Summary Report on Archeological Investigations Supporting the City of Austin's Exhumed Burial Reinterment Effort at Oakwood Cemetery Chapel

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Written on behalf of:

Weston Solutions, Inc.
and
The City of Austin

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SUMMARY REPORT ON ARCHEOLOGICAL INVESTIGATIONS SUPPORTING THE CITY OF AUSTIN'S EXHUMED BURIAL REINTERMENT EFFORT AT OAKWOOD CEMETERY CHAPEL

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Prepared for

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ABSTRACT

This report summarizes AmaTerra Environmental, Inc.'s archeological monitoring and public outreach activities related to the City of Austin's successful reinterment of 36 human burials outside of the Oakwood Cemetery Chapel in downtown Austin, Travis County, Texas. The disinterred people were likely members of the Austin's minority and indigent population from approximately 1840 to 1914. The remains had been exhumed in 2017 – prior to AmaTerra's involvement – beneath the chapel structure and immediately surrounding it during the City's chapel renovation project and temporarily housed at the Forensic Anthropology Center at Texas State University (FACTS). On November 16, 2021, AmaTerra archeologists, working under Antiquities Permit 9602 (Aaron Norment, Principal Investigator), monitored the excavation of two reinterment trench alternatives in an area immediately west of the chapel. The first trench alternative (Trench 1) was abandoned when monitors observed an unmarked and previously unrecorded grave shaft. Though the monitors observed another unmarked and previously unrecorded grave shaft in the second trench alternative (Trench 2), the monitors, in consultation with the City's Cemetery Operations Division staff, concluded there was sufficient space in the remainder of the trench to reinter the remains. The following day (November 17, 2021), AmaTerra staff retrieved the exhumed remains from FACTS and monitored as Cemetery Operations staff reinterred them in Trench 2. The Principal Investigator concludes that no significant archeological resources - most notably human remains or burials - were impacted during the archeological investigations or the reinterment effort. With all exhumed remains reburied and no additional materials exposed, the Principal Investigator recommends that the City has completed its project-related obligations under the Antiquities Code of Texas (ACT) and no further archeological fieldwork or coordination is necessary. AmaTerra's investigations strictly adhered to the Texas Health and Safety Code (Title 13, Subchapter C, Chapter 711.036[a]) and the Texas Administrative Code Title 13, Part, 2 Chapter 22.5. The project did not include any federal involvement and therefore was not subject to federal cultural resource regulation. All project related notes, records, and photographs will be curated at the Center for Archaeological Studies (CAS) at Texas State University.

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CHAPTER 1: INTRODUCTION AND PROJECT DESCRIPTION

In 2008, the City of Austin's (COA's) Parks and Recreation Department (PARD) conducted a structural engineering assessment of a 1914 mortuary chapel building at the City's Oakwood Cemetery in central Austin, Travis County, Texas (**Figure 1** and **Figure 2**). The engineering study identified numerous issues, and to ensure structural integrity and enhance the building's utility to the cemetery, PARD developed a plan to rehabilitate the chapel. Because the planned modifications had potential to affect any unknown burials, should such be present, PARD contracted an archeological consulting firm to monitor the construction activities. Beginning in 2016, archeologists discovered 59 unanticipated, unmarked burials in various locations beneath the chapel's walls and floor and in non-structural areas immediately surrounding the chapel (Burials 1 – 47 and Burial Stains 1 – 12). Later research suggested that these 59 individuals died in the late nineteenth to early twentieth century and had been buried with no markers or with markers that decayed away (Haefner et al. 2020).

The COA modified the planned improvements to the chapel to minimize impacts to the graves. Twenty-two of the graves were in locations such that they would not be impacted by the proposed improvements, and were left in place (Burials 3, 5, 29, and 41 – 47); burials associated with Burial Stains 1 – 12 were never physically impacted during construction. Engineers could not redesign the planned improvements to avoid the remaining 37 burials. Working under Texas Antiquities Permit No. 7709, Hicks & Company archeologists manually exhumed those 37 burials (Burials 1, 2, 4, 6 – 28, 30 – 40; Haefner et al. 2020). One of the burials (Burial 2) upon being exhumed was determined to be "negative" with no physical remains. The exhumed human remains and associated artifacts from the remaining burials were then transferred to the Forensic Anthropology Center at Texas State University (FACTS) in San Marcos, Texas, for forensic anthropological analysis and reporting (Spradley et al. 2020) and temporary storage until they could be reinterred.

PARD's reinterment plan called for the remains and associated artifacts to be placed into purpose-built wooden reinterment boxes and transferred from FACTS back to the Oakwood Cemetery for reinterment in an undisturbed location close to the chapel. The reinterment plan was developed in consultation with the Texas Historical Commission (THC) and with interested stakeholders and descendent communities potentially associated with the individuals that were disinterred (Haefner et al. 2020; PARD 2021). All parties agreed that reinterment on site as close to Oakwood Chapel as possible was the preferred reinterment option. If that option was not feasible, the alternate plan was to reinter the remains at Austin Memorial Park Cemetery.

Anthropologists and archeologists realized that the Oakwood Chapel exhumations presented a rare opportunity to study genetic and chemical data from marginalized communities in the post-colonial American South. Before the reinterment began in earnest, researchers from the University of Connecticut's Ancient DNA Laboratory (UConn) partnered with PARD to study the Deoxyribonucleic Acid (DNA) and chemical isotopes from the disinterred individuals' bone and teeth. The analysts hope the study will shed new light on the individuals' genetic ancestry, diet and lifestyle, stress and trauma history, and relatedness to the modern community. UConn and University of Texas at Austin anthropologists collected small samples of the organic material and processed them, and then returned the remains (including the sample material) to FACTS to be reinterred. The DNA analysis is on-going at UConn at this time with no formal completion date projected.

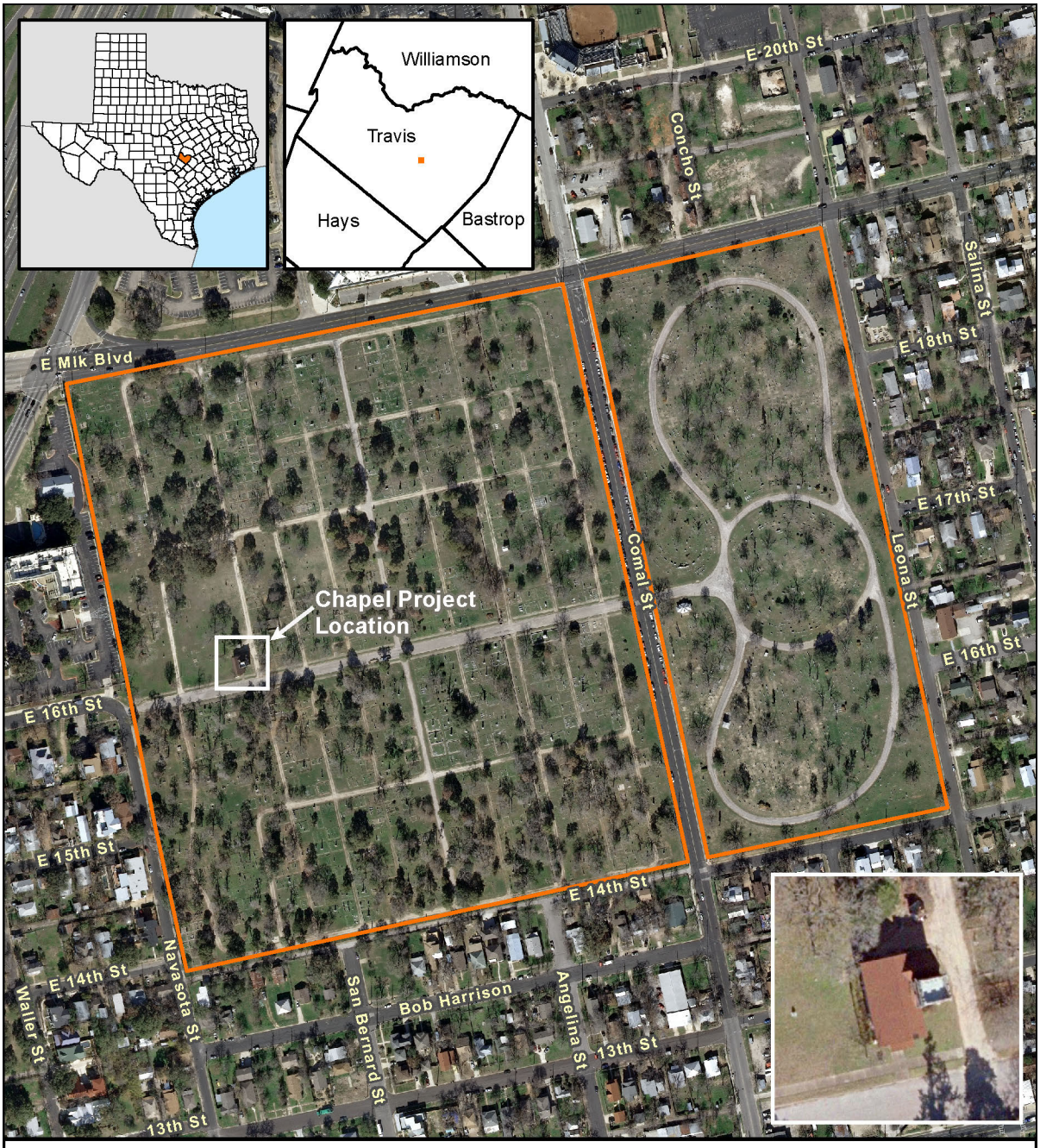

Figure 1. Oakwood Cemetery Chapel Project Location (aerial base).

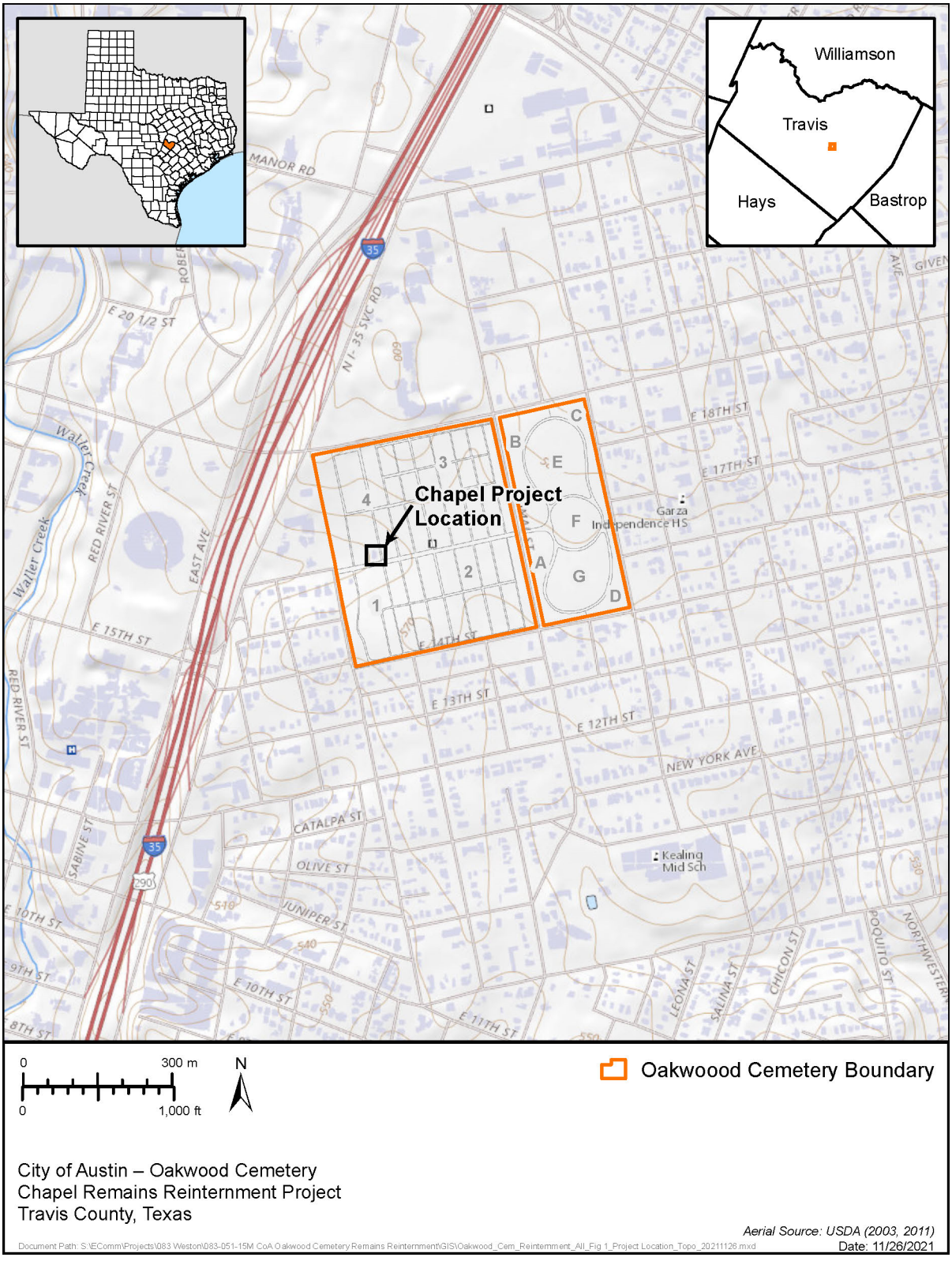

Figure 2. Oakwood Cemetery Chapel Project Location (Austin East USGS 7.5' topographic quadrangle base).

Under the current project, AmaTerra Environmental, Inc. (AmaTerra) assisted PARD in identifying a suitable location for the reinterment just outside of the Oakwood Chapel structure. AmaTerra archeologists monitored mechanical scraping in the location specified by PARD to ensure that the exhumed remains and associated artifacts could be reinterred without impacting any additional unknown human burials that might be present within the proposed reinterment area. AmaTerra also helped transfer the reinterment boxes from FACTS to their final reinterment location at the Oakwood Cemetery. In addition, AmaTerra worked with PARD staff on several public outreach and engagement initiatives associated with the reinterment, including a two-day online symposium and an interactive website.

Management and Regulatory Summary

The archeological investigations and the reinterment effort were subject to state-level archeological resource regulatory oversight outlined in the Antiquities Code of Texas (ACT) because Oakwood Cemetery is owned by the City of Austin, a political subdivision of the State of Texas. All fieldwork was conducted under Antiquities Permit 9602. Additionally, this project involved the reinterment of human remains and grave goods. Fieldwork itself also had the potential to expose and/or disturb additional human burials. Accordingly, archeologists on the project complied with cemetery and human-burial-related regulation under the Texas Health and Safety Code (Title 13, Subchapter C, Chapter 711.036[a]). The project did not include any federal funding, permitting, or other involvement and therefore was not subject to federal cultural resource regulation.

All previously disinterred burials were reinterred on site. Two previously unrecorded grave shafts were documented in the archeological trenches but neither burial (nor their associated human remains) were disturbed during the field investigations or subsequent reinterment.

Administrative Matters

AmaTerra worked on this project as a subconsultant to Weston Solutions, Inc. (WESTON®) through their Environmental Services Rotation List contract with the City's Public Works Department. All fieldwork took place during the week of November 15, 2021: study area prep (11/15); archeological scraping (11/16); and remains reinterment and site cleanup (11/17). AmaTerra staff worked 39 person-hours during all phases of archeological fieldwork (including site preparation). The Principal Investigator, Aaron Norment, was on site for the entirety of the archeological scraping effort. Mason Miller was AmaTerra's Project Manager and the lead project coordinator. Dr. W. Nicholas Trierweiler was the Project Archeologist during the scraping and was the primary report author. Mason Miller and Dr. Katherine Seikel oversaw the remains transfer from FACTS to reinterment at the Oakwood Chapel site.

This report's authors intend to focus their discussion on the phases of the project in which they were directly involved: 1) the reinterment investigations and reinterment; and 2) the associated public outreach. Haefner et al. (2020) and Spradley et al. (2020) have extensively researched and documented the history of the chapel investigations and the historical and anthropological data the exhumed burials provide. The reader is encouraged to consult these reports for a detailed and exhaustive analysis.

In the chapters that follow, this report includes discussions of the project area's environmental and cultural/historical contexts (Chapters 2 and 3, respectively), and Oakwood Cemetery and Chapel, including a summary of the grave exhumation project (Chapter 4). Though AmaTerra has not had any involvement with UConn's DNA analysis, the reader can get a general overview of the researchers' goals and processes in Chapter 5. Following these context-building chapters, the report details the archeological scraping methodology and findings (Chapter 6) and the subsequent reinterment effort (Chapter 7). The report then describes the City's public outreach and education efforts related to the Oakwood Chapel project (Chapter 8). The report closes with the Principal Investigator's overall

project conclusions and recommendations (Chapter 9). Appendix A includes various regulatory documentation while Appendix B is a copy of the remains inventory and reinterment checklist completed by AmaTerra, FACTS, and PARD staff.

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CHAPTER 2: ENVIRONMENTAL CONTEXT

Austin stands at the border of two major ecoregions of Texas. This boundary line roughly follows the Interstate Highway (IH) 35 corridor. To the west is the Balcones Canyonlands subregion of the Edwards Plateau ecoregion. To the east is the Northern Blackland Prairies subregion of the Texas Blackland Prairies ecoregion (Griffith et al. 2007). Oakwood Cemetery is located just inside the Blackland Prairies portion.

The Austin area consists of level and rolling plains of limestone, chalk, and shale covered by tallgrass vegetation anchored in dark, calcareous soils. Since the late Tertiary, many soils once deposited on the Edwards Plateau have eroded to lower elevations east of the Balcones Escarpment as Blackland Prairie (Black 1989). Within the Blackland Prairie, rich deposits of late Tertiary and Quaternary calcareous clay soils have accumulated. Geographically, the Blackland Prairie is an area of low topographic relief and poor drainage that is prone to frequent flooding (Collins 1995).

Topography

Oakwood Cemetery stands on a relatively flat bluff overlooking the city to the west. A slight ridge bisects the landform with the Waller Creek watershed to the west and Boggy Creek watershed to the east. The highest point is located on the northern property line. The western half of the cemetery forms a gentle bowl sloping from the north and south down toward Main Avenue. The cemetery's lowest point corresponds with the west gate, immediately west of the chapel and project area. The eastern half of the site slopes evenly and is bisected by a tributary to Boggy Creek.

Geology and Soils

The northern portion of Oakwood Cemetery falls within Fluviatile (flood-generated) terrace high gravel deposits. These deposits date to the Pleistocene and are described as upper silty clay (with some gravel exposure) and a lower coarse unit that yields some water and correlates with the Onion Creek Marl. The southern portion of the cemetery consists of Austin Chalk, described as upper cretaceous deposits that are chalky, mostly microgranular calcite with large amounts of calcium carbonate (USGS 2020; **Figure 3**).

Soils within Oakwood Cemetery consist of approximately 75 percent urban land, Austin, and Whitewright soils, and a combination of urban land and Travis soils makes up the remaining 25 percent. Austin soils are described as very dark grayish-brown silty clay to 15 inches (38 centimeters [cm]) over brown silty clay to 36 inches (91 cm) over weathered chalk. Whitewright soils are described as light brownish-gray clay loam to about 5 inches (13 cm) over pale brown clay loam to about 13 inches (33 cm) over soft limestone. Travis soils are composed of gravelly fine sandy loam to about 18 inches (46 cm) over red gravelly sandy clay to 50 inches (1.27 m) over limestone bedrock (USDA-NRCS 2020).

Flora

As a maintained landscape, the vegetation of Oakwood cemetery varies from plant communities that would develop in a more natural context. Early descriptions of the site that would become Oakwood Cemetery characterize the landscape as open grasslands (Griffith et al. 2007). Today, a canopy of both deciduous and evergreen trees covers a substantial portion of the cemetery. As part of the COA's Historic Cemetery Vision Plan development in 2014, PARD sponsored an inventory of the trees in each of its five historic-age cemeteries (AmaTerra et al., 2015: Appendix E). The surveyors recorded 638 trees and shrubs making up 30 species at Oakwood Cemetery. The most common species recorded were post oak (*Quercus stellata*), crape myrtle (*Lagerstroemia indica*), Ashe juniper (*Juniperus ashei*), pecan (*Carya illinoinensis*), and live oak (*Q. virginiana*).

