation projects have on Texas’ history, heritage and the cultural environments. It made sense then, as it does now, to investigate just what was in the right of way.

Visit TxDOT’s Archeology Sessions at the 87th Annual Meeting of the Texas Archeology Society

FRIDAY, OCT. 28

4:20 p.m.

The Mitchell Cemetery: Rediscovering Forgotten Heroes of the West — Jon Budd (THEATER)

7–8 p.m.

Rising in the East: the Changing Epicenter of Texas Archeology — Jason Barrett (GRAND BALLROOM)

SATURDAY, OCT. 29

11 a.m.


3:40 p.m.

A Caddo Village on the Verge of the Historic Contact Period: Archeological Data Recovery at A. S. Mann (41AN201) Site in the Upper Neches River Valley, Anderson County — Waldo Troell (TWILIGHT BALLROOM)

POSTER SESSIONS (LOBBY)

SATURDAY, OCT. 29 • 1 – 2 p.m.

- A Method for Characterizing Flint Knapping Stages from Flake Size — Scott Pletka
- Mesquite Wood and Ancient Rainfall: The TxDOT EDXA Project — Kevin Hanselka
2016 PUBLICATIONS

Eligibility Assessment of the Slippery Slope Site (41MS69) in TxDOT Right-of-Way in Mason County, Texas

TxDOT investigated the Slippery Slope Site in response to reports of looting and damage to the site. While TxDOT's excavations sampled only a small portion of this site, the work revealed that the site contained a series of finely-stratified deposits, spanning a period from approximately 4000 BC to perhaps AD 200. The investigations, however, focused on two burned rock features. These two features date to around 4000 BC, a poorly-understood period in Texas prehistory. Detailed analysis of the feature contents produced no definitive evidence regarding their use, as no visible plant remains or bone was preserved. Nevertheless, these investigations are guiding TxDOT's further evaluation of the site and surrounding area in advance of a planned widening of the adjacent roadway. With further investigation, more evidence for the Calf Creek period may yet be uncovered. [Stay tuned for an upcoming field report. TxDOT is looking at another site (41MS78) in Mason County along the Llano River, set to go to data recovery in 2018.]

Archeological Testing of TxDOT Right-of-Way through Site 41BL278, Bell County, Texas

TxDOT excavated at this site in advance of a proposed bridge replacement project and found several buried archeological deposits. Flood deposits from the nearby river buried these deposits at a depth of approximately one meter or more below the modern ground surface. Evidence suggests that several separate episodes of short-term occupation took place at the site ranging in date from around 600 BC to 1500 BC. Archeologists found nine cultural features, including at least one circular, rock-ringed hearth and various types of burned rock discard piles and dumps. A diverse array of material occurs in association with the features, suggesting that the site served as a camp. The site contained chipped and ground stone tools, burned rocks, mussel shells, faunal bone, and organic materials. Ultimately, the project was designed to avoid construction impacts to the site.

Bioarcheological Investigations of Nineteenth-Century African American Burials at the Pioneer Cemetery (41BO202) in Brazoria, Texas

TxDOT discovered 14 unmarked burials in existing right of way. The burials all date from the late AD 1800s and early AD 1900s. While not a representative sample of the population from that time, the burials provide information about the health, lives, and burial practices of this era.

Eligibility Testing at 41AU98 at the Ripple Lane Bridge, Austin County (CSJ: 0913-20-085), Texas

TxDOT evaluated the remains of a historic-age site dating to the late AD 1800s to early AD 1900s. A steam-driven saw mill or cotton gin once occupied the area. The majority of these activities took place during the early AD 1900s, with use of the area as a dump beginning in the AD 1920s.
WHAT WE DO

The TxDOT Archaeology program must balance the consideration of important archaeological resources with the agency’s mission to deliver a safe and reliable transportation system. Each time TxDOT goes into the field, we have to consider the places on the landscape that people liked to settle, what traces their activities might have left and how the landscape and those traces have been changed by modern conditions.

As we review projects under the guide of the National Historic Preservation Act, we work in the spirit of preservation to share stories about Texas’ history.

