



**Assessment of Legislation Applied to Historic and Archaeological Human Remains
and Burial Sites in Pennsylvania**

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Executive Summary

This research provides a comprehensive assessment of Pennsylvania laws and regulations related to the discovery of historic and archaeological burial sites and human remains. It reviewed state legislation on human remains, burial grounds, earth moving activities, and historic resources to determine the authority and responsibilities of various public entities involved in mitigation efforts. It also provides several policy considerations for Pennsylvania, which are based on legislation established in other states.

Key Considerations

- Enact legislation specifically for archaeological and historic human remains and burials that allows for respectful treatment of remains and supervision of procedures by professional archaeologists. It is suggested that this legislation should supersede all other legislation that has been and may be applied to these types of cases.
- Upon discovery of possible human remains or burials, all work should stop immediately. Law enforcement should be notified within 48 hours and failure to comply should result in appropriate penalties. When remains are encountered during archaeological excavation, and/or when remains are determined to be more than 100 years old (not of medicolegal significance), law enforcement should notify the State Historic Preservation Office (SHPO) immediately. Legislation should distinguish between procedures for cemeteries and isolated burials.
- SHPO should have an appropriate annual budget to ensure it can fulfill its role, including: reviewing state-issued permits for construction and water quality; providing written documentation about site significance and allotted days for notification and survey; analyzing skeletal remains; notifying descendants; and establishing appropriate contingency plans.
- Financial responsibilities for disinterment and relocation should be the burden of the developer unless a descendant or cultural group claims responsibility for the remains.

- Archaeological monitors and osteology professionals should meet the U.S. Secretary of the Interior’s criteria for professional archaeologists. Additionally, SHPO should maintain a searchable list of firms and/or professionals, including osteologists and monument conservationists, who can be contacted to assist with projects.

Overview

This research provides a comprehensive assessment of Pennsylvania legislation related to human remains and burials. Archaeological and historic human remains and burials are found across Pennsylvania in the form of abandoned or forgotten cemeteries, or isolated, unmarked burials.

Federal legislation is enacted for projects on federal land that involve federal permits or oversight, or that are associated with federal funds, particularly when Native American remains are encountered.

However, no state-level legislation adequately addresses these types of sites when encountered on state-owned land, state-funded or state-assisted projects, or private property. In these situations, there is little agreement about who has jurisdiction of these sites, who can determine the ultimate fate of the remains, what sorts of actions are recommended, and who is financially responsible to ensure that the remains are handled in an appropriate manner. Organizations such as the Pennsylvania Historical and Museum Commission (PHMC), county coroners, local courts, local historic commissions, or property owners have been suggested as the appropriate caretakers for human remains in these cases, but there is little consistency and no formalized procedures or reporting. This relates to the fact that archaeological and historic burial sites are not considered archaeological resources under federal legislation.

Pennsylvania should consider remedying this legal oversight, as illustrated by situations such as the development of the former First Baptist Church of Philadelphia Cemetery. Hundreds of burials were inadvertently exposed in 2016 and 2017, and public outcry led the Philadelphia Orphan's Court to claim jurisdiction after months of confusion.

As development continues throughout the state, it is inevitable that additional abandoned or forgotten burial sites will be encountered. It is imperative that a clear procedure and chain of command be established to assist with these discoveries. Abandoned cemeteries should be treated as archaeological resources to help with this process.

Research Methods

To conduct this research, the researchers reviewed state legislation referencing human remains, burial grounds, disinterment, earth moving activities, and/or historic resources to determine authority and responsibilities of various entities involved with mitigation efforts.

Additionally, individuals from various state agencies and private firms were contacted to describe their experiences with human remains or burial cases to ensure representation of rural, urban, privately owned, state-funded, and federally funded projects. Furthermore, the research describes legislation from other states, wherein specific protocols have been developed for such cases, to provide guidance and demonstrate viable alternatives.

Research Findings

Identification of state legislation related to human remains and burials

Existing statewide legislation was not written for historic and archaeological human remains and burial sites. Singularly, none of the existing rules or laws can address the challenges and needs associated with historic and archaeological burial sites, such as the removal of skeletal material. Instead, these laws largely are concerned with recent deaths, suspicious deaths, perpetual care of established cemeteries, and disinterments of known individuals.

Interestingly, no legislation mandates that deceased human remains be reported to law enforcement or any other state agency upon discovery.

An 1887 Unconsolidated Statute, echoed in a 2018 amendment to the County Code Act, provides local courts in certain counties the right to handle inactive cemeteries with no input from relevant historical commissions. Despite their jurisdiction over historic cultural resources, PHMC has no explicit authority or budget to handle situations with human remains and burials. This lack of clarity and misalignment of authority has led to many parties piecemealing existing legislation to respectfully and sufficiently mitigate situations with archaeological or historic human remains.

Role of the Pennsylvania Historical and Museum Commission

PHMC is the official history agency of Pennsylvania. The State Historic Preservation Office (SHPO) and state archaeologist are part of PHMC. While PHMC is charged with the protection of the state's historic heritage, this authority does not extend to historic and archaeological human remains and burials or to sites on private property. Furthermore, PHMC's capabilities were severely limited with the passing

of Act 70 in 1995. This legislation resulted in the state government (via PHMC), rather than developers, becoming the responsible authority to ensure appropriate archaeological reconnaissance for development projects. However, PHMC was not granted staff or budgets to successfully manage these responsibilities. With limited oversight and decreased regulations, at present, PHMC cannot take on the added responsibilities associated with human remains, even though it is the most appropriate party to supervise these situations.