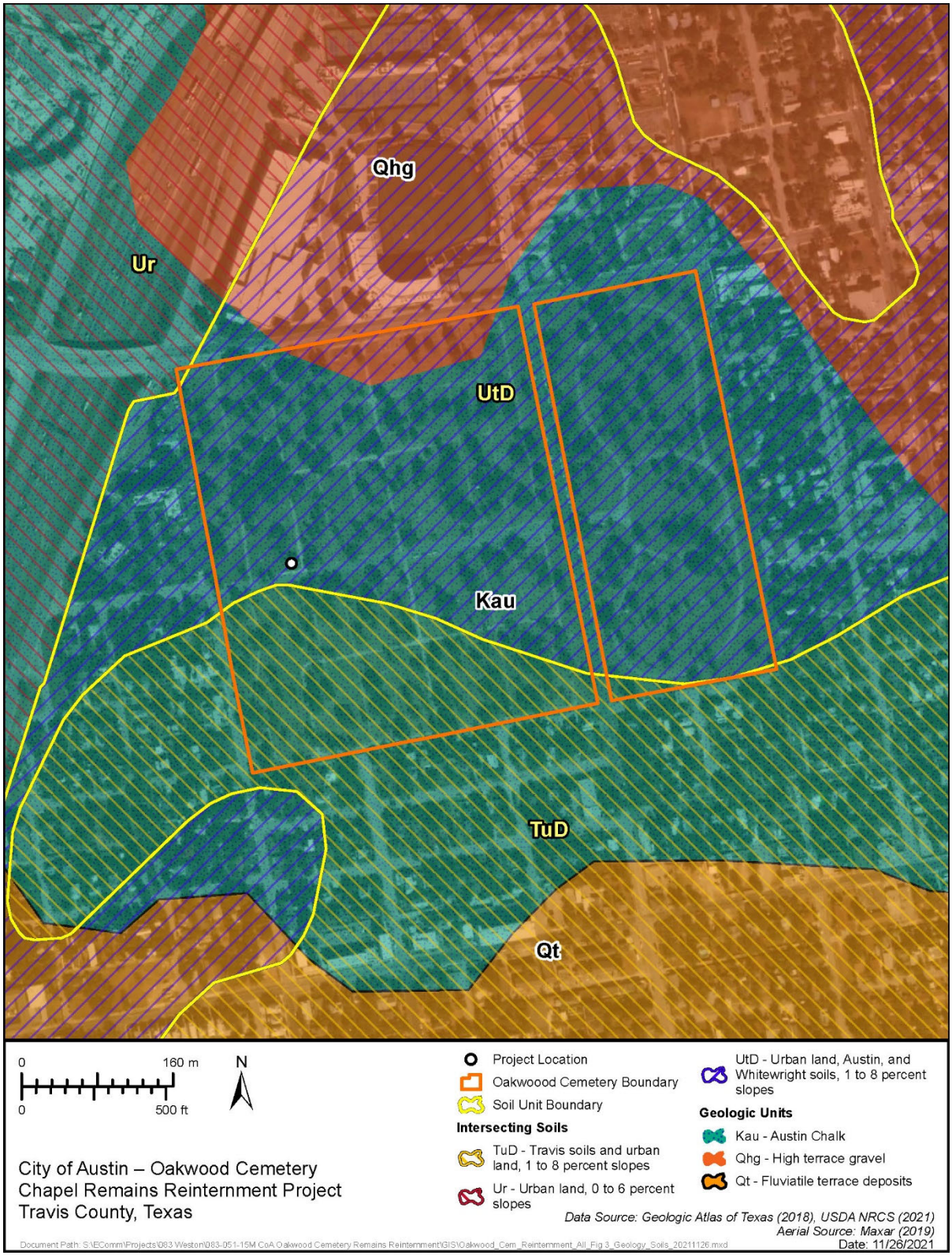

Figure 3. Recorded geology and soils in the Oakwood Chapel project vicinity.

Only the crape myrtle is not native Texas species. Other tree species included cedar elm (*Ulmus crassifolia*), arborvitae (*Thuja* sp.), eastern red cedar (*Juniperus virginiana*), Italian cypress (*Cupressus sempervirens*), yaupon (*Ilex vomitoria*), chinaberry (*Melia azedarach*), ligustrum (*Ligustrum occidentalis*), Texas persimmon (*Diospyros texana*), American elm (*Ulmus americana*), Texas mountain laurel (*Sophora secundiflora*), and Texas red oak (*Q. texana*). Most of these are native Texas species. Of all the tree species present in the cemetery, only the post oak and live oak are likely to be naturally occurring – the others were almost certainly planted at one time or another.

Shrub species present in the cemetery included nandina (*Nandina domestica*), oleander (*Nerium oleander*), boxwood (*Buxus sempervirens*), primrose jasmine (*Jasminum mesnyi*), yucca (*Yucca* sp.), red yucca (*Hesperaloe parviflora*), century plant (*Agave americana*), sotol (*Dasylirion* sp.), Tam juniper (*Juniper sabina*), winter honeysuckle (*Lonicera fragrantissima*), lantana (*Lantana camara*), spirea (*Spirea* japonica), photinia (*Photinia fraseri*), Texas sage (*Leucophyllum frutescens*), purple nandina (*Nandina purpurea*), and dwarf yaupon (*Ilex vomitoria*).

A lawn composed of St. Augustine grass, Bermuda grass, native grasses, and low herbaceous plants covers the ground. Groundcovers present at Oakwood include English ivy (*Hedera helix*), monkey grass (*Ophiopogon japonicus*), and liriope (*Liriope muscari*). Vine species include Virginia creeper (*Parthenocissus quinquefolia*) and fall clematis (*Clematis virginiana*). Perennials in the cemetery include Dutch iris (*Iris germanica*), crinum lily (*Crinum asiaticum*), and oxblood lily (*Rhodophiala bifida*). Annuals include blue-eyed grass (*Sisyrinchium angustifolium*), Texas bluebonnet (*Lupinus texensis*), and winecups (*Callirhoe involucrate*).

Fauna

Various animals can be found within the cemetery; however, their presence there is generally considered problematic for the constant upkeep across the grounds. Native mammals occasionally seen within the cemetery include the Eastern fox squirrel (*Sciurus niger*) and opossum (*Didelphis virginiana*), as well as other rodent species.

Native mammals common to the Austin area but not known to be present within the cemetery grounds include white-tailed deer (*Odocoileus virginianus*), rock squirrel (*Citellus variegates*), Black-tailed jackrabbit (*Lepus californicus*), armadillo (*Dasypus novemcinctus*), Gray fox (*Urocyon cinereoargenteus*), and coyote (*Canis latrans*). In the past, the black-tailed prairie dog (*Cynomys ludovicianus*), bobcat (*Lynx rufus*), racoon (*Procyon lotor*), skunks (*Mephitis mephitis* and *Spilogale putorius*), American badger (*Taxidea taxus*), and North American beaver (*Castor canadensis*) could be found in the area. Prehistorically, the area supported large mammals such as bison (*Bison bison*), pronghorn (*Antilocapra americana*), and black bear (*Ursus americanus*).

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CHAPTER 3: CULTURAL CONTEXT

The project area is situated within the Central Texas archeological region (Perttula 2004). This region encompasses approximately 84,300 square kilometers (an area roughly equivalent to the State of Kentucky or South Carolina) and entails an array of prehistoric and historic cultural resources ranging from 16,000 years before the present (BP) through the Twentieth Century (**Figure 4**). Inasmuch as the current investigation focuses exclusively on the modern period, the cultural historical context below very briefly summarizes the pre-contact/prehistoric period and treats the historic period in more depth. For further details of the prehistoric period, the reader is directed to Bonine et al., 2022.

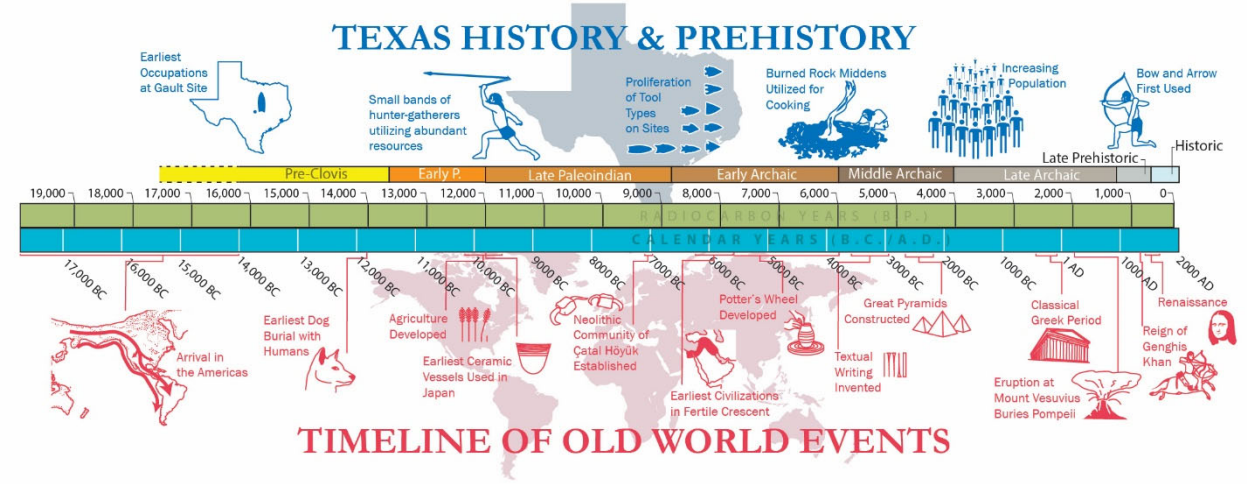

Figure 4. A visual timeline of Central Texas' cultural history.

Pre-Contact/Prehistoric Period

The several prehistoric periods in Central Texas are principally defined by the presence of diagnostic projectile points and other technologies but are intended to identify significant trends in economic and socio-cultural patterns. Unlike elsewhere in Texas, prehistoric cultures in Central Texas maintained a subsistence-level hunter-gatherer lifestyle throughout the entire prehistoric period, with only moderate changes in technology.

The arrival of humans on the American continent may have occurred as early as 16,000 years ago with people we now refer to as "Pre-Clovis." The earliest occupation of Texas was sparse but has been confirmed at a small handful of sites. Following the Pre-Clovis Period is the Paleoindian Period, dating from about 11,500 to 8,800 years ago (Collins 2004). Diagnostic artifacts such as Clovis, Folsom, and Plainview projectile points appear in the archeological record evidencing the hunting of large game such as mammoth, mastodon, bison, camel, and horse (Black 1989). As these "megafauna" (as they are called) gradually died off due to climate change and hunting stresses, inhabitants of Central Texas shifted their subsistence patterns toward smaller game and plant foraging.

The Archaic period refers to the span of time from about 8,800 to 1,250 years ago. This period signifies more reliance on local plant resources and small to medium game and is evidenced by an increase in the diversity of projectile point styles and other tool types (Collins 1995). The archeological record includes widespread use of burned rock middens, a broader suite of site types, and localized distributions of artifact styles and site types. Population levels may have increased over time but likely remained low.

About 1,250 years ago, this region's inhabitants adopted the bow and arrow and began making ceramics. These and other cultural shifts set off what archeologists categorize as the Late Prehistoric Period. The use of arrows enabled hunters to obtain game from greater distances and is indicated by smaller projectile points such as Perdiz and Scallorn. Another technological hallmark of the Late Prehistoric period in Central Texas is the first substantial use of ceramics (Black 1989). Burned rock middens and ground stone artifacts increased in number suggesting Late Prehistoric populations increasingly relied on plant foods. Population levels increased and inter-group conflict also increased, as evidenced from arrow inflicted injuries observed in human remains from Late Prehistoric cemeteries.

Historic Period

The Historic Period in Texas begins when the first European explorers arrived along the Texas Gulf Coast in 1519 and subsequent Spanish entradas into the state beginning as early as 1528. Although claimed by Spain, no attempts were made to establish permanent settlements in Texas until the seventeenth century. During this time of Spanish exploration and colonization, Plains Indian groups such as the Tonkawa, Apache, and Comanche entered Central Texas putting pressure on groups that were indigenous to the region. These newcomers - who had been displaced themselves - benefited from the use of horses which they had acquired from Europeans (Hester 1989).

Spanish interests in Texas were energized by the need to defend the territory against Apache and Comanche incursions, as well as by the 1685 landing at Matagorda Bay of French explorer René-Robert Cavalier, Sieur de la Salle. Beginning in 1691 and throughout the eighteenth century, a series of missions was established across Texas as a buffer between Spanish territory in Texas and French territory in Louisiana (Cox 1997). These included, in 1730, a short-lived mission on the south side of the Colorado River, in what is now Zilker Park. Many of the indigenous groups sought refuge from the influx of Plains Tribes in these missions in exchange for Spanish/European education and conversion to Catholicism. However, Central Texas saw little to no European settlement and remained under Native American control until the nineteenth century.

Gaining independence from Spain in 1821, Mexico became increasingly wary of encroachment into Texas from the United States. The Mexican government established a program of colonization to encourage settlement and to preserve the land as Mexican territory. Colonization laws passed in 1824 and 1825 granted empresarios (land agents) territory in which they were to settle immigrants with the intention of becoming Mexican citizens. In 1821, Stephen Austin obtained an empresario grant from Mexico and by 1825 Austin had brought the first 300 American families into the territory. Settlers could receive 80 acres of land for each enslaved person they brought to the colony. These first permanent settlers founded a village on the banks of the Colorado River and named it Waterloo. The motivation for bringing enslaved people to Texas was primarily economic – using their labor to grow cotton, which was by 1820 the most valuable commodity in the Atlantic world. The first census in Austin's colony in 1825 showed 443 slaves in a total population of 1,800 (Barker 2022; Campbell 2021).

By 1830, there were 7,000 settlers from the United States living in Mexican Texas. But tensions between the Mexican government and settlers from the United States grew as Mexico unsuccessfully attempted to halt further immigration and settlers pushed back against Mexican legal codes. These regulatory laws required those living in Mexico—including those living in Texas—to become Mexican citizens, convert to Roman Catholicism, file legal documents in Spanish, and (after Mexico abolished slavery in 1829) end the practice of slavery. However, Mexico continued to allow settlers from the United States to bring enslaved people into the territory as "indentured servants." These tensions eventually led to the War of Independence, which began in October of 1835 at the Battle of Gonzales. The Republic of Texas won independence from Mexico on April 21, 1836 (Barker and Pohl 2022).

In October of 1836, shortly after the victory at the Battle of San Jacinto, voters from the newly formed independent Texas overwhelmingly supported annexation into the United States. Leaders in Washington, however, were not initially receptive. President Martin Van Buren's administration was concerned that such action would trigger a war with Mexico. Furthermore, the growing anti-slavery movement in the United States made the annexation of a slave-holding Texas that much less appealing. A series of overtures, rebuffs, and retractions between the nations would follow for the next seven years until 1843, when Great Britain began pressing Texas to remain independent as a hedge against westward U.S. expansion and the increased economic influence that would result. The United States then moved more deliberately and favorably toward annexation and Texas joined the Union on December 29, 1845 (Barker 2022; Neu 2022).

The City of Austin

In 1839, President of the Republic of Texas, Mirabeau B. Lamar, sought to establish a capital city near the center of the new republic's territory. The land north of the Colorado River surrounding the hamlet of Waterloo was chosen and renamed Austin, in honor of Stephen Austin. In rapid succession and before the end of 1839, surveyors laid out a grid 14 blocks square between Waller Creek and Shoal Creek, temporary government buildings were constructed, and the national government moved in. In 1842, Texas President Sam Houston, fearing capture of the national archives by Mexican troops, decided to move them out of Austin. He was prevented from moving the archives by a group of armed Austinites, but he successfully moved all other government functions to Washington-on-the-Brazos, inside the more densely settled areas of Texas. Austin's growth faltered after the de facto loss of the national government, but it resumed its place as the administrative center of Texas in 1845. In that year, voters chose the city as the new state capital following the annexation of Texas into the United States (Humphrey 2022). With its status as the state capital secured, Austin began to grow again through the 1850s.

The role of slavery in Texas' economy was a hotly debated topic during this period. Communities in cotton-growing portions of the state - the north-central, east, southeast, and lower south - strongly favored the institution of slavery and considered it vital to Texas' future. Those who lived outside of these cotton-influenced areas – the major cities, ranchlands of central Texas, and the western and northwestern frontier – typically did not support it. Furthermore, many of the people who lived in these areas were recent immigrants from abolitionist countries like Germany, Mexico, and Great Britain. Austin, being in one of these areas, tended to oppose slavery. This pitched debate continued across the state and became more polarized through the 1850s (Buenger 2022).

In 1861, a convention of the people of Texas met in Austin and voted to secede from the Union to join the Confederacy. Pressure to call a convention to consider secession began in October 1860, when it became apparent that Abraham Lincoln would be elected to the presidency. The final vote of the convention revealed the results of 166 votes for secession and 8 against. Eventually, in the popular vote, by a vote of 44,317 to 13,020, Texans ratified secession on February 23, 1861. Austin residents and those of Travis County voted against secession. The Secession Convention reassembled on March 5, declared Texas independent, joined it to the Confederacy, and reorganized the state's government (Buenger 2022b). Though many of Austin's residents did not support the institution of slavery, they were Texans nonetheless, and joined the ranks of Confederate troops and sailors during the Civil War. While the city was never directly threatened during the hostilities, Austin experienced economic hardships because of the conflict. After the Civil War, Union troops arrived in Austin to re-establish control of the state (Humphrey 2022).

On the eve of the Civil War, the African American population was 1,031 (30% of the city's 3,456 inhabitants), of whom 1,019 were enslaved and only 12 were free. After the Civil War, the city's African American population increased almost twice as fast as the population in general. By 1870, 1,615 African Americans resided in the Texas capital (36.8% of 4,428 in 1870 census) and had established schools, businesses, and neighborhoods across the city, including Wheatville, Clarksville,

Masontown, and Pleasant Hill (Humphrey 2022). In the 1870s, two African American Austinites, Henry Green Madison and Scipio Thompson, served as City Aldermen (City of Austin 2021). A third, William H. Holland, served in the Texas Legislature during Reconstruction. Of note: both Madison and Holland are buried at Oakwood Cemetery.

From 1871 to 1875, Austin experienced a brief economic boom when the arrival of the Houston and Texas Central Railway made the city the only railroad connection for miles around. The rapid expansion of rail lines into other communities decreased the city's importance as a trade hub and growth slowed for the rest of the decade. In 1881, the Austin public school system was established and the Tillotson Collegiate and Normal Institute, founded by the American Missionary Association in 1875, opened its doors. In the same year, Austin was chosen as the location of the University of Texas with instruction beginning two years later. The Catholic St. Edwards College was founded shortly thereafter in 1885. By the end of 1880s, the twin drivers of Austin's economy for the next century, state government and education, had been established (Humphrey 2022).

In the 1890s, Austin built a dam on the Colorado River to provide municipal water and hydroelectric power to the city. Conceived as a way to draw electricity-powered industry to the city, the scheme ultimately failed, but the electric streetcar service and moon tower lighting system became points of civic pride (Hunt 2011). Flooding collapsed the dam in 1900 and foiled reconstruction efforts in 1915 (Humphrey 2022). The 1920s to 1940s brought major government investments in planning and infrastructure. The 1928 City of Austin Master Plan was the first formal plan for city expansion since its founding in 1839. The 1928 Master Plan provided a blueprint for numerous necessary public services, including parks, schools, cemeteries, and roads. Overshadowing the municipal improvements, the 1928 Master Plan is infamous for its role in expelling all African American residents from most areas of Austin and segregating them near the eastern outskirts of the city (Humphrey 2022).

In reference to an area of African American residences, the 1928 Master Plan states "With these buildings removed … most of the remaining property will be of a substantial and more desirable type … and will increase its value many times the cost of the acquisition" (Koch & Fowler 1928:28). To accomplish this, the city only provided services to African Americans in East Austin and refused them elsewhere, thereby skirting federal legal constraints on formally legislated (de jure) segregation (Koch & Fowler 1928). The Great Depression brought economic hardships to Austin, but the perennial economic boosts from government and education sectors assured that the city was not as hard hit as other places. In the 1930s and 1940s, New Deal programs created new roles for government to increase social welfare by providing services and education, bringing in a significant influx of resources to the city (Humphrey 2022).

By 1875, around 300 people – roughly 5% of Austin's total population of 6,000 at the time - lived in a neighborhood known as "Mexico," on the western side of downtown, between Second and Third Streets along Shoal Creek and in the area that is now Republic Square (PARD 2022). The City's institutionalized segregation policies extended to members of Austin's Hispanic population as well, with traditionally Hispanic neighborhoods suffering from poor conditions and limited infrastructure. At the turn of the century, the City closed the only public school for Mexican American children downtown due to budget cuts (PARD 2022a). Ongoing immigration from Mexico was heightened during the Mexican Revolution (1910–1920), and by 1930, Austin was home to 902 Mexican American families, 388 of which were born in the United States (AmaTerra et al., 2015: Chapter 2). By 1940, when the Hispanic population rose to 9,693, they composed 11 percent of Austin's population. By the 1940s most Mexican Americans lived in the rapidly expanding East Austin barrio south of East Eleventh Street, where increasing numbers owned homes. Hispanic-owned business were dominated by a thriving food industry (Humphrey 2022).

The latter half of the twentieth century saw major changes in Austin's politics and economy. During the Civil Rights era of the 1950s and 1960s, African Americans and other ethnic minority groups ended formalized segregation and removed some of the institutional barriers to the improvement of

their lives. In the late 1960s and 1970s, several computer technology companies arrived in Austin, including IBM, Motorola, and Texas Instruments. Since then, technology companies have become another major driver of the Austin economy (Humphrey 2022).