2016 PROGRAM HIGHLIGHTS

- **341 projects** reviewed and cleared by archeologists
- **5,261 cubic feet of dirt** hand-excavated by TxDOT
- **36 archeological sites** identified or revisited during archeological survey
- **4 technical reports** published as a result of major excavations
ABOUT OUR WORK

The Archeological Studies branch includes 10 archeologists with expertise in various fields of archeology, such as geoarcheology, stone tool analysis, and regional culture history. The range of expertise allows for a thorough and good faith effort to identify, assess and evaluate cultural resources in the state. The level of effort on a project depends on the resource.

No Review Required

Some projects require no archeological review at all, because they have such a small likelihood of affecting sites (e.g., work that occurs on existing paved surfaces) so don’t merit review.

Background Studies

Before archeologists go into the field and investigate, they conduct desktop studies of existing information about such topics as local topography, geology, previously-identified archeological sites, and mapped historic roads and structures. Many times, this information is sufficient to determine that a project will have no effect on archeological sites.

Cemetery Investigations

TxDOT often consults with local cemetery organizations to determine whether unmarked burials might occur outside the boundaries of older cemeteries. TxDOT might also perform a survey to physically inspect a project area.

Surveys

Sometimes a simple walkover of a project area is sufficient, but in many cases, a Survey involves digging systematically across likely parts of the landscape to find buried sites. Archeologists may dig small holes with a shovel or excavate trenches with a machine.

ARCHEOLOGY FACTS AT TxDOT

41% of permitted archeological excavations in Texas are TxDOT projects

125 archeological excavation projects overseen by TxDOT in the past 20 years

1% of projects reviewed by TxDOT archeologists require excavation

26 federally recognized tribes work in consultation with TxDOT
DIGGING INTO 2016: FIELD REPORTS

While only 1 percent of TxDOT projects go to mitigation through data recovery, our work still comprises the largest percentage of archaeology permitted by the Texas Historical Commission. Through the 2015-2016 year, we’ve unearthed 5,261 cubic feet of dirt on several projects to uncover new cultural gems and exciting finds.

CENTRAL TEXAS

Prehistoric Peoples visited Central Texas Site for 2000 years (Coryell County, 41CV286)

As TxDOT prepared to replace a bridge in Coryell County, just south of Fort Hood, archeologists discovered a diverse collection of archeological material. The site is located in an environment rich in food sources, rocks and firewood, all factors needed for the creation of the rock cooking features and their remains that are scattered across the site. Radiocarbon dates of bone remains from deer and charcoal established several periods when people were visiting and using the site over a range of 1,400 years between 400 BC and 1,000 AD.

This range of dates is also supported in part by the estimated age projectile stone tools from the site, and more accurately by the radiocarbon dates. Samples of the debris made during stone-tool making process determined that the recovered materials were intermixed. However, the composition of the debris, the material and size, were examined for patterns which suggests stone points and knives were made at the site from locally gathered stone.

Large roasting ovens were used for the long roasting needed to cook lechuguilla and sotol. The size of these “appliances” or earth ovens varied. Variation in these features suggests a number of foods were being cooked, and the features may have been used by groups ranging in size from small families to larger groups.

Severe weather resulted in the site flooding and being inundated and further excavations were halted. However, sites like this are important resources and ultimately our gateways to looking into the past. As more sites are investigated and more data collected more precise answers can be given to what are now broad and general questions about the Texas past.

A Short (500-Year) Stop at Comanche Creek

Excavations in Mason County have revealed an ancient Native American hunting encampment specializing in bison and deer procurement. The site’s cultural deposits allow for a rare opportunity to understand the hunting behavior of people living in the area between 100 BC and AD 400. The chert flakes and animal bones reflect a series of brief occupations targeting bison and deer within this relatively short, 500-year period. The chert stone flakes consists predominately of smaller flakes that are characteristic of short term stone spear point and stone knife sharpening and not stone spear point and stone knife manufacturing that are characteristic of long term occupation sites.

The Bounty at Big Hole Site—Travis County

During the environmental assessment of SH 130 Toll Road in Travis County, TxDOT discovered the Big Hole Site near Onion Creek. Prehistoric flint flakes, spear points, animal bones, plant remains, and fire hearths were discovered ap-
proximately 8 to 10 feet below the current ground surface and date from 3,500 to 3,300 BC. The radiocarbon dates and artifacts place the occupation of the site during the Calf Creek and earlier Martindale periods. Like the Slippery Slope site, TxDOT’s work at this site contributes to our knowledge of these poorly represented periods.