The technology industry has created rapid economic and population growth for Austin in the early decades of the twenty-first century. This growth has stimulated a real estate development boom and related inflationary pressures on the cost of living (TRERC 2022; Buchele 2021). Environmental and anti-gentrification groups have formed in response to these changes. Neighborhoods that were historically African American and Hispanic are undergoing rapid changes in demographics and character (Zehr 2015; COA Anti-Displacement Task Force:2018). The interplay of social, economic, and political forces continues to shape the character of the City of Austin.

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CHAPTER 4: OAKWOOD CEMETERY HISTORY AND CHAPEL GRAVE EXHUMATION PROJECT

Oakwood Cemetery was established in 1839 as City Cemetery and was the first municipal burial ground within Austin (Knott 2005). The oldest interment is thought to date to 1839 and the oldest recorded burial dates to 1841. In 1856, the Texas Legislature transferred the property to the City of Austin and the cemetery became the final resting place for many prominent Texans, some of them are listed below (**Table 1**; Haefner et al. 2020:9; PARD 2022b):

Table 1. Sample of prominent individuals buried at Oakwood Cemetery.

Name (birth-death)	Significance
Laurine Cecil "L.C." Anderson (1853–1938)	Principal of Prairie View Normal Institute (now Prairie View A&M University); first president and co-founder of Colored Teachers State Association
Washington Anderson (1817–1894)	Hero of the battle of San Jacinto; businessman; helped to organize Williamson County and sold land for the City of Round Rock
Mary Frances Freeman Baylor (1929–1997)	African American community organizer; director, Clarksville Neighborhood Center
Abner H. Cook (1814–1884)	Architect and contractor who owned his own brick kiln and lumber mill and designed many prominent Greek Revival buildings in Austin, including the Governor's Mansion
Jacob Carl Maria DeGress (1842–1894)	First Texas state superintendent of public education; cavalry commander, lieutenant colonel, Union army
Jacob Fontaine (1808–1898)	Important and early leader in Austin's African American community; founder of the St. John Regular Missionary Baptist Association
Rebecca Jane Gilleland Fisher (1831–1926)	Only woman elected to the Texas Veterans Association for military service associated with the Army of the Republic of Texas
Dr. Everett H. Givens (1888–1962)	Dentist and civic leader; worked to obtain equal rights and opportunities for African Americans in Austin
Andrew Jackson Hamilton (1815–1875)	Lawyer, state legislator, member, U.S. House of Representatives; governor of the State of Texas during Reconstruction
Susanna Dickenson Hannig (1814–1883)	The sole white/Anglo survivor, along with her infant daughter, of the Battle of the Alamo
Reuben Shannon Lovinggood (1864–1916)	Educator, newspaper editor, and speaker who studied the Classics, the study of the ancient Greek and Roman world; worked to improve academic standards and increase opportunities for African Americans
Thomas Freeman McKinney (1801–1873)	State senator; "Father of the Texas Navy"
Elisha M. Pease (1812-1883)	Governor of Texas; wrote part of the Constitution of the Republic of Texas; helped organize the Republican party in Texas after the Civil War
William "Buck" Walton (1832–1915)	Attorney, politician; officer in the Confederate Army
Thomas Pratt Washington (1806-1873)	Developed a large cotton plantation in the area now known as Del Valle
Andrew Jackson Zilker (1858–1934)	Businessman; bank director; sold the land containing Barton Springs to the City of Austin on the condition that the City of Austin make its payments to the school district and convert the land into a park, now known as Zilker Park

Beginning in 1866, Austin set aside a section for African American burials in Oakwood. The University of Texas' "Interpreting the Texas Past" Project examined Oakwood's burial records and identified 1,064 African American graves, dating from 1866 through 1880. Ada Simond summarized this early period in her *Austin American-Statesman* "Looking Back" column in the 1980s: "When the Austin cemetery named Oakwood was laid out in 1856, a small section in the northwest corner was designated 'for colored.' When the space was filled, as was the section for Whites, the cemetery was expanded across Comal Street to the east, but did not include a section for Blacks" (Simond 1983).

Multiple organizations have maintained plots within Oakwood Cemetery over the years. These include the Austin Fire Department, the Texas Confederate Women's Home, the Austin Typographical Union, the Texas School for the Deaf, the Carpenters and Joiners of America, the Woodsmen of the World, and the Masonic Lodge (Haefner et al. 2020:9).

In 1856, the cemetery was formalized as a 10-acre plot and was aligned within the city grid. Subsequent purchase of surrounding land increased the original cemetery to the present size of 40 acres (AmaTerra et al., 2015: Chapter 6). City streets delineate all four sides of the cemetery. On the north side is Martin Luther King, Jr. Boulevard (formerly 19th Street); on the east is Comal Street; on the south is East 14th Street; and on the west is Navasota Street. Today, the cemetery perimeter is bounded with an iron-picket fence.

Internally, the cemetery is divided into quadrants by the two paved roads: Main Avenue, which runs east to west, and Central Avenue, which runs north to south (**Figure 5**). A secondary grid of unimproved roads further subdivides each quadrant. Family plots measuring 25 feet by 30 feet are arranged in a grid within each of the subdivided spaces. This grid system organizes nearly the entire cemetery except for the very oldest portions located in the southwest and northwest quadrants. (AmaTerra et al., 2015: Chapter 6).

In 1970, the City of Austin formally accepted the responsibility, management, and care of Oakwood Cemetery (Austin Parks and Recreation, 2017) and in 2013, PARD assumed full management and oversight of all municipal cemeteries, including Oakwood Cemetery.

Figure 5. General sectional layout of Oakwood Cemetery (from AmaTerra et al., 2015).

The Chapel

Oakwood's mortuary chapel is the only building located within the cemetery (excluding five mausoleums). The rusticated ashlar limestone, Gothic-Revival-style chapel stands on the north side of Main Avenue near the cemetery's west entrance (**Figure 6**). Workers built the chapel in the early 1910s and opened it for service in the Fall of 1914 (**Figure 7**). The chapel's front-gabled roof is constructed of wood, with wood shingles. Original plans have not been located but the interior of the Chapel was remodeled from plans dated April 12, 1944 (**Figure 8**). Several subsequent remodeling events altered the

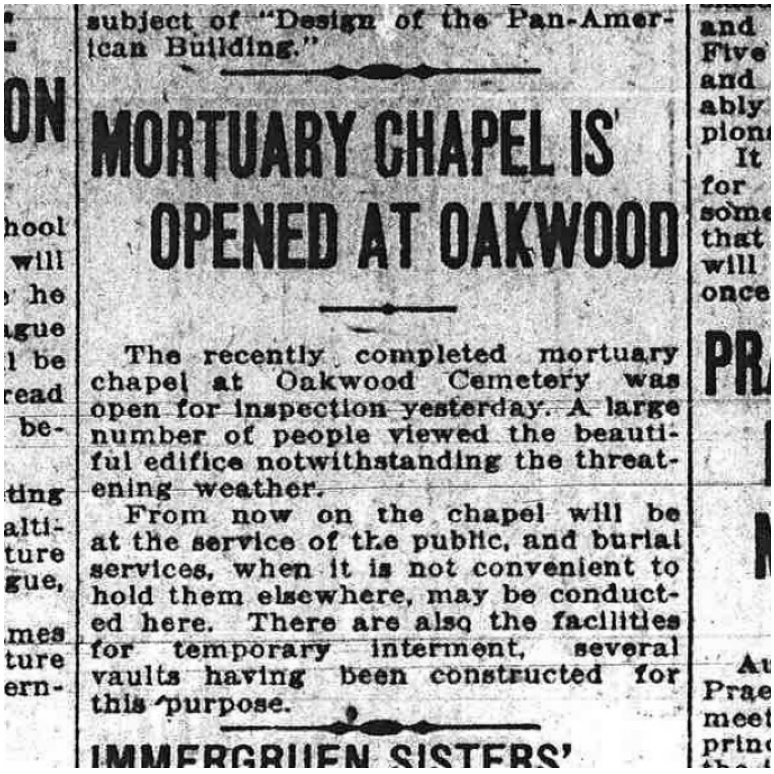
Figure 6. Oblique aerial photograph of the Oakwood Cemetery chapel after its rehabilitation (from City of Austin 2022).

Chapel interior, and a structural evaluation was conducted in 2008, leading to recommendations for repair and renovation.

Recorded Historic Resources

The Texas Historical Commission's (THC's) Archeological Sites Atlas indicates that Oakwood Cemetery, along with Oakwood Cemetery Annex, has been designated as site number 41TV1706 (**Figure 9**). Oakwood Cemetery was recorded in the Atlas in 2004 and described as a "maintained urban setting cemetery." Oakwood Cemetery was listed as a National Register of Historic Places (NRHP) District in 1985 and in 2010 it was designated as a Historic Texas Cemetery. The district contains 13 historical markers commemorating individuals buried within the cemetery. Oakwood's Cemetery Annex, to the east, was listed as an NRHP District in 2003.

No additional archeological sites, surveys, NRHP properties or districts, State Antiquities Landmarks (SALs), or Historical Markers are located within 30 meters of the cemetery boundaries, though the eastern boundary of the Swedish Hill NRHP District is approximately 50 meters to the west.



subject of "Design of the Pan-American Building."

MORTUARY CHAPEL IS OPENED AT OAKWOOD

The recently completed mortuary chapel at Oakwood Cemetery was open for inspection yesterday. A large number of people viewed the beautiful edifice notwithstanding the threatening weather.

From now on the chapel will be at the service of the public, and burial services, when it is not convenient to hold them elsewhere, may be conducted here. There are also the facilities for temporary interment, several vaults having been constructed for this purpose.

IMMERGRUEN SISTERS'

Figure 7. A November 9, 1914, article commemorating the Oakwood Chapel's opening in the issue of the Austin American newspaper.

Figure 8. Hatch + Ulland Owen Architects' overview drawings of the Oakwood Chapel renovation plan (2014; from AmaTerra et al. 2015).

This figure has been intentionally omitted because it contains sensitive archeological site location information.

Figure 9. Recorded cultural resources and previously conducted archeological surveys in the vicinity of the Oakwood Cemetery chapel.

2016–2018 Investigations and Exhumations

Between November 2016 and January 2018, Hicks & Company Environmental/Archeological Consultants (Hicks & Company) conducted archeological monitoring and excavations at the Oakwood Cemetery Chapel during the restoration effort. Underneath and immediately adjacent to the chapel, archeologists discovered 59 unmarked and previously unknown burials. Later research by Hicks & Company concluded that these 59 individuals died in the late nineteenth to early twentieth century (Haefner et al. 2020).

Twenty-two of these graves were in locations that would not be impacted by the planned improvements to the chapel and these 22 burials were not disturbed and were left in place. However, the planned improvements could not be redesigned to avoid 37 of the burials and archeologists, working under Texas Antiquities Permit No. 7709, exhumed those 37 burials (Haefner et al. 2020). These burials are those that are intended for reinterment pursuant to the current monitoring activity.

Known Burials Within the Current Area of Investigation

Four known burials were identified within the area planned for eventual reinterment. Three of these were located beneath the Chapel walls and extended under the walls outside into the exterior area immediately adjacent to the chapel and within the area proposed for monitored scraping and reinterment. These three burials (Burial B20, B21, and B25) were exhumed by Hicks & Company (Haefner et al. 2020:56-68).

The fourth burial (Burial 29), located just off the chapel's southwest corner, is for a Dario Nanes who died in 1875. Hicks & Company archeologists did map this interment during their exhumation work, but they did not disturb the burial itself. PARD staff had intentionally removed Mr. Nanes' burial marker before fieldwork began and returned it after the reinterment was complete (see Chapter 7). Otherwise, the burial was undisturbed.

Finally, two other stone markers were left in place west of the exploration trenches. One pink granite marker commemorates a Rosy Clemons (3/21/1866-1/4/1874; **Figure 10**). The other is a gray granite marker for a T.J. Wells (8/10/1867-8/27/1927; **Figure 11**). The compass and square symbol on Mr. Wells's marker indicates that he was a Freemason. Both markers were prominently flagged during fieldwork and were not disturbed.

Figure 10. Standing marker for Rosy Clemons (1866–1874) that was avoided during fieldwork.

Figure 11. Standing marker for T.J. Wells (1867–1927)
that was avoided during fieldwork.

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CHAPTER 5: ONGOING DNA AND ISOTOPIC ANALYSIS OF EXHUMED REMAINS

PARD partnered with researchers at UConn and UT, under the direction of the UConn Ancient DNA Laboratory's Dr. Deborah Bolnick and UT's archaeology professor Dr. Maria Franklin, to conduct DNA and isotopic analysis of the individuals who were disinterred at the Oakwood Chapel site. To date, few ancient DNA studies have included individuals from the post-colonial American South and very few ancient DNA studies have focused on marginalized communities in the United States, such as African Americans, Mexican Americans, and poor white communities, all of whom are represented in the Oakwood Cemetery burials. Researchers hope to generate genetic data that will complement the osteological, archeological, genealogical, ethnographic, and archival research that has been conducted already and better reconstruct these people's identities, experiences, and familial connections.

The following chapter summarizes the DNA and isotopic sampling work that has been conducted so far and the analyses that are proposed for the near future. This chapter is largely composed from Dr. Bolnick's narrative that was attached to this project's Antiquities Permit application scope of work (see **Appendix A**).

Research Goals of DNA and Isotopic Sampling

DNA Analysis

Through DNA analysis, researchers hope to shed light on: 1) the genetic ancestry of each individual; 2) their genetic sex; 3) the individual's diet and experience with disease (assessed by examining animal and plant DNA from hardened tooth plaque, known as dental calculus, and the presence of pathogen DNA); 4) experiences of stress and trauma and the way those lived experiences may have become embodied (through analysis of epigenetic marks on genes related to stress regulation); 5) patterns of genetic variation and relatedness among these individuals; and 6) relatedness between individuals buried at the Oakwood Cemetery and individuals alive today.

The genomic information from the Oakwood Cemetery burials will also be analyzed alongside the genomic information from the Bullhead Camp Cemetery remains, also known as the Sugar Land 95, from Fort Bend County, Texas (41FB355; see Clark et al. 2020) as part of a UConn doctoral student's dissertation project.

Isotopic Analysis

Isotopes can be viewed as versions of a chemical element (e.g., carbon, oxygen, helium, etc.); the fundamental composition of matter. The United States Department of Energy (2022) describes them as individual members of a family; related but not identical. Every chemical element has at least one isotope. Different isotopes naturally occur in different proportions across the planet (and universe), and living organisms take retain these isotopes in their bodies as they eat, drink, or breathe (among others). Scientists can find these different versions of elements in matter or measure the relative proportions of each version to learn more about the material. For example, archaeologists often measure the amount of the Carbon 14 isotope to determine how old that material is, in a process called radiocarbon dating (Beta Analytic 2022).

The UConn researchers hope to study different isotopes in teeth to learn more about the individuals' geographic origins, their diet, and their movements throughout their lives. They plan to isolate different oxygen isotopes in dental enamel and carbon and nitrogen isotopes in dentine (the layer beneath a tooth's enamel). Oxygen isotopes in dental enamel can reflect the geographically unique

chemical compositions of drinking water that an individual drank during childhood, when the enamel formed in their bodies. Oxygen isotopes found in drinking water, in turn, reflect local climate patterns, providing an approximation of where individuals lived when they were young.

The analysts will process the dentine samples – more specifically the collagen suspended in the dentine – to isolate different carbon and nitrogen isotopes. Differing proportions of these isotopes may highlight what kinds of plants and animals an individual consumed during their life, which can further reflect on where and how they lived.

Sample Collection Methodologies

Sample Selection at FACTS

Researchers from UT traveled to the FACTS facility to collect one – two specimens (depending on their state of preservation) from each of the disinterred individuals' skeletal remains. They primarily targeted teeth – ideally molars and/or premolars – because teeth tend to retain more endogenous DNA than other skeletal material. Endogenous DNA originates from the individual rather than from external contaminant sources like plants and animals in the soil (among others) called exogenous DNA. If a given individual's teeth were not preserved or were not in good enough condition, researchers would collect dense, outer layer (cortical) bone from the skull, fingers/toes, or the wrists/ankles for sampling. The remains were then catalogued and shipped to UConn's Ancient DNA Laboratory in Storrs, Connecticut, for extraction.

Sample Extraction at the UConn Ancient DNA Laboratory

After they arrived in Storrs, the collected bone fragments were transferred to the Ancient DNA Laboratory, a newly constructed, state-of-the-art, and restricted-access facility that was specifically designed for ancient DNA studies like this. Laboratory staff used non- or minimally destructive techniques and procedures that have been optimized for the study of degraded ancient DNA (Bolnick et al. 2012; Dabney et al. 2013; Rohland et al. 2018). To reduce or remove potential sample contamination, the lab is equipped with overhead germicidal ultraviolet lights, positive air pressure, HEPA-filtered air, two laminar flow hoods, and all lab equipment necessary for this research.

To eliminate any surface DNA contamination that may have been introduced from external sources during excavation and handling, each sample was first submerged in bleach for 5 – 10 minutes, rinsed twice with DNA-free water, and irradiated with 254 nanometer (nm) ultraviolet light for 5 – 10 minutes per side. Teeth were then incubated overnight in a non-hazardous solution containing EDTA, a chemical that deactivates certain enzymes that can damage DNA, and proteinase K, an enzyme that isolates undamaged DNA. The samples were then removed, rinsed with water, and securely stored until all were ready to return to PARD. Most of the DNA samples that were ultimately analyzed come from this incubation solution.

This nondestructive DNA extraction protocol does not involve breaking, crushing, drilling, powdering, or otherwise deliberately disfiguring the sample, but it should be noted that chemical reactions during the overnight incubation can sometimes damage tooth roots or lead to cracks or microfractures in the tooth crown. If minimally destructive methods were needed to extract a viable sample, the researcher would section (cut) one or more tooth roots from the teeth and proceed with the nondestructive protocol with the roots. This approach ensures that the tooth crown stays intact and does not sustain any damage.

For samples extracted from bone, researchers used a Dremel rotary tool to remove approximately 120 milligrams of bone powder (roughly the amount of powder that one would find in a pill). The rest of the bone would remain intact.

After all of the samples were extracted and they were preliminarily assessed for viability, the source teeth and bone fragments were shipped back to the FACTS facility where they were prepared for reinterment (see Chapter 7).

Sample Processing Methodologies (from Dr. Deborah Bolnick's Summary in Appendix A)

Once the extractions were completed in the Ancient DNA Laboratory, a straightforward workflow is followed to make initial assessments of DNA preservation. The first step has two purposes: (1) to identify the preservation quality; and (2) to make an initial determination of the individual's mitochondrial (mtDNA) lineage. To make this assessment, the team will sequence a portion of the first hypervariable region of the individual's mtDNA following the protocol described in Bolnick et al. (2012). Nearly every cell in the human body has many mitochondria, which makes the mitochondria the most available source of DNA in post-mortem remains (Willerslev and Cooper 2005). mtDNA can also be used to trace matrilineal relatedness and ancestry for every individual because mtDNA is maternally inherited. mtDNA sequences will be compared to the Cambridge Reference Sequence (CRS), and the individual's mtDNA lineage will be determined by assessing diagnostic differences from the CRS.

After the initial extractions and diagnostic tests are performed, each sample will be prepared into a genomic library, a collection of DNA fragments that collectively make up an organism's full-length genome, with a protocol specifically designed for degraded DNA (Rohland et al. 2015). The prepared DNA libraries will then be transferred to UConn's Center for Genome Innovation for sequencing. In some ways, like understanding an author's thoughts by reading the order and composition of letters on a page, DNA sequencing is the process of "reading" the genetic information embedded in a DNA molecule's specific chemical components and arrangement. DNA libraries will be first sampled using the MiSeq platform to assess the quality of each library, estimate contamination from exogenous sources of DNA (non-human sources such as animal, plant, and bacterial DNA), and ensure successful sequencing on the high-throughput NextSeq instrument that will be used for genome sequencing.

The sequence data derived from the genome libraries will first be used to assess nuclear DNA preservation and to identify and eliminate exogenous DNA from the data. Once these steps are complete, the team will be able to determine the genetic sex, characterize the overall genetic ancestry of each person, evaluate patrilineal and biparental relatedness among these individuals, and assess familial relationships with potential living descendants who choose to submit a sample for DNA extraction. The genomic library data will also allow the team to determine the sequence of the complete mitochondrial genome and confirm the initial assessment of the individual's mtDNA lineage.

To assess patterns of stress and trauma on a molecular level, the team will identify individuals with well-preserved nuclear DNA and analyze epigenetic patterns from genes related to stress regulation. These epigenetic patterns will allow the team to make inferences about the ways that traumatic and stressful life experiences may have become molecularly embodied by these individuals and potentially passed on to their descendants. Epigenetics refers to a subfield of genomics in which researchers study modes of gene expression and the chemical markers that become attached to a person's DNA over the course of their lifetime. By studying these patterns on an individual's genes, the team will be able to gain an understanding into how that person's life experiences potentially shaped the over- or under-expression of their genes. The presence or absence of these marks can provide information about how environmental factors, including but not limited to, overexposure to stressful and traumatic events and poor nutrition, particularly in childhood, shaped a person's phenotypic expression. The team will employ newly developed methods, some pioneered by previous members of our lab, to study epigenetic marks in ancient DNA (Smith 2015).

To assess each individual's experience with disease, the team will excise partial or whole pathogenic genomes from the dataset to identify the presence of disease in individuals with appropriate preservation (Stone and Ozga 2019). If dental calculus is available for extraction (as yielded from an individual's teeth), the team would perform additional extractions using these samples to investigate the presence of animal and plant DNA and potentially help reconstruct these individuals' dietary patterns (Warinner et al. 2015). The study of ancient disease, dietary reconstruction, and the human microbiome in ancient DNA are relatively new areas of interest in ancient genomics, and these studies therefore would be truly unique and insightful if available for the undertaking.

Modern Community DNA Comparison

Researchers also are interested in attempting to genetically connect the individuals who were disinterred with living individuals who may be familial descendants. If DNA preservation in the Oakwood Cemetery remains is sufficient to permit these analyses, living individuals who think they may have a connection based on their family history may submit a saliva sample to the UConn for DNA analysis, allowing relatedness to be assessed. All genetic data will be considered in conjunction with osteological, archaeological, genealogical, ethnographic, and archival research in order to contextualize the genetic findings and better reconstruct the identities, experiences, and relations of these people. The specific methodological and logistical details of this process are yet to be defined.

CHAPTER 6: ARCHEOLOGICAL INVESTIGATIONS FOR BURIAL REINTERMENT

As the first previously unknown burials were discovered beneath Oakwood Chapel and were being exhumed, PARD staff began planning for their eventual reinterment. From 2017 through 2019, PARD staff also sought the community's input on this process as well through public meetings and interest group focus meetings. PARD's and the community's prevailing preference was to reinter those individuals' remains near their original resting place, as close to the chapel as possible. If that option was not available, PARD planned to reinter them in Austin Memorial Park Cemetery, approximately 5 miles to the north. PARD staff consulted their cemetery and archival records and identified a narrow corridor just west of the chapel that was not likely to contain burials. Archeologists guided and monitored mechanical scraping in this target area to determine whether the preferred reinterment option would be viable or not. The following discussion summarizes those field investigations.

Field Methodology

All trenching was conducted in one day on November 16, 2021. In the interest of public safety and the respectful treatment of those interred and disinterred in the vicinity of the excavation site, PARD enclosed a 50 x 50-foot (15 x 15 m) work area with temporary chain link privacy fencing (**Figure 12**). Within the fenced work area, archeologists prominently flagged the existing grave markers to assure they would not be damaged during the mechanical excavations and reinterment. They also walked over the ground surface to identify any depressions or other features that may correspond with unmarked burials, though none were observed.

PARD staff marked out two reinterment trench alternatives (Trench 1 and Trench 2) paralleling the chapel's west wall exterior with orange spray paint (**Figure 13**). Although only one trench would be sufficient for the planned reinterments, PARD laid out the two alternative areas to have flexibility should one option need to be abandoned if archeologists observed evidence of human burials within it. Each marked area was 3 feet (0.91 m) wide and 35 feet (10.7 m) long, offset 1 foot (33 cm) from a 1.5-inch waterline – also marked with orange paint - that had been installed with archeological monitors present during the Chapel renovations. Trench 1 was immediately west of the waterline line, farthest from the chapel wall, and Trench 2 was east of the waterline line, closest to the chapel.

Figure 12. View of the privacy fence surrounding the study area prior to the mechanical scraping (facing south). Note proximity of trenching area to Clemons and Wells markers (see Figures 10 and 11).

PARD staff used a John Deere 25G tracked mini-excavator with a 3-foot-wide, smooth bucket to excavate a length of approximately 6 feet (2 m) of trench at a time beginning at the north end, moving south (**Figure 14**). The backhoe operator would slowly clear

Figure 13. PARD staff protect the chapel's windows prior to the archeological scraping. The preferred trench option (which was ultimately abandoned) is marked out in orange paint, as is the dashed line delineating the buried waterline.

Figure 14. The smooth-bucket mini-excavator set up to begin scraping.

away the soil in incremental scrapes 4–6 inches (15 cm) thick (**Figure 15**). Two senior-level AmaTerra archeologists - including the Principal Investigator, who was on site for the entirety of the excavation - continuously monitored the excavation, paying close attention for any changes in soil color or texture and/or any other evidence of possible unknown interments that could have been exposed behind the smooth bucket blade (**Figure 16**). Occasionally, the archeologists would enter the trench to investigate in more detail using shovels (**Figure 17**). The backhoe would continue until reaching the prescribed maximum depth of 3 feet below the surface, at which time the backhoe would move south to begin the next segment. Back dirt was deposited into an adjacent tipper truck (see **Figure 14**) that, when full, would haul the material away from the site. Any anomalies the archeologists noted were further investigated by hand using a trowel and were photographed, mapped, and measured.

Upon discovery of soil anomalies within Trench 1 indicating an unknown interment, and in consultation between COA personnel and AmaTerra archeologists, Trench 1 was abandoned after excavating a length of approximately 12 feet (3.7 m) to a depth of 24 inches (0.61 m). The tipper truck then emptied back dirt taken from Trench 1 back into the partially excavated trench (**Figure 18**), and the refilled trench was compacted and graded level with the existing ground surface. The excavator was then used to dig Trench 2 in the same manner (**Figure 19**). Trench 2 was completed and measured 35.1 feet (10.7 m) long by 3 feet (0.91 m) wide by 3 feet (0.91 m) typical depth.

Results of Mechanical Scraping

Monitoring of the mechanical scraping identified the grave shafts of two previously unknown burials and the backfilled grave shafts of three burials that had been exhumed in 2017 (**Figure 20**).

Figure 15. A representative photo of the exposed soil after each sweep of the smooth-bladed bucket.

Figure 16. Principal Investigator, Aaron Norment, inspects the scraped Trench 1 floor for indications of unmarked burials.

Figure 17. Archeologist, Nicholas Trierweiler, manually scrapes away soils to investigate staining. In this case, the stain marks a 1940s-era wastewater line trench.

Figure 18. A PARD staff member pours the backdirt from the abandoned Trench 1 back into the trench.

Figure 19. Archeologist, Nicholas Trierweiler, documents the findings in the abandoned Trench 1 while PARD staff lays out the footprint of what would be Trench 2.

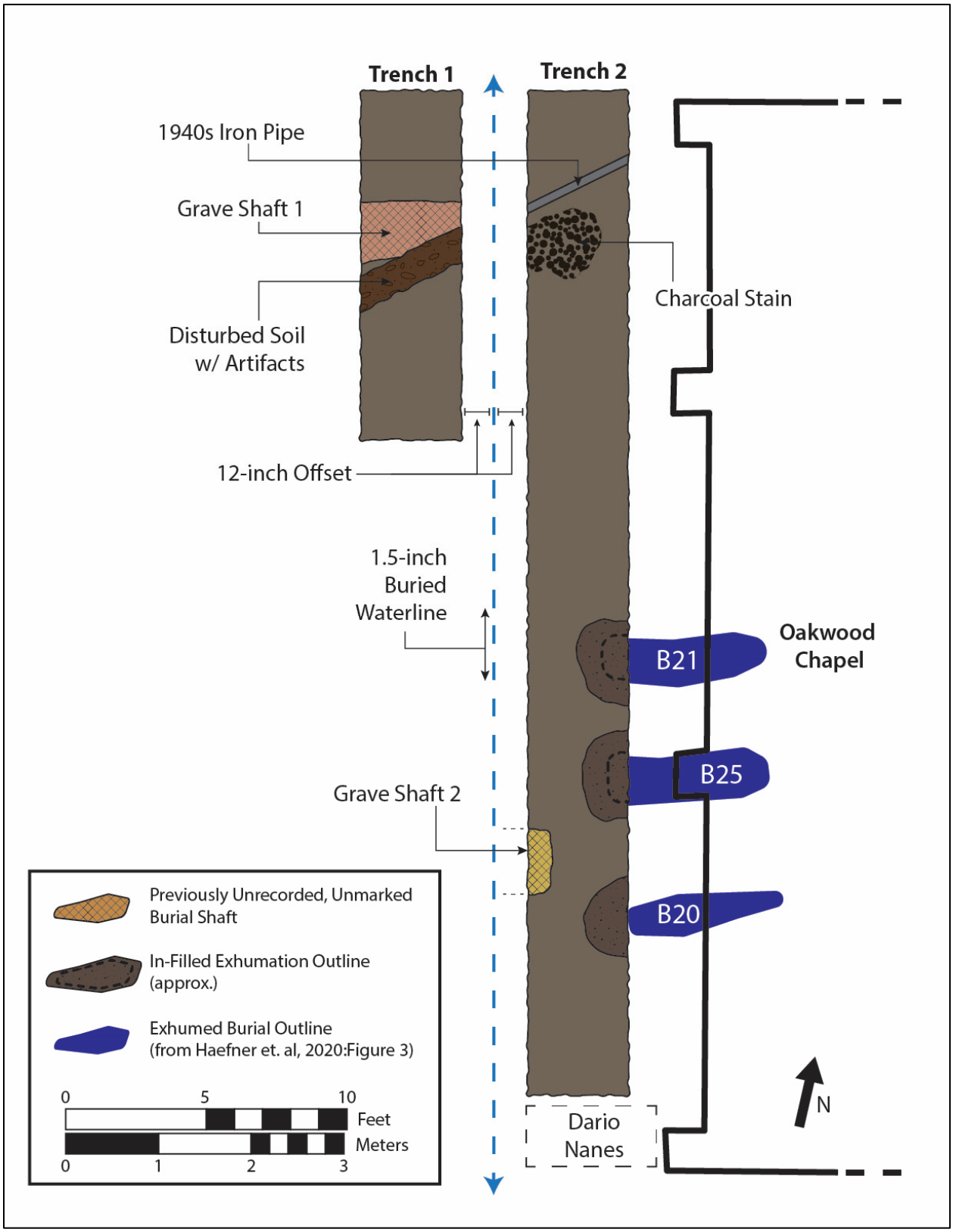

Figure 20. Drawing of the results of archeological monitoring of mechanical scraping for the Oakwood Chapel reinterment project.

No human remains were observed or disturbed during the 2021 investigation. Also revealed was an unrecorded and abandoned iron pipe dating to the 1940s.

Trench 1

At about 160 cm south of the starting location of Trench 1, investigators observed a single square nail and noted a soil anomaly at about 60 cm below surface. This anomaly was a soil discoloration in a clear, straight line roughly perpendicular to the trench orientation (**Figure 21**, see Figure 20). The discoloration was composed of reddish sandy loam in distinct contrast to the surrounding intact, grayish brown clay matrix. Suspecting a grave shaft, archeologists further explored the trench at this depth by hand and found the corresponding southern edge to the burial shaft. The burial shaft was about 30 inches (75 cm) wide and situated perpendicular to the trench in an east/west orientation. No human remains were disturbed, and no evidence of the presumed burial was observed. The identity of the person buried in this grave is unknown.

Figure 21. Photograph of newly documented Grave Shaft 1 and 1940s waterline trench in the base of Trench 1 (facing west).

However, crosscutting the grave shaft was a second soil anomaly that truncated the eastern portion of the reddish fill at a diagonal (see Figure 21). This second anomaly was filled with dark mottled clay loam and contained a few pieces of glazed stoneware, mortar fragments, one wire nail, and charcoal flecking. These items were fragmentary and largely non-diagnostic and were returned to the trench. AmaTerra archeologists and COA personnel concluded that the diagonal anomaly was an abandoned utility line dug in the 1940s to service the lavatory situated exterior to the chapel on the north side. The 1940s-era utility trench had intersected the upper portion of the reddish loam-filled grave shaft and had been filled with back dirt containing construction debris and fragments of broken urns.

AmaTerra archeologists could not conclusively determine whether the 1940s-era utility trench had disturbed the burial itself, but they concluded that this was unlikely.

Because the portion of Trench 1 containing the exposed grave shaft could not be used for the planned reinterments and because the remaining (unexcavated) length allotted for Trench 1 was not sufficient to contain all the burial boxes, COA personnel decided to abandon Trench 1 and open Trench 2. PARD staff backfilled Trench 1 with the aid of the tipper truck, and the surface was compacted and leveled.

Trench 2

Excavation of Trench 2 began at the northern end of the marked area. Within about 2 feet (0.6 m) of starting, and at a depth of about 24 inches (0.6 m), the excavator revealed an iron pipe running diagonally across the trench in a northeast to southwest direction (**Figure 22**). It was clear that this pipe was the same that was buried in Trench 1 and had truncated the reddish loam-filled burial shaft (see Figure 20 and Figure 21). The fill surrounding this pipe was identical to that observed in Trench 1 and here contained a partially solarized pressed glass vessel fragment (**Figure 23**). This artifact was briefly documented then returned to the trench. A large charcoal stain was encountered immediately south of this pipe, but investigators did not observe evidence of the burial shaft that had been encountered in Trench 1 (**Figure 24**). The iron pipe was (temporarily) left intact, and excavation continued south of it in Trench 2 to the full depth of 36 inches (0.9 m). AmaTerra archeologists noted mottled and disturbed conditions throughout the excavations.

Figure 22. Iron pipe exposed in the base of Trench 2 near its northern terminus.

Figure 23. Pressed glass vessel fragment observed in the iron pipe trench fill in Trench 2. The artifact was photographed and returned to the trench.

Another soil anomaly was observed at 22 feet (6.7 m) south of the starting point. AmaTerra archeologists referred to the exhumation report (Haefner et al. 2020: Figure 3) and conclusively determined that this soil anomaly was the refilled shaft of Burial 21 that had been excavated by archeologists with Hicks & Company (see Figure 20). The fill was distinct from the surrounding matrix but was also clearly different from the burial shaft fill exposed in

Figure 24. Overview of Trench 2 floor showing (from foreground to background) the iron pipe, charcoal stain, and in-filled Hicks & Company exhumed burial shafts.

Trench 1. Similar fill representing Burial 25 was encountered just south of Burial 21, as indicated on the Hick's & Company map (Haefner et al. 2020: Figure 3). The excavation encountered black plastic sheeting at this point, confirming the location of the Burial 25 exhumation. No human remains were encountered in either of the backfilled grave shafts from Burial 21 or Burial 25.

AmaTerra archeologists encountered a second previously unrecorded grave shaft (Grave Shaft 2) extending from Trench 2's west wall approximately 8 inches (20 cm) south of Burial 25 at a depth of 36 inches (0.9 m; see Figure 20). Also oriented east to west, this grave shaft measures 26 inches (66 cm) wide and extended 10 inches into Trench 2 from its west wall (**Figure 25**). With so little exposed, the majority of Grave Shaft 2 is west of Trench 2, indicating that it likely would have been observed in Trench 1 as well, if that trench had been excavated to its full length. This grave shaft had distinct, sharp edges and was filled with a mottled, gravelly, yellow-orange clay that was distinct from the surrounding grayish brown matrix. The trench at this location was 36 inches (0.9 m) deep. Investigators did not observe any evidence of the presumed burial, and no human remains were disturbed. The identity of the person buried in this grave is unknown.

Investigators observed another filled grave shaft from the burial exhumations led by Hicks & Company archeologists farther south in Trench 2 (see Figure 20). This shaft matched the location of excavated Burial 20 and was filled with the same backfill. No human remains were encountered in the backfilled grave shaft from Burial 20.

No further soil anomalies were encountered in Trench 2, and it was excavated to the full anticipated length of 35 feet (10.7 m). In consultation between COA personnel and AmaTerra archeologists, it was concluded that the planned reinterments of burial boxes at a depth of 36 inches (0.9 m) in Trench 2 would be stratigraphically above the two newly discovered burials but would not physically disturb them. To ensure that the full length of Trench 2 was available for the reinterments, the iron pipe at the extreme northern end of the trench was removed and the trench in this location was manually excavated to the full depth of 36 inches (0.9 m). Investigators did not record any significant materials beneath the iron pipe.

Figure 25. Photograph of previously unrecorded Grave Shaft 2 extending out of Trench 2's west wall.

CHAPTER 7: EXHUMED BURIAL REINTERMENT

Once the archeologists confirmed that there was sufficient space available in the study area, the project team moved forward with the reinterment plan. On Wednesday, November 17th, the day after the archeological scraping, AmaTerra staff retrieved all the exhumed burial remains and associated artifacts from the FACTS facility in San Marcos, transported them to the reinterment site west of the Chapel, then documented PARD's reinterment process, monitoring for any unanticipated exposure of unmarked burials. AmaTerra concludes that all of the exhumed remains were respectfully and successfully reinterred on site with no unmarked burials observed. Below is a summary of the reinterment effort.

Remains Retrieval at FACTS

Prior to initiating fieldwork, and outside of AmaTerra's direct involvement, PARD staff constructed 30 burial boxes that would hold the exhumed human remains and associated artifacts (collectively "the remains"). PARD staff worked with FACTS personnel to transfer those remains into their respective burial boxes and seal them for reburial. The boxes were made of dark-stained wood, each measuring approximately 27 x 14 x 13 inches (69 x 36 x 32 cm; **Figure 26**). Remains from infant burials were placed two individuals per burial box (Burials 6 and 10, Burials 13 and 33, Burials 14 and 28, Burials 15 and 19, Burials 24 and 30, and Burials 32 and 39). The identification numbers assigned to each burial during the exhumation phase (Burials 1–40) were incompatible with PARD's internal inventory system. PARD staff assigned a new number to each burial that would be compatible, adding a "1" before the original burial number (e.g., exhumed Burial 24 was assigned the inventory ID "124"). Once the remains were transferred and sealed, PARD and/or FACTS staff wrote the individual's burial ID number on the lid's exterior.

Figure 26. A representative photograph of the burial boxes prior to reinterment. Note the "1" added to each marked burial number on the top of each box.

AmaTerra staff members Mason Miller and Dr. Katherine Seikel drove two large vehicles to the FACTS facility and arrived at approximately 10:30 AM that Wednesday morning to carry the remains to Oakwood Cemetery. Dr. Seikel checked that the inventoried remains from each burial were accounted for at the FACTS facility in their corresponding burial box when AmaTerra staff arrived in the building. Dr. Seikel documented this on an inventory/custody transfer form that AmaTerra prepared for the project (see **Appendix B**). Dr. Seikel then checked each burial box again before approving FACTS personnel to carry it out of the facility and into the waiting vehicles. Dr. Seikel cross-documented the infant burials that were placed two individuals per burial box as well. Four bags of fill dirt collected from Burials 13/113, 14/114, and 17/117 were also marked on the inventory and transferred to the vehicles to be reinterred with their corresponding burial boxes. AmaTerra and FACTS representatives each countersigned the inventory form at both cross-checks, confirming and documenting that all remains had been removed from the facility and transferred to AmaTerra's

vehicles. AmaTerra staff left FACTS at around 11 AM and drove with the remains from San Marcos to Oakwood Cemetery to meet PARD cemetery staff who were ready to physically reinter them.

Reinterment at Oakwood Chapel Site

Mr. Miller and Dr. Seikel arrived at the Chapel just after noon. One vehicle at a time was driven into the fenced study area, next to the exposed reinterment trench. PARD staff unloaded the burial boxes inside and arranged them on the ground surface next to the trench in the order they had planned to rebury them (**Figure 27**). This order corresponded with the temporary burial markers PARD staff installed on the ground surface to the trench's west earlier that day. Once all of the boxes and the four bags of fill material were out of the AmaTerra vehicles, Dr. Seikel and PARD staff cross-checked the transfer against the inventory form and countersigned it, documenting that the remains were in the City's possession once again.

Figure 27. PARD staff lay out the burial boxes and confirm they are arranged in their prescribed reinterment order.

PARD staff added a layer of sand into the trench base to make sure that the burial boxes were stable once they were in place and to reduce the potential for voids beneath them. PARD staff member, Boyce Freitag, placed the burial boxes into the trench in their prescribed order, one next to the other (**Figure 28**). The boxes were pushed flush against the trench's east wall (the wall closest to the chapel) leaving approximately 10 inches of space along the west side to avoid the exposed, newly documented Grave Shaft 2 just inside the west wall (see Chapter 5). Mr. Freitag then poured the fill

Figure 28. PARD staff lower the burial boxes into the reinterment trench. Note the sand along the trench base.

soil collected from Burials 13/113, 14/114, and 17/117 on top of their respective burial boxes (**Figure 29**). The reinterment trench was dug to a sufficient depth that the tops of the boxes would be approximately 16 inches (~41 cm) below the ground surface once the trench was backfilled.

As the boxes were lowered into place, the crew realized that the reinterment trench was approximately 10 inches too short. Mr. Freitag extended the trench base manually with a shovel, and AmaTerra staff inspected the removed fill and the newly exposed soil faces and confirmed that no unmarked graves were present. The last burial box was then lowered into place once the trench was extended enough to fit it (**Figure 30**).

As stated previously, PARD staff did not use the excavated soil to rebury the remains. That soil was hauled away during the archeological scraping phase. Instead, cemetery staff reburied the remains with high-quality silty loam the department had purchased for this purpose. Mr. Freitag directed a tipper truck operator who poured the fill material into the trench in a series of layers (**Figure 31**). Between each layer, PARD staff tamped the soil down then sprayed it with a hose, saturating it into a slurry that would fill in any inaccessible voids (**Figure 32**). This process continued until the trench had been backfilled to the natural grade with compacted, saturated soil, leaving just enough vertical space for new sod. PARD staff also sodded the first scraped trench that was abandoned during the archeological investigations. Once the sod was in place, the site was compacted once more and sprayed with more water (**Figure 33** and **Figure 34**).