This site possessed some of the first, complete, preserved collections of animal remains that can be clearly associated with ancient hunters from the Calf Creek and Martindale periods. But instead of bison bones, a wide range of smaller animals were hunted including deer, pronghorn antelope, rabbits, and fish.

The breadth of food types represented has led archaeologists to conclude that the hunters were gathering food from nearly every possible source. Perhaps people adopted this strategy in response to a hot, harsh, dry environment, much warmer than it is today.

One discovery shows how the German community got rid of trash: Archeologists discovered several upside-down bottles in buried in the ground outside of house foundations and learned that bottles were used by the Germans as lawn ornaments. Archeologists also excavated an AD 1800s rainwater cistern in collaboration with the Houston Archaeological Society, a brick sidewalk, several glass bottles and more.

NORTH TEXAS

Mitchell Cemetery: The Oldest Pioneer Cemetery in Fort Worth

Just northwest of Fort Worth in Tarrant County, TxDOT archeologists worked with the Tarrant County Historical Commission to research one of the oldest pioneer cemeteries in the county. TxDOT undertook this investigation to evaluate the potential of a couple nearby projects to affect it.

Mitchell Cemetery resides in a rare, undeveloped area in the urban setting of Fort Worth, bordered by two active railroad tracks. The cemetery was used until the early AD 1900s but has been since abandoned. Except for the presence of two grave stones, there are no obvious outward signs of a cemetery being present; nearly all of the grave markers have been carried off.

The work done so far has refined our understanding of the cemetery boundaries. Further investigations are not
The first documented burial in the Mitchell Cemetery was in 1851 and involved the 11-month-old William York, son of John B. York, patriarch of one of the first families in the area. York later became Tarrant County Sheriff, was shot to death, and buried next to his son in August 1861. Seaborne Gilmore, Tarrant County’s first elected Judge and Mexican War Veteran was buried next to his wife in this cemetery in December, 1867.

Currently planned, as the proposed transportation projects in the vicinity will not affect it.

**EAST TEXAS**

*Archeological Data Recovery at A.S. Mann (41AN201) Site in the Upper Neches River Valley, Anderson County*

In advance of the planned highway project, TxDOT Archeology relocated a Caddo site that was first recorded about 80 years earlier and then lost to archeologists. Under contract to TxDOT, Coastal Environments, Inc., conducted archeological data recovery to mitigate the A. S. Mann Site, within the highway right of way between May 2015 and July 2016. Preliminarily, the site appears to represent a portion of a village that was occupied by high status families associated with a much larger Caddo Community. The main occupation appears to date to the late portion of the Frankston Phase (AD 1480–1650) and into the early Allen Phase (AD 1650–1680).

The investigations reveal evidence of extensive prehistoric trade networks and potential early contact and conflict with Europeans. The investigators also found large numbers of ceramic vessels and stone tools, many of which appear to be ceremonial in function.

**WEST TEXAS**

*Firecracker and Twelve Room House Pueblos*

In 2016, TxDOT began more intensive investigations in El Paso where several known archeological sites are located. A highway corridor project passes within the boundaries of Firecracker Pueblo, which is a designated State Archeological Landmark and recommended eligible for listing in the National Register of Historic Places (NRHP). Previous investigations at Firecracker revealed a 15- to 17-room pueblo room block, multiple pithouses, storage pits, and burials. These features were excavated in the 1970s and 80s, but there may yet be undiscovered features on the site worthy of investigation. Twelve Room House Pueblo Ruin, located on the south end of the project on Fort Bliss, is also recommended as NRHP eligible. Discovered in 1936, previous investigators excavated an adobe pueblo room block just outside the present corridor and associated artifact scatters.

*Three Dog Site*

In 1972 the Interstate Highway (IH) 10 project drove a series of key archeological studies across West-Central and West Texas under the direction of Dr. Frank Weir of the State Department of Highways and Public Transportation, now the Texas Department of Transportation (TxDOT). This work resulted in major excavations on the Three Dog Site, a pair of burned rock middens and numerous smaller hearths containing a diverse array of artifacts. This site is located on a rise above the east bank of Howard Draw, in Crockett County about 13 miles west of Ozona.
Since the original reporting has not been completed, TxDOT is continuing these investigations and drafting a final report, which will include original field documentation (e.g., field notes, unit forms, maps, sketches, photographs, slides, photo logs, and artifact/sample lists). The goals are to more securely ascertain when these sites were inhabited; explore the range of activities performed on these sites; clarify the local indigenous hunter-gatherer economy; and enhance knowledge of prehistoric cultures in this little-known part of Texas.

**ALTERNATIVE MITIGATION**

**Zapata County Site**

When TxDOT archeologists found themselves unable to complete a cultural resource survey of their project area in Zapata, Texas because of severe and sustained flooding across the Veleño Arm of the Falcon Reservoir, they were able to meet their review obligations using alternative mitigation.

An alternative site in Zapata County was chosen because of its unique research value as a shallow buried Archaic site where discrete episodes of stone tool manufacture may have occurred. Archeologists recovered approximately 1100 pieces of chipped stone debitage and two discarded triangular points consistent with the Tortugas type, which date to approximately 1200 BC to 1 AD.

Beyond the investigations, the project includes a second research component focusing on a comparative analysis of triangular bifaces and chipped stone flaking debris recovered at previously excavated, comparably-aged sites in the region, and is being undertaken with assistance from the curation staff at the Texas Archeological Research Laboratory.

A final component comprises an experimental study of chipped stone technology in the region and includes the replication of triangular bifaces similar to those observed at the site. Data generated in the study will be used to characterize aspects of technological organization within the region’s ancient stone tool industry and will be used to assess variabilities in resource use and labor expenditure exhibited in archeologically-identified biface production features across the Rio Grande Plains Region.

By exploring the creative research opportunities made available through alternative mitigation, TxDOT archeologists are making a valuable contribution in providing a better understanding of how prehistoric peoples in south Texas organized their stone technologies from raw material acquisition, to production, use-history and finally how they discarded them.

**Mission Socorro**

Major construction in El Paso at Border Highway West and Spur 66 would have required a large amount of archeological investigations associated with possible impacts to cultural deposits associated with Old Fort Bliss as well as some other industrial archeological sites.

TxDOT and the Texas Historical Commission came up with a solution to purchase land at an alternative archeological site: Mission Socorro. This important archeological site had been in private ownership until TxDOT and THC found a long-term preservation solution that included community support and involvement. After TxDOT acquired the Mission Socorro property, it transferred this land to THC.

**Alternative mitigation** is one tool available to archeologists working on behalf of state and federal agencies that can be used when the implementation of normal review becomes infeasible.

This strategy allows a transportation project to move forward and remain compliant with Federal and State regulatory obligations, while also affording the opportunity to explore creative research and preservation opportunities beyond what might be accomplished from the excavation of affected archeological sites.
TOOLS FOR RESEARCH, TECHNOLOGY AND INNOVATION

As TxDOT strives to be one of the leading agencies in the nation working on cultural resources management, the increased use of tools like statistical analysis, geomorphology, remote sensing and geographic information systems (GIS) are changing the way TxDOT’s cultural resource professionals find, identify, analyze, and evaluate resources.

PLANNING AHEAD FOR CULTURAL RESOURCES

TxDOT develops various protocols designed to standardize archeological data from testing and data recovery projects.

An important category of these tools, Potential Archeological Liability Maps (PALMs), address the potential for prehistoric archeological sites.

Benefits of using the PALMs:

- Identify areas with high and low risk of archeological sites.
- Evaluate the preservation potential of the landscape.
- Quantify and compare the potential impact of corridors and alignments.

Initial models are based on geoarcheological principals (integrity potential). More recent models, termed hybrid PALMS or HPALMS, supplement integrity-based modeling with behaviorally-based approaches that predict places on the landscape where people are likely to have settled.

RISK VS. RIGHT-OF-WAY?

Projects do not all have the same potential to affect archeological sites since the likelihood of encountering archeological sites in good condition varies based on several factors.

TxDOT is undertaking a more rigorous evaluation of the likelihood that a project area requires further evaluation based on the amount of new right-of-way (ROW) proposed for the project. For this evaluation, TxDOT developed a statistical model, showing the likelihood that a project requires a field investigation based on the amount of proposed new ROW.

Of particular note is the very low probability that a project without proposed new right of way is recommended for additional investigation. This study thus supports the claim that projects occurring entirely within existing right of way do not contain well-preserved sites and so do not warrant further work.

TxDOT is continuing to study this issue, incorporating more projects and a larger number of variables in the model. We plan to use the results of this study to inform recommendations for a programmatic approach to evaluating and treating certain types of projects.