I (Mason Miller) can attest that, though PARD staff were naturally excited and pleased to have reached this significant milestone, all of the staff completed their work in such a conscientious, professional, and respectful manner that it is worth noting here.

Figure 29. PARD staff member, Boyce Freitag, pours the burial fill associated with the infant burials (white bags) onto their corresponding burial boxes.

Figure 30. Burial boxes in place at the northern end of the reinterment trench. Note the 139/132 box extends beyond the trench's northern terminus. Note the temporary grave markers with circular metal tags.

Figure 31. PARD staff pour the first layer of new fill into the reinterment trench.

Figure 32. PARD staff saturate a layer of new fill inside the reinterment trench before adding a second layer of soil.

Figure 33. The reinterment site after the trenches were backfilled and newly sodded.

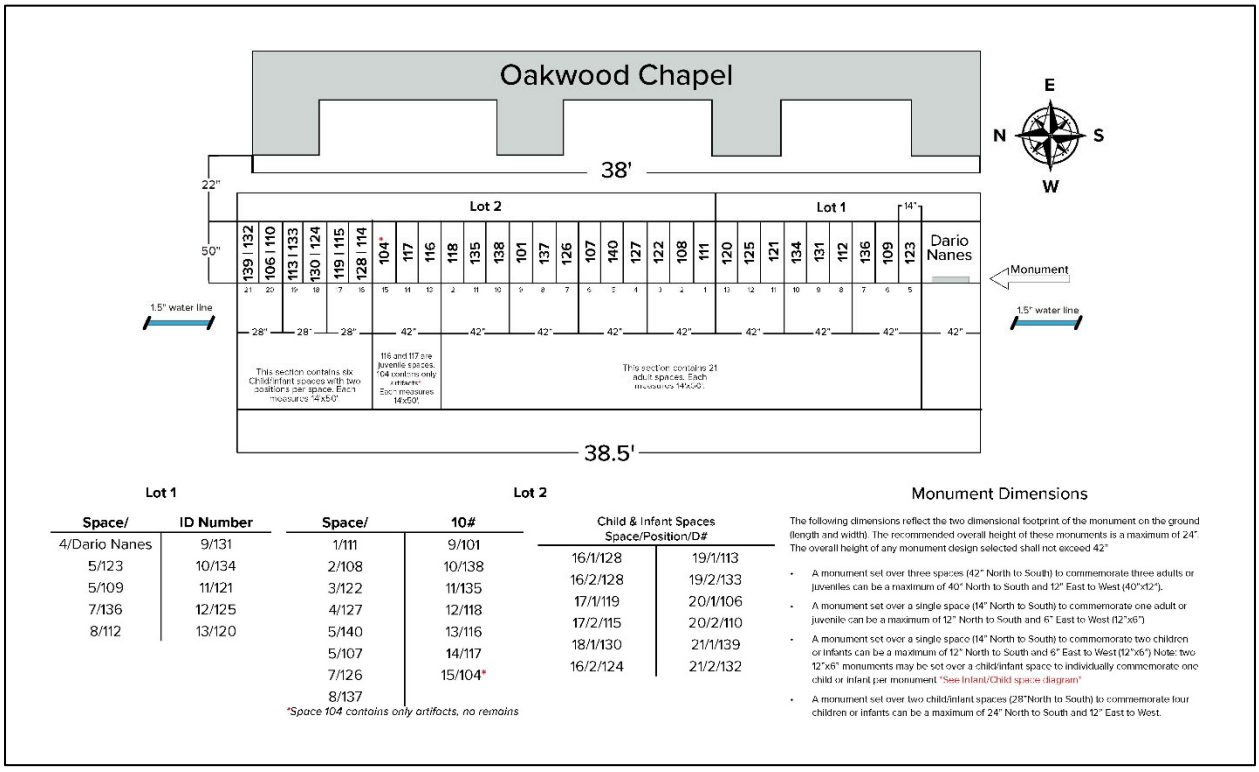

Figure 34. A representation of the final burials within the reinterment trench prepared by PARD in May of 2022.

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CHAPTER 8: "ALL TOGETHER HERE" – A SUMMARY OF CHAPEL BURIAL REINTERMENT PUBLIC OUTREACH

Online Public Symposium

The City's Oakwood Cemetery Chapel reinterment effort began in earnest in the fall of 2019. The project team intended to host a public symposium commemorating what they had hoped would have been a recent successful return of the exhumed remains. Once the Coronavirus Pandemic hit a few months later, all plans for fieldwork were put on indefinite hold. The planned symposium's venue and scope shifted to accommodate the delayed field schedule and the need for attendees and speakers to participate virtually.

Visit symposium website.

To meet this need, PARD hosted "All Together Here: A Community Symposium for Discovery and Remembrance," a two-day, online symposium that was free for the public. The first day's sessions broadcast live through the Zoom online meeting platform on Friday, October 9, 2020, from 3 – 8 PM. The second segment (also on Zoom) ran the following day, Saturday, October 10, 2020, from noon – 5 PM. Forty speakers from across the country – archeologists, historians, cultural anthropologists, funeral directors, City officials, etc. – joined PARD staff to discuss a range of topics related in some way to the Oakwood Chapel burial project. The reader can access the "All Together Here" symposium website online at http://oakwoodsymposium.org (or scan the QR code to the right on your mobile device).

The symposium's 12 sessions included discussions on (among others; **Table 2**):

- cemetery archeology;
- a public question and answer session regarding Hicks & Company's exhumation report;
- DNA analysis from cemetery contexts;
- a historical context of the City of Austin and its diverse communities at the time of the burials;
- ways of memorializing previously unmarked burials; and
- best practices for future similar situations.

AmaTerra staff joined Dr. Maria Franklin, Professor at the University of Texas at Austin, and PARD staff on the symposium's development committee. AmaTerra archeologists also took part as speakers or moderators in three of the sessions (see

Table 2).

View symposium videos on YouTube.

The City calculated that more than 300 registrants from the public attended the live session. PARD later posted recordings of the symposium on YouTube, where the videos have amassed nearly 1,000 views as of this writing. The reader can view the videos on the "All Together Here" symposium website referenced above. The videos are also accessible as a playlist on YouTube at https://www.youtube.com/playlist?list=PLelTMMBW0YOQV6QssY0ufCEu2sm5n_zcX (or scan the QR code to the left on your mobile device).

Table 2. "All Together Here" Online Symposium Summary

Title	Description	Speaker(s)
Day 1 - Friday, October 9 (Host: Laura Esparza, Division Manager, Museums and Cultural Programs, City of Austin)		
Session 1 - Process of Discovery (3:00 PM)	Welcome	Christopher Shorter, Assistant City Manager, City of Austin
Session 2 - Understanding the Oakwood Cemetery - Keynote and Archeology Findings Discussion (3:15 PM)	Hear from the team that oversaw the Oakwood Cemetery archeological investigation from the early stages of permitting and monitoring through the exhumation process and final report. Panelists, including experts in the field of archeology and bio-archeology, will discuss what the analysis of artifacts and skeletal remains can tell us about the people who were discovered. The report, "Archaeological Monitoring and Exhumations City of Austin's Oakwood Cemetery Chapel Restoration Project" was released in May 2020 and developed by Hicks & Company and the Forensic Anthropology Center at Texas State University.	Dr. Kate Spradley, Biological Anthropologist, Texas State University Brittany McClain, Archeologist, AmaTerra Environmental, Inc. Brandon Young, Archeologist, Hicks & Company Bradford Jones, State Archeologist, Texas Historical Commission Moderator: Dr. Maria Franklin, Archeologist, The University of Texas at Austin
4:45 PM Dinner Break (relevant video content stream)		
Session 3 - No Rest, No Peace: Cemeteries in Peril (6:00 PM)	All across the United States, the cemeteries and grave sites of communities of color have been neglected, forgotten and desecrated. Experienced archeologists share their experiences with projects of various scales, including the Dallas Freedman's Cemetery project. Panelists will discuss best practices and lessoned learned.	Doug Boyd, Archeologist, Cox|McLain Environmental Consulting Duane Peter, Archeologist, DP Heritage Consulting Sergio Iruegas, Archeologist, GTI Environmental Moderator: Mason Miller, Archeologist, AmaTerra Environmental, Inc.
Session 4 - Understanding Our Ancestors Through Anthropology (7:00 PM)	The multi-faceted field of anthropology provides valuable insights into the lives of African American ancestors. Genetic anthropologists from the University of Connecticut will discuss	Dr. Deborah Bolnick, Genetic Anthropologist, University of Connecticut

Title	Description	Speaker(s)
	the study of ancient DNA analysis in important projects in Texas and Georgia. Physical anthropologists from New South Associates will discuss how the science of physical and mortuary anthropology, coupled with geophysical techniques, search and rescue dogs, and exploratory trenching led to the discovery of more than 100 burials in Georgia. The Avondale Burial Place Project sensitively accommodated development and scholarly research with the concerns of the descendant community and extensive public outreach.	Samantha Archer, Anthropologist, University of Connecticut
		Dr. J.W. "Joe" Joseph, Archeologist, New South Associates
		Dr. Hugh "Matt" Matternes, Mortuary Archeologist, New South Associates
		Moderator: Kim McKnight, Program Manager, Historic Preservation and Heritage Tourism, City of Austin

Day 2 - Saturday, October 10 (Host: Laura Esparza, Division Manager, Museums and Cultural Programs, City of Austin)		
Session 5 - How We Revere our Ancestors (12:00 PM)	Welcome	Carre Adams, Culture and Arts Education Manager, George Washington Carver Museum, City of Austin
Session 6 - The Value of Bio-Archaeology to Communities (12:10 PM)	Recorded presentation on the lasting research and community impact of information that can be learned from bio-archeological investigations.	Dr. Michael Blakey, Anthropologist, College of William and Mary
Session 7 - Many Histories, One Burial Ground (12:30 PM)	Analysis from the Oakwood Cemetery Archeological Project indicates that the individuals who were discovered were of African, Mexican, and European descent. Historians and researchers from Huston-Tillotson University and the University of Texas discuss the context of the lives of the people of color buried in Oakwood Cemetery from 1839–1914.	Dr. Diana Ramey Berry, Historian, The University of Texas at Austin
		Dr. Emilio Zamora, Historian, The University of Texas at Austin
		Dr. Theodore Francis, II, Historian, Huston-Tillotson University
		Moderator: Gregory Farrar, Exhibit Assistant, Oakwood Cemetery Chapel, City of Austin
Session 8 - We All Grieve (1:30 PM)	Different cultural expressions of death and mourning can be found in cemeteries throughout the South. Join scholars and authors from Duke University and University of Massachusetts, an Austin-based archeologist, and leadership from Six Square: Austin's Black Cultural District, for a discussion about unique cultural traditions associated with the loss of loved ones.	Dr. Karla FC Holloway, Professor Emeritus, Duke University
		Pamela Benson Owens, Director, Six Square
		Dr. Nedra Lee, Anthropologist, University of Massachusetts, Boston
		Dr. Tim Griffith, Archeologist, AmaTerra Environmental, Inc.
		Moderator: Steph McDougal, Historian, McDoux Preservation
		Dr. Arro Smith, Researcher, Save Austin's Cemeteries

Title	Description	Speaker(s)
Session 9 - Forgotten No More: How to Memorialize (2:45 PM)	Community members and cemetery advocates discuss the various ways to memorialize the rediscovered individuals through memorials, art, and programs.	Jennifer Chenoweth, Museum Site Coordinator, Oakwood Cemetery Chapel, City of Austin
		Rev Daryl Horton, Pastor, Mount Zion Baptist Church
		Maria Solis, Genealogist, Tejano Genealogy Society of Austin
		Moderator: Dr. Jodi Skipper, Anthropologist, University of Mississippi
Session 10 - As It Unfolded: Transparency and Public Process (3:30 PM)	The discovery of burials beneath the Oakwood Chapel was a devastating event for the community and staff working to revitalize Austin's cemeteries. City staff will discuss how the guidance from local leadership and community relationships built through a recent cemetery master planning process helped establish a foundation for moving forward.	Kevin Johnson, Project Manager, Parks and Recreation Department, City of Austin
		Kim McKnight, Program Manager, Historic Preservation and Heritage Tourism, City of Austin
		Moderator: Caitlen Hill, Program Manager II, Cemetery Operations, City of Austin
Session 11 - Best Practices for Difficult Discoveries (3:45 PM)	Looking to the future, community members discuss how to engage the public with information, participation, and ownership when difficult discoveries are made.	Stephanie Lang, Director, Equity & Community Advocacy, Center for Community Engagement, UT-Austin, and Founder of RECLAIM
		Jane Rivera, Anthropologist
		Ora Houston, Citizen, prior District 1 Representative, Austin City Council
		Sally Victor, Historian, Save Austin's Cemeteries
		Moderator: Rachel Feit, Archeologist, Acacia Heritage Consulting
Session 12 - Closing (4:50 PM)	Seeking participation and healing.	Natasha Harper Madison, District 1 Representative, Austin City Council

"All Together Here" Digital Exhibit

The PARD staff also created an interactive ESRI Story Map-based exhibit, also called "All Together Here," for the public to learn about Oakwood Cemetery, the chapel restorations, burial discovery and exhumation, and the reinterment. The exhibit is accessible online and at a dedicated kiosk in the chapel building (**Figure 35**). Visitors can review highlights of the burial excavation findings, see photographs of some of the exhumed artifacts, and explore interactive data dashboards related to the bioarcheological findings (burial age, sex, ethnicity, etc.) and burial dates and locations for the roughly 30,000 individuals interred at Oakwood Cemetery. The reader can view the "All Together Here" digital exhibit online here: https://arcg.is/jKWev (or scan the QR code to the right on your mobile device).

Visit digital exhibit.

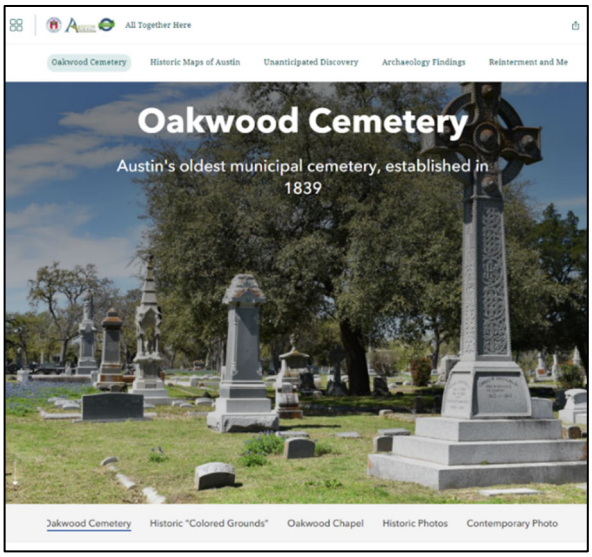

Figure 35. Screen capture of the "All Together Here" Interactive Exhibit Landing Page developed by PARD.

Post-Reinterment Blessing Ceremony

View the Blessing Ceremony on YouTube.

The City hosted a candle-lit blessing ceremony at the Oakwood Chapel in the evening of Monday, November 29, 2021, for peace to those who were disinterred and closure to the community and to the PARD staff who worked on the Chapel project. The ceremony opened with accordionist, Alan Garcia, playing the 19th-century hymn "Nearer My God to Thee" (**Figure 36**). PARD's Museums and Cultural Programs Manager, Laura Esparza, then introduced (in order): 1) Simone Talma Flowers, Executive Director of Interfaith Action of Central Texas; 2) Father Larry Covington, Priest at St. Theresa Catholic Church; and 3) Reverend Daryl Horton, Pastor at Mt. Zion Baptist Church for non-denominational, Catholic, and Protestant blessings and commitments to the earth (respectively). Musician Javier Jara then played guitar and sang "Volver a los 17" (Return of the 17) while ceremony attendees were encouraged to lay flowers at the grave sites (**Figure 37** and **Figure 38**). This marked the end of the ceremony. A video of the ceremony is available on the "All Together Here" website and is accessible on YouTube at https://youtu.be/c2t2NY88xPA (scan the QR code above on your mobile device to view the video).

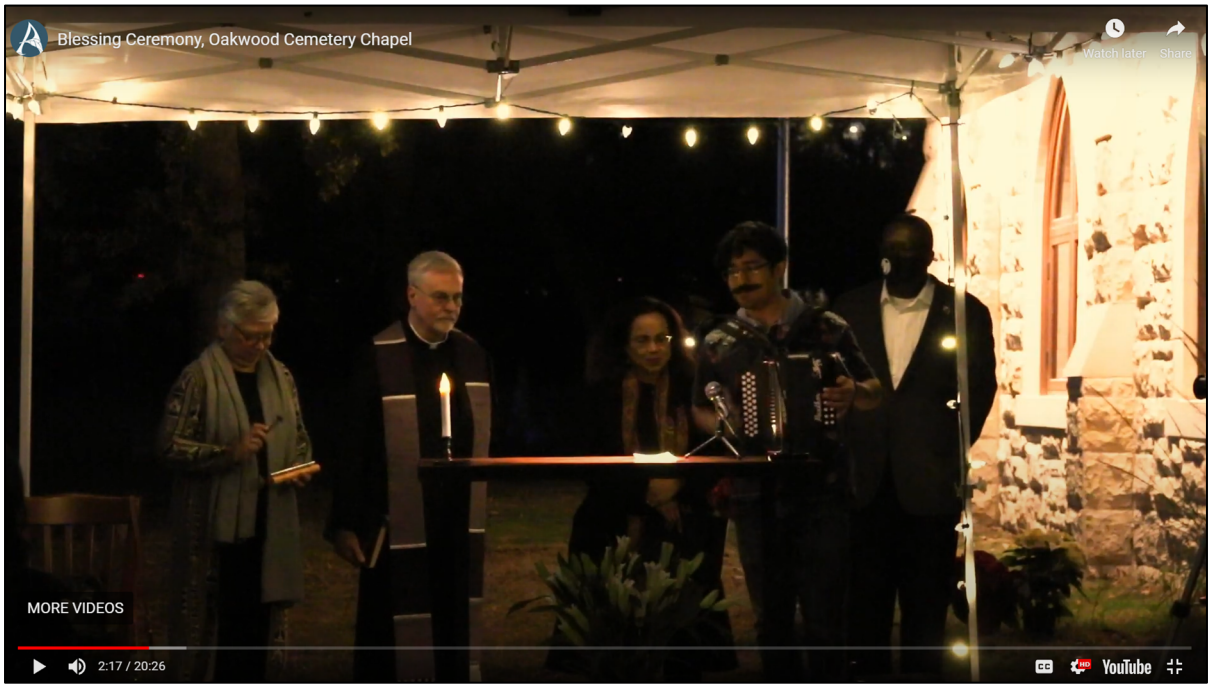

Figure 36. YouTube video screen capture of Alan Garcia (at the podium) plays "Nearer My God to Thee" on the accordion before (remaining, from left to right) Laura Esparza, Father Larry Covington, Simone Talma Flowers, and Reverend Daryl Horton offer their remarks and blessings.

Figure 37. YouTube video screen capture of Javier Jara singing "Volver a los 17" while ceremony attendees lay flowers at the reinterred individuals' grave sites.

Figure 38. YouTube video screen capture of flowers laid at the reinterment site. Note: PARD staff had returned Dario Nanes' (Burial 29) marker to its original location. (Photo courtesy Kim McKnight)

CHAPTER 9: SUMMARY AND CONCLUSIONS

The fieldwork that AmaTerra archeologists participated in during the week of November 15th, 2021 marked the end of more than four challenging years of investigation, coordination, and community engagement surrounding the burial exhumations at the City's Oakwood Cemetery Chapel in downtown Austin. Archeologists closely monitored the excavation of two reinterment trench candidates just west of the chapel wall. Archeological monitors observed a previously unrecorded unmarked burial in the first trench candidate (Trench 1) leading PARD to abandon it. Field personnel did observe a second previously unrecorded grave shaft in the second trench alternative (Trench 2) but concluded that the grave shaft would be avoided during reinterment. AmaTerra staff then successfully transferred the remains and their associated artifacts and grave goods of 21 individuals disinterred beneath the chapel in 2017 and 2018 from the FACTS facility in San Marcos to the chapel where PARD personnel reinterred them close to their original resting place.

The Principal Investigator concludes that no significant archeological resources – most notably human remains or burials – were impacted during the archeological investigations or the reinterment effort. With all exhumed remains reburied and no additional materials exposed, the Principal Investigator recommends that the City has completed its project-related obligations under the ACT and no further archeological fieldwork or coordination is necessary.

This report is offered in partial fulfillment of Antiquities Permit 9602. All project-generated notes, photographs, and other materials will be permanently curated at the Center for Archaeological Studies at Texas State University.