PALEONTOLOGICAL REMAINS

Federal law requires consideration of project effects on environmental resources, which can include paleontological remains. TxDOT is working conceptually on a paleontological predictive model to serve as a planning tool to identify the potential likelihood for important paleontological remains within a project’s area of potential effect.

The model would include simple GIS layer associating the regions where a geologic formation is visible or outcrops at the surface and the possible paleontological remains that may be encountered.
MEANINGFUL COLLABORATION AND EARLY COORDINATION WITH TRIBES

Through a partnership with TxDOT Archeology and the THC, TxDOT now provides tribes access to certain data from the Texas Archeological Sites Atlas (Atlas). The TxDOT Early Tribal Coordination Tool is an online tool that layers TxDOT projects with archeological sites so that tribes can participate early in the transportation planning process.

TxDOT consults with 26 federally recognized tribes. Each tribe will receive unique log-in information to the Early Tribal Coordination Tool. The Tool contains maps with project information and archeological site data that is unique to each tribe, based on the tribe’s Areas of Interest in Texas.

PLANNING AROUND CEMETERIES

TxDOT archeological studies program aims to identify cemeteries that are in project areas well in advance of environmental reviews in order to avoid potential impacts. TxDOT is mapping the location of cemeteries within 500 meters of more than 5000 construction projects in the agency’s database.

The end result should provide TxDOT archeologists with early warning that additional archeological investigations are needed before project construction.

Can modern day mesquite wood tell us more about how humans fared thousands of years ago?

The natural environment is a backdrop against which human behavior is performed. History and anthropology demonstrate the strong influence the environment has on human ways of life, so an understanding of past environmental conditions is crucial to understanding ancient cultures.

In an experimental study, TxDOT archeologist Dr. Kevin Hanselka explores how the effects of modern rainfall on mesquite wood anatomy across Texas can be used to clarify ancient climates and contribute to interpretations of the archeological record. The goal of Dr. Hanselka’s research is to build a baseline for interpreting ancient or prehistoric rainfall in Texas using archeological mesquite wood charcoal, which would give a glimpse of what environmental conditions might have been like in prehistoric times.

“Estimating the general rainfall pattern in effect when a site was occupied helps us interpret other aspects of the archeological record, such as availability of edible plants and animals, presence or absence of agriculture, group movement and settlement, and possibly evidence of social strain or conflict,” Hanselka said. “Insights like these give us perspective on how prehistoric Texans adapted to the natural environment.”
PARTNERSHIPS AND OUTREACH

Public participation is the cornerstone of effective government and we know that Texans value the places that reflect a community’s history. Through the cultural resource management process, TxDOT consults with the Texas Historical Commission, communities and tribes to determine how to manage any sites that could be impacted by projects.

Visit www.txdot.gov (Keyword search: “archeology”) to get involved in the historical preservation process with TxDOT.

THANK YOU TO OUR PARTNERS!

Center for Archaeological Research (CAR)
Center for Archaeological Studies
Federally Recognized Tribes
Houston Archeological Society
Houston Museum of Natural Science
Stephen F. Austin University/Texas State University
and
Index of Texas Archaeology
Texas Archeological Society (TAS) and TAS Field School
Texas Archeological Research Laboratory
Texas Beyond History
Texas Historical Commission
Texas Military Department
TEXAS ARCHAEOLOGICAL SOCIETY FIELD SCHOOL

Dating back to 1962, the Texas Archeological Society’s Field School is an annual celebration of the State’s rich heritage. The TAS Field School is one of the longest-running and largest such gatherings in the country. Each year, professional and amateur archeologists make up the hundreds of volunteers that come together from all across the State to excavate important new sites.

For the past three years (2014–2016), TxDOT played a major role directing and leading the Field School in order to engage and work hand-in-hand with the public and professional archeological community. It is one of the many inspiring archeological projects in which the agency is engaged across the State.

In 2016, the Field School took place at Cotton Field, Colorado County’s first intensively excavated archeological site. Its rich deposits exhibit multiple, well-preserved living surfaces within both the Austin (ca. AD 650–1150) and Toyah (ca. AD 1100–1500) phases of Texas’ Late Prehistoric period, making it one of the best stratified sites in the state covering that period. More than 20 cooking features, animal butchering (primarily bison and deer), and hide processing features have been identified at the site to date.