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APPENDIX A: REGULATORY COORDINATION

ANTIQUITIES PERMIT:
TRANSFER APPLICATION FORM

GENERAL INFORMATION (attach additional sheets as needed)

Permit Number 9602 Expiration Date 11/10/2030
First/Second *(circle one, if applicable)* Permit Extension Expiration Date _____
Project Name Oakwood Cemetery Chapel Remains Re-interment Project
Justification for Permit Transfer The original permit holder is not longer with AmaTerra (investigative firm).

INVESTIGATIVE FIRM CHANGE ☐ YES ☒ NO

Original Investigative Firm Name AmaTerra Environmental, Inc.
Mailing Address 11842 Rim Rock Trail
City, State, Zip Austin, TX 78737
Email Address anorment@amaterra.com
Office Phone Number 512.329.0031

Proposed Investigative Firm Name _____
Mailing Address _____
City, State, Zip _____
Email Address _____
Office Phone Number _____

PRINCIPAL INVESTIGATOR CHANGE ☒ YES ☐ NO

Original Principal Investigator Name Timothy Griffith
Mailing Address _____
City, State, Zip _____
Email Address _____
Office Phone Number _____ Cell Phone Number 512.545.5312

Proposed Principal Investigator Name Aaron Norment with AmaTerra
Mailing Address 11842 Rim Rock Trail
City, State, Zip Austin, TX 78737
Email Address anorment@amaterra.com
Office Phone Number 512.329.0031 Cell Phone Number 512.922.5327

CERTIFICATIONS—ORIGINAL PRINCIPAL INVESTIGATOR

I, Timothy Griffith, as the original Principal Investigator, or representative of _____ (Investigative Firm), do certify that intent of this proposed transfer is to ensure the completion of the above-referenced permit. I also understand that the Archeology Division staff will review this request in order to determine if the proposed permit transfer will meet the requirements of the permitted project, including whether the proposed Principal Investigator is eligible to receive an Antiquities permit in accordance with *Rules of Practice and Procedure for the Antiquities Code of Texas, Chapter 26*. I further understand that the Commission may approve or disapprove the proposed transfer. If the transfer is approved, I will relinquish all records and collections relating to the permitted project to Aaron Norment with AmaTerra, the new Principal Investigator or Investigative Firm.

Original Principal Investigator or Representative of the Investigative Firm

_____ Date _____

(*Signature)*

CERTIFICATIONS —PROPOSED PRINCIPAL INVESTIGATOR

I, Aaron Norment, as the proposed Principal Investigator, employed by AmaTerra Environmental, Inc. (Investigative Firm), do certify that there are no existing circumstances that would prevent my completion of the above-referenced permit project. I further understand that the Archeology Division staff will review this request for permit transfer in order to determine whether I am eligible to receive an Antiquities permit in accordance with *Rules of Practice and Procedure for the Antiquities Code of Texas, Chapter 26*. I acknowledge that the Commission may approve or disapprove the proposed transfer. If the transfer is approved, I will accept all records and collections relating to the permitted project and assume responsibility to fulfill the requirements as stated in the permit.

Proposed Principal Investigator or Representative of the Investigative Firm

Aaron Norment Date 04/07/2021

(*Signature)*

FOR OFFICIAL USE ONLY

Date reviewed _____ Reviewer Name _____

❑ Transfer approved
Date _____
❑ Revised permit issued and attached

_____
for Mark Wolfe, Executive Director

❑ Transfer denied
Date _____ Reason for denial _____

_____

Texas Historical Commission
Archeology Division
P.O. Box 12276, Austin, TX 78711-2276
Phone 512/463-6096
www.thc.state.tx.us

TEXAS HISTORICAL COMMISSION
real places telling real stories

State of Texas

TEXAS ANTIQUITIES COMMITTEE

ARCHEOLOGY PERMIT # 9602 (TRANSFERRED)

This permit is issued by the Texas Historical Commission, hereafter referred to as the Commission, represented herein by and through its duly authorized and empowered representatives. The Commission, under authority of the Texas Natural Resources Code, Title 9, Chapter 191, and subject to the conditions hereinafter set forth, grants this permit for:

Monitoring

To be performed on a potential or designated landmark or other public land known as:

Title: ***Oakwood Cemetery Chapel Remains Reinterment Project***
County: ***Travis***
Location: ***Oakwood Cemetery, Austin, Texas***

Owned or Controlled by: (hereafter known as the Permittee):

City of Austin Parks and Recreation Department
919 W 28th 1/2 St
Austin, TX 78705-3536

Sponsored by (hereafter known as the Sponsor

City of Austin Parks and Recreation Department
919 W 28th 1/2 St
Austin, TX 78705-3536

The Principal Investigator/Investigation Firm representing the Owner or Sponsor is:

Aaron Norment
AmaTerra Environmental
11842 Rim Rock Trail
Austin , TX 78737

This permit is to be in effect for a period of:

10 Years and 0 Months

and Will Expire on:

11/10/2030

During the preservation, analysis, and preparation of a final report or until further notice by the Commission, artifacts, field notes, and other data gathered during the investigation will be kept temporarily at:

AmaTerra Environmental

Upon completion of the final permit report, the same artifacts, field notes, and other data will be placed in a permanent curatorial repository at:

Center for Archaeological Studies

Scope of Work under this permit shall consist of:

Monitoring permit for a professional archeologist on-site to observe construction activities that may or will damage cultural resources. The archeologist is required to report findings and impacts to sites to the Commission. See attached scope of work.

ARCHEOLOGY PERMIT # 9602 (TRANSFERRED)

This permit is granted on the following terms and conditions:

1) This project must be carried out in such a manner that the maximum amount of historic, scientific, archeological, and educational information will be recovered and preserved and must include the scientific, techniques for recovery, recording, preservation and analysis commonly used in archeological investigations. All survey level investigations must follow the state survey standards and the THC survey requirements established with the projects sponsor(s).

2) The Principal Investigator/Investigation Firm, serving for the Owner/Permittee and/or the Project Sponsor, is responsible for insuring that specimens, samples, artifacts, materials and records that are collected as a result of this permit are appropriately cleaned, and cataloged for curation. These tasks will be accomplished at no charge to the Commission, and all specimens, artifacts, materials, samples, and original field notes, maps, drawings, and photographs resulting from the investigations remain the property of the State of Texas, or its political subdivision, and must be curated at a certified repository. Verification of curation by the repository is also required, and duplicate copies of any requested records shall be furnished to the Commission before any permit will be considered complete.

3) The Principal Investigator/Investigation Firm serving for the Owner/Permittee, and/or the Project Sponsor is responsible for the publication of results of the investigations in a thorough technical report containing relevant descriptions, maps, documents, drawings, and photographs. A draft copy of the report must be submitted to the Commission for review and approval. Any changes to the draft report requested by the Commission must be made or addressed in the report, or under separate written response to the Commission. Once a draft has been approved by the Commission, one (1) printed, unbound copy of the final report containing at least one map with the plotted location of any and all sites recorded and two copies of the report in tagged PDF format on an archival quality CD or DVD shall be furnished to the commission. One copy must include the plotted location of any and all sites recorded and the other should not include the site location data. A paper copy and an electronic copy of the completed Abstracts in Texas Contract Archeology Summary Form must also be submitted with the final report to the Commission. (Printed copies of forms are available from the Commission or also online at www.thc.state.tx.us.)

4) If the Owner/Permittee, Project Sponsor or Principal Investigator/Investigation Firm fails to comply with any of the Commission's Rules of Practice and Procedure or with any of the specific terms of this permit, or fails to properly conduct or complete this project within the allotted time, the permit will fall into default status. A notification of Default status shall be sent to the Principal Investigator/Investigation Firm, and the Principal Investigator will not be eligible to be issued any new permits until such time that the conditions of this permit are complete or, if applicable, extended.

5) The Owner/Permittee, Project Sponsor, and Principal Investigator/Investigation Firm, in the conduct of the activities hereby authorizes, must comply with all laws, ordinances and regulations of the State of Texas and of its political subdivisions including, but not limited to, the Antiquities Code of Texas; they must conduct the investigation in such a manner as to afford protection to the rights of any and all lessees or easement holders or other persons having an interest in the property and they must return the property to its original condition insofar as possible, to leave it in a state which will not create hazard to life nor contribute to the deterioration of the site or adjacent lands by natural forces.

6) Any duly authorized and empowered representative of the Commission may, at any time, visit the site to inspect the fieldwork as well as the field records, materials, and specimens being recovered.

7) For reasons of site security associated with historical resources, the Project Sponsor (if not the Owner/Permittee), Principal Investigator, Owner, and Investigation Firm shall not issue any press releases, or divulge to the news media, either directly or indirectly, information regarding the specific location of, or other information that might endanger those resources, or their associated artifacts without first consulting with the Commission, and the State agency or political subdivision of the State that owns or controls the land where the resource has been discovered.

8) This permit may not be assigned by the Principal Investigator/Investigation Firm, Owner/Permittee, or Project Sponsor in whole, or in part to any other individual, organization, or corporation not specifically mentioned in this permit without the written consent of the Commission.

9) Hold Harmless: The Owner/Permittee hereby expressly releases the State and agrees that Owner/Permittee will hold harmless, indemnify, and defend (including reasonable attorney's fees and cost of litigation) the State, its officers, agents, and employees in their official and/or individual capacities from every liability, loss, or claim for damages to persons or property, direct or indirect of whatsoever nature arising out of, or in any way connected with, any of the activities covered under this permit.The provisions of this paragraph are solely for the benefit of the State and the Texas Historical Commission and are not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

10) Addendum: The Owner/Permittee, Project Sponsor and Principal Investigator/Investigation Firm must abide by any addenda hereto attached.

Upon a finding that it is in the best interest of the State, this permit is issued on 11/10/2020.

Brad Jones,
Archeology Division Director

Mark Wolfe,
Executive Director

Scope of Work for the Oakwood Cemetery Chapel Remains Reinterment for the City of Austin's Parks and Recreation Department, Travis County, Texas

Introduction/Project Description

The City of Austin's (COA's) Parks and Recreation Department (PARD) recently rehabilitated a 1914 historic mortuary chapel building at the City's Oakwood Cemetery in central Austin, Travis County, Texas. PARD contracted a firm to monitor construction activities and exhume 36 mid- to late-nineteenth-century human burials (infants to adults) that were discovered within the footprint of the chapel during the rehabilitation effort (Texas Antiquities Permit 7709; Haefner et al. 2020). Haefner et al (2020) completed their analysis and reporting for the project and the exhumed materials are currently held at the Forensic Anthropology Center at Texas State University (FACTS) in San Marcos, Texas. This Antiquities Permit application details the process of assessing the viability of a proposed reinterment site, west of the chapel, near the exhumation site using archeological methods and (if the site is viable) assisting the PARD in reinterring the physical remains and artifacts.

PARD's reinterment plan calls for the remains and artifacts to be transferred from FACTS and reinterred in purpose-built reinterment boxes adjacent to the chapel with two to four individual interments arranged within a single 10 x 3-foot burial plot. The reinterment plan was developed in consultation with the Texas Historical Commission (THC) and interested stakeholders and descendent communities potentially associated with the individuals that were disinterred. PARD has selected a roughly 20 x 40-foot site adjacent to the chapel that is their preferred reinterment site (**Figures 1 and 2**). This preferred site should have enough space for all the reinterred remains.

AmaTerra is proposing to archaeologically-assess PARD's designated reinterment site located directly west of the Oakwood Cemetery Chapel **(Figure 3**). Under this proposed Scope of Work, AmaTerra will 1) monitor mechanical scraping in the specified location to verify the area is devoid of human burials, and to assure that the exhumed remains and associated artifacts are reinterred without impacting human burials that are in place in the proposed reinterment area; and 2) oversee and assist with transferring the remains from the FACTS lab to their final reinterment location. On October 9-10, 2020, PARD held an online symposium for interested members of the public to attend to learn about and commemorate the individuals who were disinterred and reinterred as part of the overall project, including the archeological and bio-archeological reports. In addition, PARD has developed an interpretive exhibit for the project to be displayed online and at the Oakwood Cemetery Chapel and Heritage Center.

Comment on DNA Analysis

PARD has partnered with the University of Connecticut (UConn) to conduct DNA analysis on a yet-to-be determined sample of the recovered remains (see **Appendix A**). This DNA analysis is related to the scope of work detailed below but only from a practical/logistical perspective. Specifically, AmaTerra's work under an approved antiquities permit cannot begin until after DNA samples have been collected. Once the DNA extraction and UConn's preliminary analysis are complete - the latter to confirm that they have viable samples and do not need to retrieve more, PARD intends to reinter the remains and the artifacts associated with them under the terms of the permit. AmaTerra's analysis and reporting for their part of the project will continue independent of UConn's investigations and eventual reporting.

Management Summary

Several local and state cultural resource laws apply for the proposed project. Since PARD is an agency of the COA and a political subdivision of the State of Texas, all construction on lands they own are subject to state-level archaeological resource oversight outlined in the Antiquities Code of Texas (ACT). Working in the immediate vicinity of previously-recorded unmarked burials, it is important to note that the project may be subject to cemetery and human-burial-related regulation under the Texas Health and Safety Code (Title 13, Subchapter C, Chapter 711.036[a]) and the Texas Administrative Code Title 13, Part, 2 Chapter 22.5.

Summary of Background Information

Soils and Geology

The Geologic Atlas of Texas indicates that the underlying geology within the project area is Austin Chalk (Kau), which is comprised of Late Cretaceous-age deposits of marlstone and chalk (USGS 2020) (**Figure 4**). According to the US Department of Agriculture and Natural Resource Conservation Service's Web Soil Survey (2020), the project area is located within Urban land, Austin, and Whitewright soils (1 to 8 percent slopes). These soils are derived from loamy alluvium of Pleistocene age, and generally have a low potential for deeply buried archaeological deposits. The average soil profile extends beyond one meter in depth.

Oakwood Cemetery and Oakwood Cemetery Chapel

Established in 1839, Oakwood Cemetery was originally named City Cemetery, subsequently changed to Austin City Cemetery in 1859, and finally renamed Oakwood Cemetery in 1908 (Knott 2005; Haefner et al. 2020). This cemetery was used as the first municipal burial grounds within Austin, Texas. Oakwood Cemetery is listed on the NRHP and is also a Historic Texas Cemetery and a City of Austin Historic Landmark. The first burial within the cemetery occurred in 1839 with burials dating until present. The Oakwood Cemetery Chapel is located within Oakwood Cemetery along Main Avenue. The Oakwood Cemetery Chapel was constructed in 1914 and originally served as the mortuary chapel for the cemetery.

Previously-Recorded Sites and Surveys

Background research through the THC's Archaeological Sites Atlas (Atlas 2020) focused on the identification of archaeological sites, sites listed as State Antiquities Landmarks (SALs), Recorded Texas Historic Landmarks (RTHLs), sites listed on the National Register of Historic Places (NRHP), cemeteries, and previously conducted archaeological surveys within 200 meters of the project area because the proposed investigations are of such a small and targeted nature and archaeologists have a good understanding of the potential archaeological resources that might be encountered during the proposed scraping effort (**Figure 5**). The search identified Oakwood Cemetery has been designated as site 41TV1706, a NRHP district, and contains 13 historical markers commemorating individuals buried within the cemetery. One additional previously-recorded archaeological site – 41TV1764, unspecified on the Atlas – lies outside and west of the cemetery boundaries, and no previously conducted surveys fall within 200 meters of the project location (**Table 1**).

Oakwood Cemetery Chapel Investigations (2016-2020)

Archeologists, working under Antiquities Permit 7709, monitored chapel restoration and rehabilitation construction activities in the vicinity of and within the Oakwood Cemetery Chapel (Haefner et al. 2020). Archeological monitors documented 59 unmarked human burials during various construction activities (**Figure 6**). These burials date from the late nineteenth to early twentieth centuries. Thirty-seven (37) of the identified burials were exhumed and their remains and associated materials (discussed above) are proposed for reinterment under this scope of

work. Twenty-two (22) of the 59 unmarked burials were left in place as present and future construction activities would not impact these burials (Haefner et al. 2020).

One burial, attributed to Dario Nanes (1875), is marked and unexcavated/unexhumed at the southern end of the currently proposed investigation target area (see Figure 6). A marker for T.J. Wells (1927) is located west of the currently proposed investigation area. Archeologists exhumed three burials located beneath the Chapel walls during the restoration project (Burials B20, B21, and B25), just east of the currently proposed investigation area. Beyond those listed above, no additional markers or unmarked burials are known to exist within the currently proposed investigation area. During the chapel restoration effort, PARD conducted limited surface scraping within roughly the northern third of the currently proposed investigation area with no unmarked burials observed (Tonja Walls-Davis, personal communication). Besides one on-site photograph during construction, AmaTerra could not locate specific documentation of the lateral or vertical extent of this scraping. AmaTerra is therefore treating the proposed investigation area as not previously studied.

Historic Aerial Photograph and Map Interpretation
Historic imagery provides a summary of the development history of the project area beginning in the mid-twentieth century. A 1952 aerial photograph of Oakwood Cemetery (**Figure 7**) depicts the cemetery and main cemetery thoroughfare, oriented west to east, with access roads off the main road, oriented north to south, and substantial tree coverage that obstructs the view of headstones or burial plots. A 1956 Austin East topographic map depicts the historical Oakwood Cemetery Chapel within the cemetery boundaries along with main road running through the cemetery and adjacent roads (**Figure 8**). A 1966 aerial photograph depicts similar characteristics as the 1952 aerial imagery, although tree coverage has decreased (**Figure 9**). Lastly, the 1973 aerial imagery indicates little change from the previous aerials, however the proposed project area is no longer under tree coverage and the area to the west of the chapel appears to be devoid of marked headstones (**Figure 10**).

Overall, aerial photographs and topographic maps suggest that the Oakwood Cemetery reinterment location site has been subject to vegetation and tree removal maintenance. Though it is possible that the proposed location could contain unmarked burials, the overlying soil will most likely be disturbed due to the initial construction of the chapel. Though the imagery does not depict active burials in this section and this area may never have been used for human interments, it cannot be discounted outright through the archival data alone. Accordingly, archaeological field investigation is warranted.

Scope of Survey Work

Field Methodology
For the excavation/scraping, the mechanical equipment will consist of either a standard rubber-tire backhoe or a mini excavator with a flat-bladed, toothless excavation bucket at least three feet wide. PARD Cemetery Operations staff, individuals familiar with earth work in a cemetery context, will be the equipment operators. One archaeological monitor and one osteologist will be on site to guide the machine scraping within the reinterment target site. No known and/or marked burials, notably the Nanes grave, will be disturbed during scraping. The monitor will watch for soil discolorations or other features consistent with previously excavated burial shafts and/or artifacts, hardware, or remains of actual human burials. Any soil stains that are grouped together, cardinally oriented, or artifact-bearing will be inspected in more detail to assess if they are likely human burials. One hundred percent (100%) of the proposed target site will be scraped down, in the presence of the archaeological monitor personnel, to a depth sufficient to confirm the

presence/absence of likely human burials. If no evidence of human burials (e.g. burial shafts, hardware, human remains, etc.) is identified during scraping, the scraped area will be left open pending the City communicating to community stakeholders (including the THC, via email) its intent to reinter the exhumed remains. During this time, AmaTerra and the City will initiate the remains transfer (see below).

If at any time, evidence of human burials is identified, all work in the immediate vicinity will cease until such time as PARD can be notified (see **Protocol for Protection and Treatment of Human Burial Remains** below). If unmarked burials are observed within the areas proposed for reinterment, further scraping will likely be abandoned, and the City will pursue alternative plans for reinterment at a different location (currently identified as Austin Memorial Park Cemetery). Observations of newly-discovered burials will be recorded and documented through field notes, forms, and photographs and marked using hand-held GPS units. Work may continue away from the find location(s) if the team is confident that the find(s) will not be impacted as a result.

If documented during scraping investigations, archaeological site information will be recorded on standardized forms and eventually presented as a site update to the Texas Archeological Research Laboratory (TARL) for inclusion in their archives.

AmaTerra and PARD will notify the THC of field findings – particularly in relation to the target site's viability for reinterment – upon completion of scraping. The notification will include a brief description of the findings (e.g. count and location of features) as supporting documentation of the determination.

Remains Transfer
If archaeologists confirm through scraping that the target reinterment site is devoid of burials, AmaTerra will coordinate with PARD and FACTS to physically and legally transfer all human remains and associated artifacts (collectively "remains"), and copies of all field-generated notes, forms, photographs, and other materials to AmaTerra's offices in Austin. At PARD's instruction, AmaTerra will rent a van or SUV to collect the human remains and artifacts and transfer them to AmaTerra's laboratory where they will be stored in a dignified manner until it is time for them to be reinterred. Legal chain of custody will be recorded at each stage of the remains' transfer from FACTS, ultimately to the reinterment site. AmaTerra staff will document each stage of the remains' transfer from FACTS, ultimately to the reinterment site with legal chain of custody documents. The completed documents will be provided to PARD at the reinterment's conclusion with copies included as a report appendix.

Reinterment
AmaTerra staff archaeologists/osteologists will be on site to monitor reinterment plot excavation and assist with burial placement. As stated above, PARD plans to reinter two to four individuals, each within their own burial boxes, within each standard 10 x 3-foot burial plot. PARD staff will direct the burial placement and excavate the plots using the mechanical equipment described above. PARD have specified that they have made 27 x 14 x 12.5-inch boxes for each burial's reinterment. AmaTerra will assist with archaeological monitoring of backfill replacement after each of the remains are reinterred by PARD.

Reporting and Curation
The results of the investigation will be compiled into a professional report as required under Chapter 26 of the THC's Rules of Practice and Procedure. The report will describe the project area conditions and cultural background, existing and newly-documented sites (including newly-produced site trinomials), and SAL-eligibility of these sites based on the requirements of 13 TAC 26.5(35), 13 TAC 26.20(1) and 13 TAC 26.20(2). One copy each of the draft report will be

submitted to the THC for review and comment, then resubmitted following the address of any of these comments. All archaeological sites located during the survey will be recorded at the Texas Archeological Research Laboratory (TARL), and all site-related photographs and records will be curated at that facility according to their standards. Upon acceptance of the draft report by the THC, AmaTerra will transmit paper and electronic copies of the final report to the THC in accordance with permitting requirements: one paper and two electronic copies (one with sites and one without). Artifacts will not be collected during the investigations. However, all photographs and records of sites will be curated at Texas State University's Center for Archaeological Studies in accordance with the requirements of the issued antiquities permit.

Protocol for Protection and Treatment of Human Burial Remains

Historic human burials and cemeteries shall be treated in accord with provisions of the Texas Health and Safety Code (Title 8, Subchapter C, Chapter 711.036[a]) in addition to the requirements of the Antiquities Code of Texas and Section 106 of the National Historic Preservation Act. Historic Native American burials and cemeteries shall also be treated under this protocol. These laws require that any and all exhumation, handling, treatment, and reburial of human burial remains be done with dignity and respect for the individual.

Given the proximity to the chapel and the previously exhumed unmarked burials beneath the chapel footprint, additional human remains may be identified during investigations. In the event that human remains or funerary objects are discovered in the course of the project, all ground-disturbing work at that location will be stopped and PARD will be notified immediately.

AmaTerra may conduct further exploratory investigations using manual archaeological techniques around the discovery site to confirm if the find is likely associated with a human burial. If such exploratory investigations are warranted, they will determine the full extent of the unmarked burial(s) within the project limits for cemetery plotting and mapping purposes. If evidence of a human burial is observed, all work is likely to cease immediately as the reinterment plans at this location will likely be abandoned altogether.

In the unlikely event that human remains are inadvertently exposed during scraping, at the time of discovery, all exposed human remains will immediately be covered with light weight plastic sheeting and reburied under a shallow blanket of soil to prevent unnecessary exposure while a final determination is made regarding treatment of the discovered remains. Ideally, any identified burials will be mapped and documented *in situ* and not disinterred. PARD will ensure that the discovery site is secured and protected from damage or vandalism 24-hours per day, every day until final plans are implemented to avoid the burial remains. Individuals or groups not directly involved with the archaeological investigations at Oakwood Cemetery should not be allowed to view, handle, or photograph human remains, except by authorization of the THC, in consultation with PARD.

No human remains or funerary objects will be removed, and all material will be left *in situ*. Such documentation for unmarked burials will include field methods in accord with professional standards for documenting objects recovered during archaeological excavations and shall include photographs, drawings, and notes.

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Referenced Figures

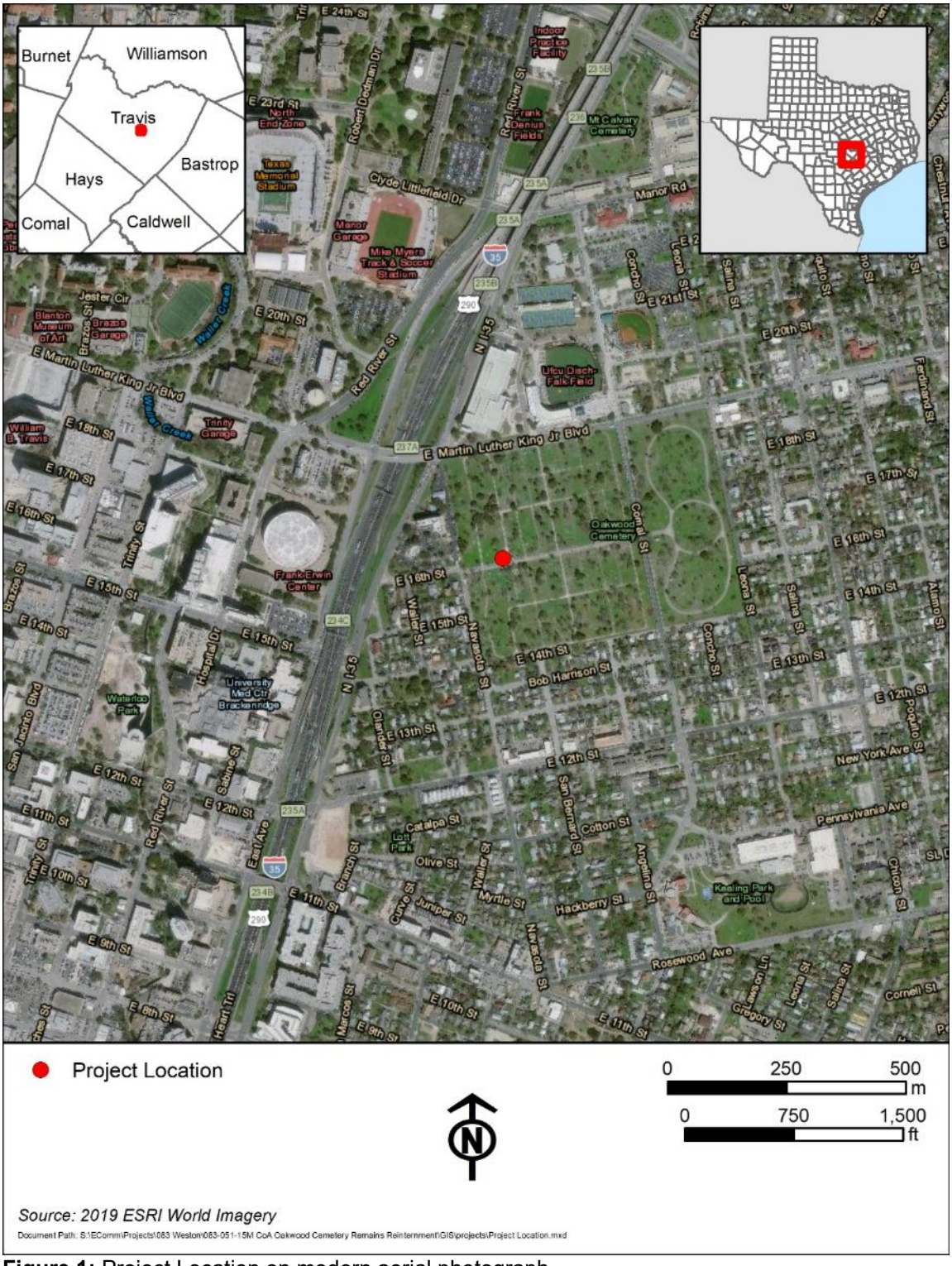

Figure 1: Project Location on modern aerial photograph.

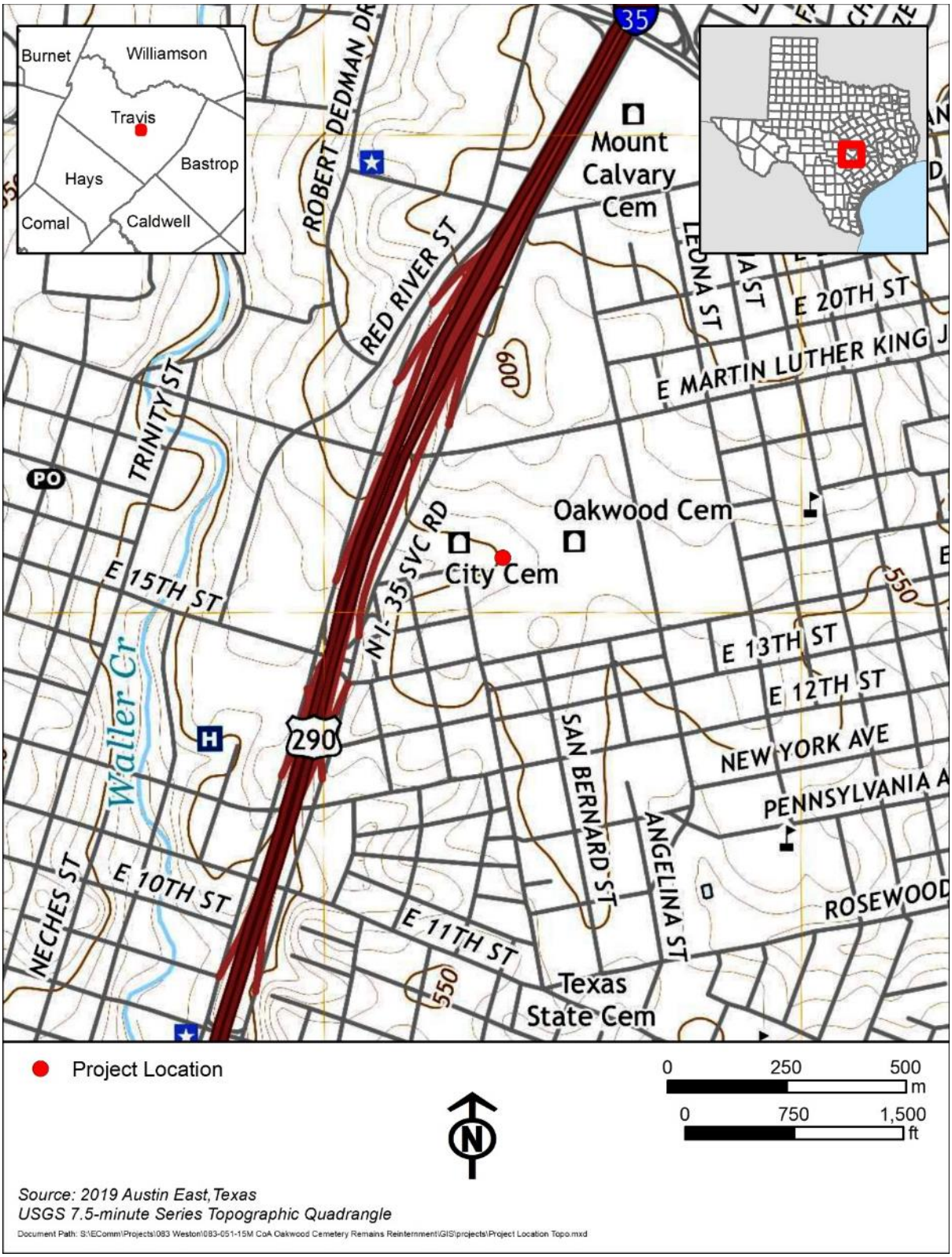

Figure 2: Project Location on an Austin East, Texas USGS Topographic quadrangle.

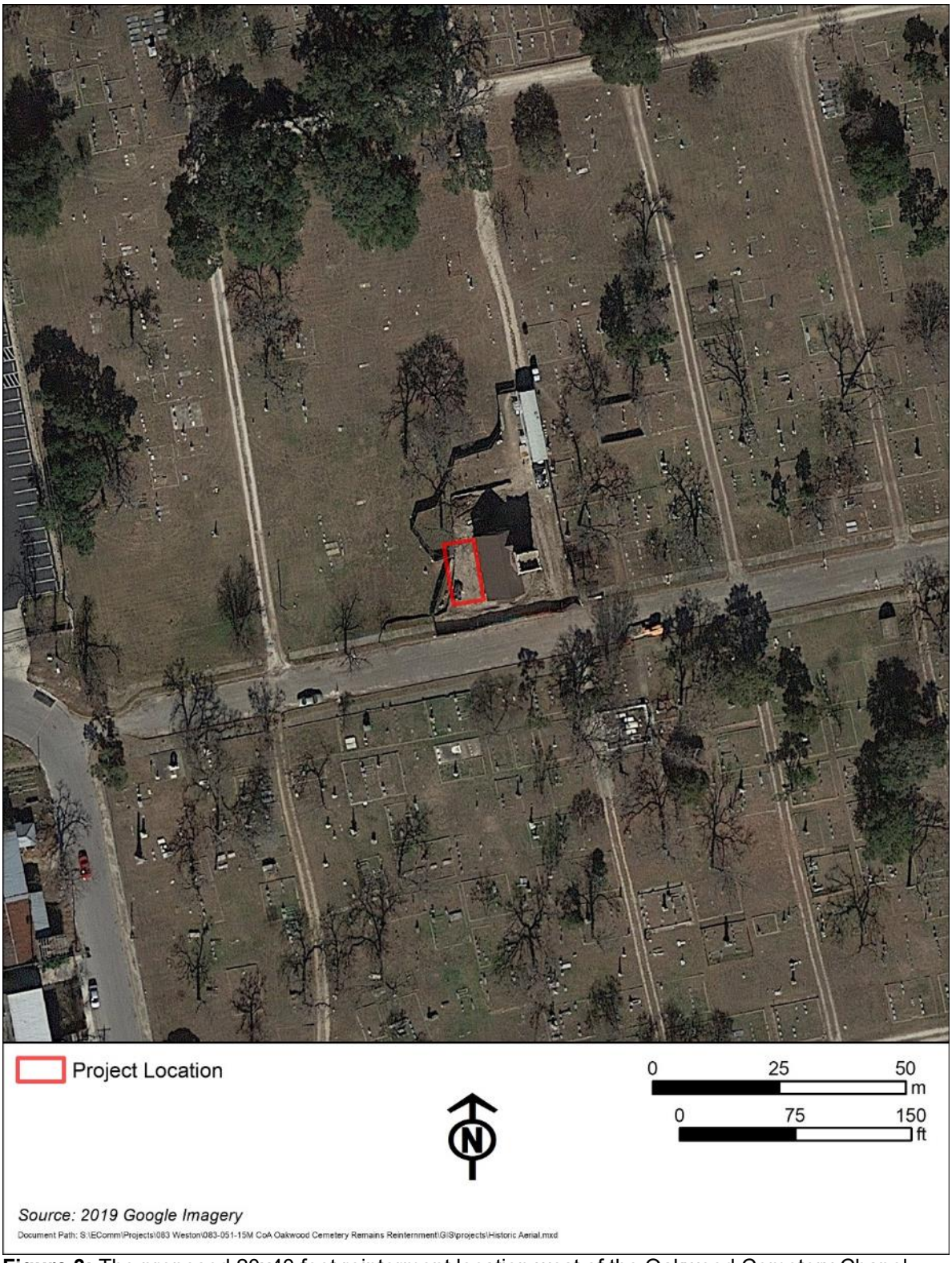

Figure 3: The proposed 20x40 foot reinterment location west of the Oakwood Cemetery Chapel.

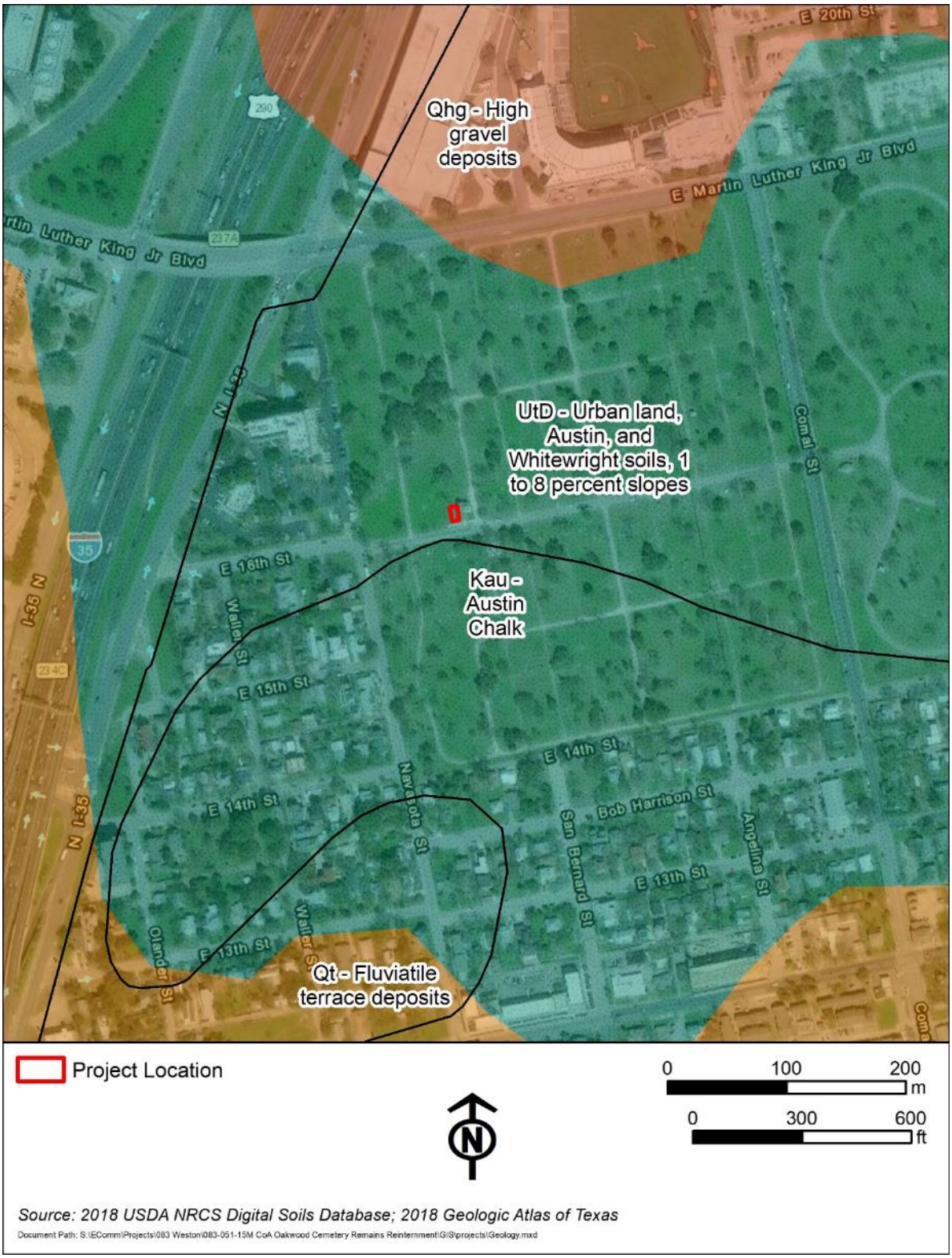

Figure 4: Recorded geology and soils within the project location.

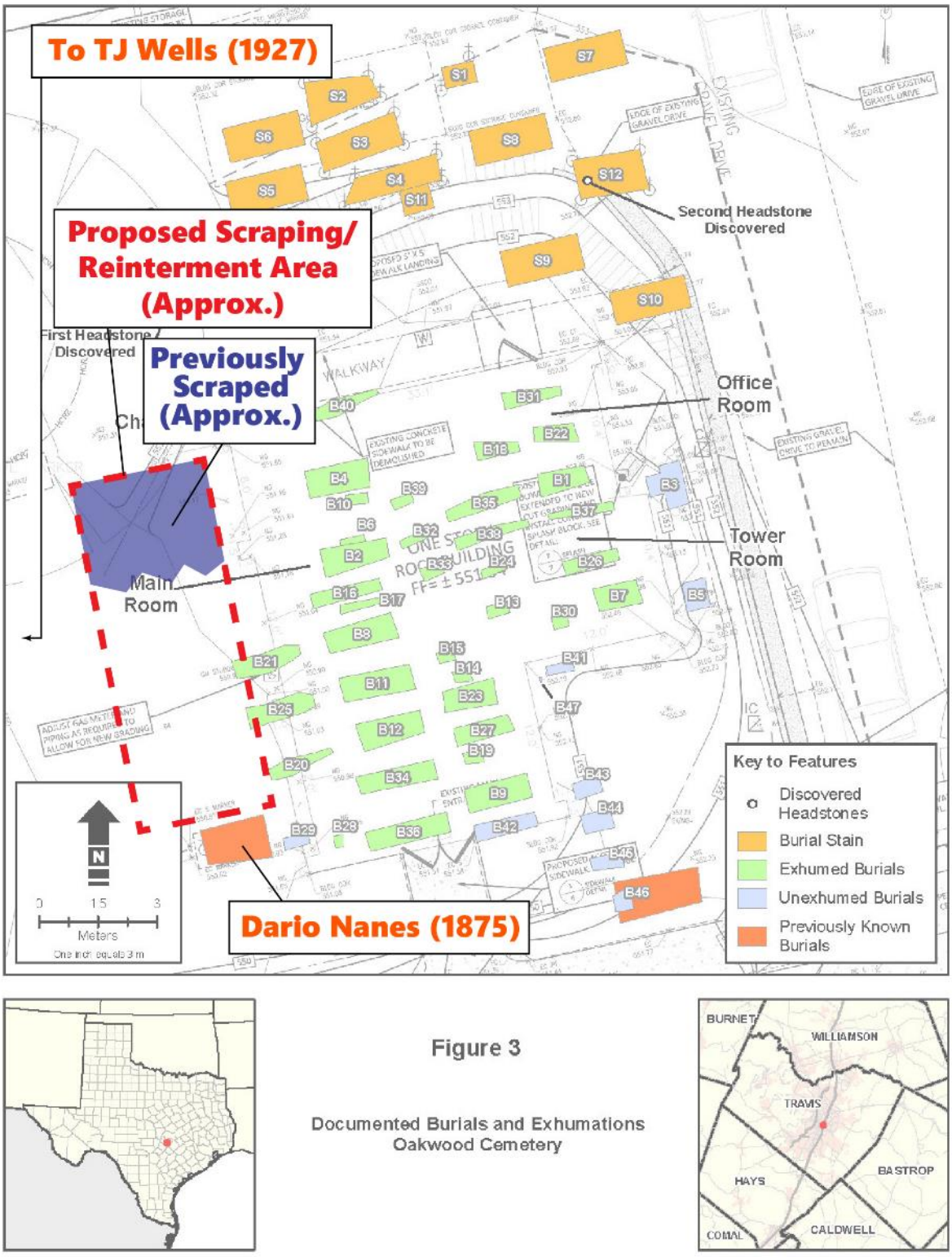

Figure 3

Documented Burials and Exhumations
Oakwood Cemetery

Figure 6. Current study area and relevant annotations overlaid on Haefner et al. 2020 (Figure 3).

Figure 7: The proposed project area overlaid on a 1952 aerial photograph.

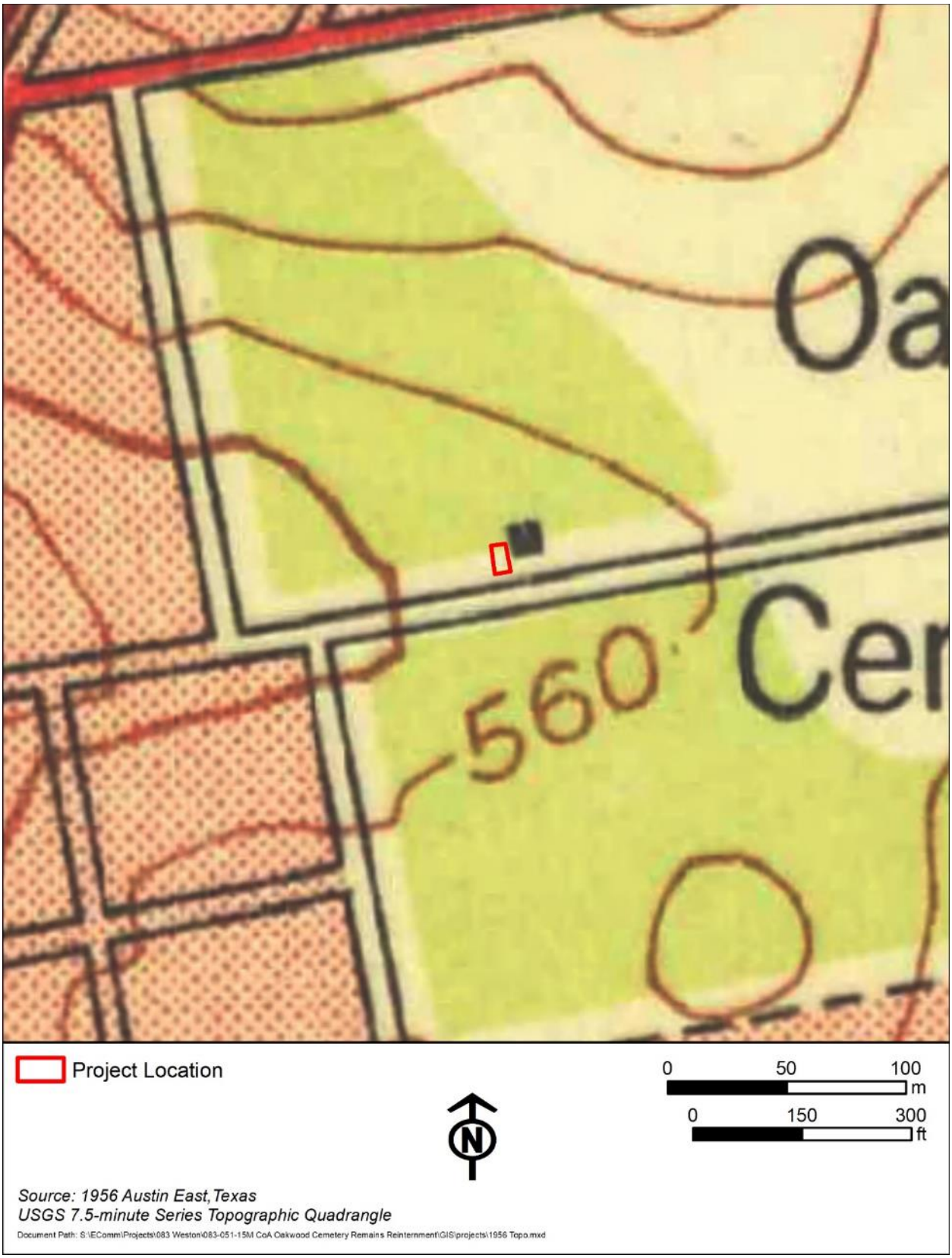

Figure 8: The proposed project area overlaid on a 1956 USGS topographic map.

Figure 9: The proposed project area overlaid on a 1966 aerial photograph.

Figure 10: The proposed project area overlaid on a 1973 aerial photograph.

Referenced Table 1

Table 1: Cultural Resources within 200 meters of the project area (Atlas 2020).

Site	Type	Record date	Recorder	Eligibility Status	Within Cemetery
4TV1706	Unspecified; presumed Oakwood Cemetery	Unspecified	Unspecified	Unspecified	Yes
41TV1764	Unspecified	Unspecified	Unspecified	Unspecified	No
Jacob Fontaine	Historical Marker	1986	N/A	Eligible	Yes
Gen. George W. Terrell	Historical Marker	1936	N/A	Eligible	Yes
George Washington Glasscock	Historical Marker	2014	N/A	Eligible	Yes
Oakwood Cemetery	Historical Marker	1972	N/A	Eligible	Yes
Major William Martin “Buck” Walton	Historical Marker	1999	N/A	Eligible	Yes
Joseph Baker	Historical Marker	1936	N/A	Eligible	Yes
Swante Palm	Historical Marker	1990	N/A	Eligible	Yes
Andrew Jackson Hamilton	Historical Marker	1994	N/A	Eligible	Yes
John Crittenden Duval	Historical Marker	1936	N/A	Eligible	Yes
Abner Hugh Cook	Historical Marker	1985	N/A	Eligible	Yes
Susanna W. Dickinson	Historical Marker	1993	N/A	Eligible	Yes
Texas Land Commissioner, Johann Jacob Groos	Historical Marker	1974	N/A	Eligible	Yes
Col. Lewis Miles Hobbs Washington	Historical Marker	1983	N/A	Eligible	Yes

Appendix A: University of Connecticut's Proposed DNA Analysis Summary for the Remains from the Oakwood Cemetery Chapel

The extraction and analysis of DNA from the remains of individuals interred in the Oakwood Cemetery offers a unique opportunity to learn more about their identities, familial connections, and life experiences. DNA analysis may make it possible to shed light on:

(1) the genetic ancestry of each individual

(2) genetic sex

(3) the individual's diet and experience with disease (assessed by examining animal and plant DNA from hardened tooth plaque, known as dental calculus, and the presence of pathogen DNA)

(4) experiences of stress and trauma and the way those lived experiences may have become embodied (through analysis of epigenetic marks on genes related to stress regulation)

(5) patterns of genetic variation and relatedness among these individuals

(6) relatedness between individuals buried at the Oakwood Cemetery and individuals alive today

If DNA preservation in the Oakwood Cemetery remains is sufficient to permit these analyses, living individuals who think they may have a connection to these individuals based on their family history may submit a saliva sample to the Bolnick Lab for DNA analysis, allowing relatedness to be assessed. All genetic data will be considered in conjunction with osteological, archaeological, genealogical, ethnographic, and archival research in order to contextualize the genetic findings and better reconstruct the identities, experiences, and relations of these people.

In order to undertake DNA analysis, tooth and/or bone samples will be collected from the remains of each individual. Lauren Springs (Department of Anthropology, University of Texas at Austin) will coordinate with Dr. Kate Spradley to gain access to the remains at Texas State and will select 1-2 samples per individual based on the quality of preservation. Teeth (preferentially molars and premolars) will be predominately targeted, as they are among the skeletal elements most likely to retain endogenous DNA post-mortem and can be sampled using nondestructive or minimally destructive techniques. After screening the remains visually, it is possible that Lauren might suggest targeting bone rather than teeth for some individuals, as that might yield the highest likelihood of extracting endogenous DNA (i.e., DNA original to the bone material, rather than DNA from other humans, plants, animals, or bacteria). In this case, dense cortical bone, such as the petrous bone (from the skull), phalanges, or carpal/tarsal bone, would be targeted for sampling. It should be noted that DNA extractions from bone may require the utilization of minimally destructive techniques, which are detailed below with the extraction protocol.

Once the sampled remains are shipped via FedEx or UPS to the Department of Anthropology at the University of Connecticut, they will be securely stored and analyzed in the University of Connecticut Ancient DNA Laboratory, a restricted-access facility that is always locked and accessible only to members of the Bolnick Lab. This newly constructed, 800 sq. ft. state-of-the-art ISO Class 6/7 cleanroom facility is designed specifically for studies of ancient DNA and is dedicated to ancient DNA research, using only laboratory procedures that have been optimized for

the study of degraded ancient DNA. The lab is equipped with overhead germicidal ultraviolet lights, positive air pressure, HEPA-filtered air, two laminar flow hoods, and all lab equipment necessary for this research. Extensive contamination controls are employed to minimize contamination from external sources and detect/exclude it if present. The analysis of modern DNA is carried out in a separate 834 sq. ft. BSL2 laboratory that is fully equipped for molecular genetic research.

Nondestructive and minimally destructive sampling techniques and protocols designed for degraded ancient DNA (Bolnick et al. 2012; Dabney et al. 2013; Rohland et al. 2018) will be used at all stages of the analysis. To eliminate any surface DNA contamination that may have been introduced from external sources during excavation and handling, each sample will first be submerged in Clorox bleach for 5-10 minutes, rinsed twice with DNA-free water, and irradiated with 254 nm ultraviolet light for 5-10 minutes per side. Teeth will then be incubated overnight in a non-hazardous solution containing EDTA and proteinase K, and then removed, rinsed with water, and securely stored until all are ready to return to PARD. DNA will be isolated from the solution. This nondestructive DNA extraction protocol does not involve breaking, crushing, drilling, powdering, or otherwise deliberately disfiguring the sample, but it should be noted that chemical reactions during the overnight incubation can sometimes damage tooth roots or lead to cracks or microfractures in the tooth crown. Should destructive methods be determined necessary, only minimally destructive methods would be used. In this case, the researcher can section (cut) one or more tooth roots from the teeth and proceed with the nondestructive protocol with the roots. This approach ensures that the tooth crown stays intact and does not sustain any damage. In a situation where no teeth are available or likely to yield DNA and a bone sample has therefore been selected for analysis, a Dremel rotary tool would be sued to obtain ~120 milligrams of bone powder (roughly the amount of powder that one would find in a pill). The rest of the bone would remain intact.

Once the extractions have been completed in the Ancient DNA Laboratory, a straightforward workflow is followed to make initial assessments of DNA preservation. The first step has two purposes: (1) to identify the preservation quality, and (2) to make an initial determination of the individual's mitochondrial (mtDNA) lineage. To make this assessment, the team will sequence a portion of the first hypervariable region of the individual's mtDNA following the protocol in the Bolnick et al. (2012). Nearly every cell in the human body has many mitochondria, which makes the mitochondria the most available source of DNA for post-mortem remains (Willerslev and Cooper 2005). mtDNA can also be used to trace matrilineal relatedness and ancestry for every individual because mtDNA is maternally-inherited. mtDNA sequences will be compared to the Cambridge Reference Sequence (CRS) and the individual's mtDNA lineage will be determined by assessing diagnostic differences from the CRS.

After the initial extractions and diagnostic tests are performed, each sample will be prepared into a genomic library with a protocol specifically designed for degraded DNA (Rohland et al. 2015). DNA libraries will be prepared in the Ancient DNA Laboratory at the University of Connecticut, and then the libraries will be sequenced at the Center for Genome Innovation at the University of Connecticut. DNA libraries will be first sampled using the MiSeq platform in order to assess the

quality of each library, estimate contamination from exogenous sources of DNA (non-human sources such as animal, plant, and bacterial DNA), and ensure successful sequencing on the high-throughput NextSeq instrument that will be used for genome sequencing.

The sequence data derived from the genome libraries will first be used to assess nuclear DNA preservation and to identify and eliminate exogenous DNA from the data. Once these steps are complete, the team will be able to: make a determination of genetic sex, characterize the overall genetic ancestry of each person, evaluate patrilineal and biparental relatedness among these individuals, and assess familial relationships with potential living descendants who choose to submit a sample for DNA extraction. The genomic library data will also allow the team to determine the sequence of the complete mitochondrial genome and confirm the initial assessment of the individual's mtDNA lineage.

To assess patterns of stress and trauma on a molecular level, the team will identify individuals with well-preserved nuclear DNA and analyze epigenetic patterns from genes related to stress regulation. These epigenetic patterns will allow the team to make inferences about the ways that traumatic and stressful life experiences may have become molecularly embodied by these individuals and potentially passed on to their descendants. Epigenetics refers to a subfield of genomics in which researchers study modes of gene expression and the chemical markers that become attached to a person's DNA over the course of their lifetime. By studying these patterns on an individual's genes, the team will be able to gain an understanding into how that person's life experiences potentially shaped the over- or under-expression of their genes. The presence or absence of these marks can provide information about how environmental factors, including but not limited to, overexposure to stressful and traumatic events and poor nutrition, particularly in childhood, shaped a person's phenotypic expression. The team will employ newly developed methods, some pioneered by previous members of our lab, to study epigenetic marks in ancient DNA (Smith 2015).

To assess each individual's experience with disease, the team will excise partial or whole pathogenic genomes from the dataset in order to identify the presence of disease in individuals with appropriate preservation (Stone and Ozga 2019). If dental calculus is available for extraction (as yielded from an individual's teeth), the team would perform additional extractions using these samples in order to investigate the presence of animal and plant DNA and potentially help reconstruct these individuals' dietary patterns (Warinner et al. 2015). The study of ancient disease, dietary reconstruction, and the human microbiome in ancient DNA are relatively new areas of interest in ancient genomics, and these studies therefore would be truly unique and insightful if available for the undertaking.

Once the initial DNA extraction procedure is completed, the remains can immediately be returned to Austin for re-internment. Funding for this project will be obtained from grants from the University of Connecticut, the Wenner-Gren Foundation for Anthropological Research, and the National Science Foundation.

The genomic information from the Oakwood Cemetery burials will be analyzed alongside the genomic information from the Bullhead Camp Cemetery remains, also known as the Sugar Land

95, from Fort Bend County, Texas as part of Samantha (Sam) Archer's dissertation project. Sam will provide a report to Austin Parks and Rec every three months (once the remains arrive in Connecticut) that summarizes the results to date from the Oakwood burials, continuing until the project is completed. Sam anticipates defending her dissertation sometime in late 2023 or spring/summer of 2024. The research team is also available and eager to participate in any kind of community outreach and/or collaboration, virtually or in person, when permissible. The team would like to contribute to public exhibits (digital and otherwise) once they at least have partial analyses completed, if such exhibits take place before the full genetic analyses are completed. The team will also happily contribute to exhibits in the future should they take place after Sam's dissertation work is complete.

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APPENDIX B: REMAINS TRANSFER VERIFICATION CHECKLIST

City of Austin, Oakwood Cemetery Chapel Human Burial Remains Reinterment Documentation (Chain of Custody)

AmaTerra Environmental, Inc. has prepared this form to document the transfer of assembled and sealed burial boxes that contain exhumed burial remains from the Oakwood Cemetery Chapel excavations (as detailed in Haefner et al. 2020). AmaTerra Environmental, Inc. assumes that others have inventoried and accounted for all remains - including but not limited to bones, teeth, DNA sample tissue, personal items, casket hardware, and other artifacts - and placed those remains in their corresponding and marked burial boxes. AmaTerra Environmental, Inc. does not guarantee the accuracy of any processes completed by others prior to or following AmaTerra Environmental, Inc.'s possession of the burial boxes.

Texas State University Forensic Anthropology	Printed Name		Signature	
City of Austin - Parks and Recreation Department	Printed Name	Tonja Wells-Dau	Signature	

Burial # (Report)	*Age Category*	*Sex*	*COA Cemeteries Burial #*	*Burial Box at Grady Early Forensic Anthropology Facility*	*Comment (as necessary)*	*Burial Box Loaded on Truck(s)*	*Comment (as necessary)*	*Burial Box Unloaded at Oakwood Cemetery*	*Comment (as necessary)*	*Burial Box Interred at Oakwood Cemetery*	*Comment (as necessary)*
01	Adult	Male	**101**	☑		☑		☑		☐	
04	Indeterminant	N/A	**104**	☑	w/artifacts	☑		☑		☐	
06	Infant	N/A	**106**	☑	In box w/ 110	☑		☑		☐	
07	Adult	Male	**107**	☑		☑		☑		☐	
08	Adult	Male	**108**	☑		☑		☑		☐	
09	Adult	Female	**109**	☑		☑		☑		☐	
10	Infant	N/A	**110**	☑	In box w/106	☑		☑		☐	
11	Adult	Female	**111**	☑		☑		☑		☐	
12	Adult	Female	**112**	☑		☑		☑		☐	
13	Infant	N/A	**113**	☑	In box w/ 133	☑		☑		☐	
14	Infant	N/A	**114**	☑	In box 128	☑		☑		☐	
15	Infant	N/A	**115**	☑	In box w/ 119	☑		☑		☐	
16	Adult	Male	**116**	☑		☑		☐		☐	
17	Juvenile	N/A	**117**	☑		☑		☑		☐	
18	Adult	Male	**118**	☑		☑		☑		☐	
19	Infant	N/A	**119**	☑	In box w/ 115	☑		☑		☐	
20	Adult	Male	**120**	☑		☑		☑		☐	

Transferred from	**Organization**	Texas State University	Texas State University	AmaTerra Environmental
	Name	Courtney Siegert	Courtney Siegert	Katherine Seikel
	Signature			

Transferred to	Organization	AmaTerra Environmental	AmaTerra Environmental	City of Austin
	Name	Katherine Seikel	Katherine Seikel	Tonja Wells-Dau
	Signature			

	Date	11/17/2021	11/17/2021	11/17/2021
	Time	11 am	11 am	12:30 pm

Sheet 1 of 2

Burial # (Report)	Age Category	Sex	COA Cemeteries Burial #	Burial Box at Grady Early Forensic Anthropology Facility	Comment (as necessary)	Burial Box Loaded on Truck(s)	Comment (as necessary)	Burial Box Unloaded at Oakwood Cemetery	Comment (as necessary)	Burial Box Interred at Oakwood Cemetery	Comment (as necessary)
21	Adult	Male	121	☑		☑		☑		☐	
22	Adult	Male	122	☑		☑		☑		☐	
23	Adult	Female	123	☑		☑		☑		☐	
24	Infant	N/A	124	☑	In box w/130	☑		☑		☐	
25	Adult	Male	125	☑		☑		☑		☐	
26	Adult	Male	126	☑		☑		☑		☐	
27	Juvenile	N/A	127	☑		☑		☑		☐	
28	Infant	N/A	128	☑	In box w/ 114	☑		☑		☐	
30	Infant	N/A	130	☑	In box w/124	☑		☑		☐	
31	Adult	Male	131	☑		☑		☑		☐	
32	Infant	N/A	132	☑	In box w/139	☑		☑		☐	
33	Infant	N/A	133	☑	In box w/113	☑		☑		☐	
34	Adult	Male	134	☑		☑		☑		☐	
35	Adult	Male	135	☑		☑		☑		☐	
36	Adult	Male	136	☑		☑		☑		☐	
37	Adult	Male	137	☑		☑		☑		☐	
38	Adult	Male	138	☑		☑		☑		☐	
39	Infant	N/A	139	☑	In box w/ 132	☑		☑		☐	
40	Adult	Male	140	☑		☑		☑		☐	
Other Materials (as applicable)											
2	Indeterminant ("negative" burial; coffin wood only)		102	☐		☐		☐		☐	
			117/113/114	☑	4 bags of fill dirt	☑		☑		☐	
				☐		☐		☐		☐	
				☐		☐		☐		☐	

Transferred from	Organization	TEXAS STATE UNIVERSITY	TEXAS STATE UNIVERSITY	AmaTerra Environmental
	Name	COURTNEY SIEGERT	COURTNEY SIEGERT	Katherine Seikel
	Signature			
Transferred to	Organization	AmaTerra Environmental	AmaTerra Environmental	County of the Sta
	Name	Katherine Seikel	Katherine Seikel	Ronjay Walk-Do
	Signature			
	Date	11/17/2021	11/17/2021	11/17/2021
	Time	11 am	11 am	12:30 pm