Identification of informal procedures used for historic and archaeological human remains and burials

This research conducted eight case studies from across Pennsylvania to demonstrate the variability of procedures that have been employed to navigate the ethical, financial, and administrative challenges associated with these types of situations. These cases include situations where historic or archaeological human remains or burials were anticipated and where they were inadvertently encountered.

While many agencies may be involved in mitigation efforts, PHMC is commonly identified in association with the tenets of 37 Pa.C.S. However, PHMC frequently cites its lack of authority and only provides recommendations to the parties involved with development and earth moving activities. In many cases, a coroner or medical examiner and/or a forensic anthropologist are notified to assess the remains. Once the remains have been positively identified, there is little congruence in next steps and notified parties. It is worth noting that the Pennsylvania Department of Transportation has established the most robust procedures regarding possible human remains, but these policies are internal regulations, not bound by legislation.

Procedures used by other states

Several states have specific legislation for cases involving historic or archaeological human remains or burials.

This research provides examples to describe the variability and factors that states may consider when establishing appropriate procedures. In many states, the SHPO or state archaeologist primarily has authority over historic burials, as well as a means of enforcing that authority (e.g., Nebraska).

In some cases, cemeteries and isolated burials are subject to different legislation (e.g., Massachusetts, Florida). In many cases, the developers or agencies necessitating removal or disturbance of human remains are required to shoulder the financial burden (e.g., Virginia, Florida), though in some cases the state is responsible and afforded an annual budget (e.g., Nebraska).

States that have the least comprehensive laws also consequently have the least oversight, the most difficulty documenting and assisting in such cases, and are more likely to be targeted by the public for their lack of action.

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Introduction

In recent years, cemeteries and burial places in Pennsylvania have been impacted by development, and human remains have been unearthed. The Pennsylvania Historical and Museum Commission (PHMC), under 37 Pa.C.S. (Historical and Museums), is charged with the collection, conservation, and interpretation of Pennsylvania's historic heritage, including both historic and archaeological sites and associated materials. However, associated human remains and burials are not specifically or effectively covered under this legislation. When archaeological or historic human remains or burials are discovered on state-funded projects, state land, or private property during development, neither 37 Pa.C.S., nor other Pennsylvania legislation provides clear guidance for identification and processing. Above-ground features, such as gravestones, at present receive more consideration for preservation in Pennsylvania cultural resource-related legislation than the preservation of human remains interred below them. At least three laws directly relate to the conservation of above ground features (e.g., 18 Pa.C.S., 37 Pa.C.S., and the Historic Remains Preservation Act, 1994), but few explicitly discuss the significance or preservation of subterranean features.

This research outlines existing legislation regarding human remains and burials and explain why such legislation is ineffective for archaeological and abandoned historic contexts. These explanations are illustrated with specific case studies from Pennsylvania that also demonstrate how existing legislation has been applied to the advantage or disadvantage of each situation. Relevant legislation is summarized from other states to offer alternative strategies that may be useful for Pennsylvania. Finally, recommendations are provided for future research.

Background

Occasionally during earthmoving projects, such as development and agriculture, human remains or burial sites are inadvertently discovered. This is not surprising. People have been living in Pennsylvania for thousands of years. Pennsylvania is home to some of the oldest archaeological sites in North America, representing numerous diverse cultures. Each culture has unique rituals associated with death, and many of these rituals involve aspects of subterranean interments. Countless burial locations may have been used over time with no written record or physical markers to identify them. When human remains are interred, regardless of cultural association or the types of grave markers, the intent is for these remains to lie in perpetuity without disruption or desecration.

However, historic and archaeological human remains and burial sites are sometimes encountered. Unfortunately, Pennsylvania legislation does not clearly articulate the handling and processing of remains and artifacts from these types of cases. When such remains are identified, there are no responsible authorities or clear legislation to indicate sequence of events, agencies to contact, permits to acquire, or other steps required to ensure respectful handling of these remains and sites. Instead, when developers attempt to mitigate concerns responsibly and respectfully, they may become mired in the multitude of complex, time- and cost-prohibitive, trans-agency, and sometimes conflicting legislation that exists in Pennsylvania—legislation designed for more recent funerary and medicolegal situations. Because historic and archaeological cases represent entirely different contexts, existing legislation is inappropriate, but developers, archaeologists, coroners, and other interested parties have no alternatives to consider.

Pennsylvania legislation provides guidance for the treatment of contexts such as known abandoned cemeteries (9 Pa.C.S. [Burial grounds]; Cemeteries and Graveyards Protected Act, 1849, P.L. 397, No. 296; Burial Grounds Conveyance Act, 1913, P.L. 551, No. 354; Burial Grounds, Municipal Control Act, 1923, P.L. 198, No. 144; Historic Burial Places Preservation Act, 1994, P.L. 141, No. 22), disinterment requests for specific individuals (28 Pa. Code § 1.25 [Disinterment of dead human bodies]), and the treatment of human remains (18 Pa.C.S. [Crimes and offenses]; The County Code Act, 1955, P.L. 323, No. 130; County Code – Amend Ambulances and Coroners Act, 1990, P.L. 602, No. 152). Because of the lack of legislation related to newly discovered historic and archaeological human remains and burials, state agencies and commercial entities often attempt to work within existing legislation. However, archaeological or abandoned historic human remains and burials should not be held to the same standard because these contexts often have no designated church or cemetery authorities, they have been lost to social memory, they have not been maintained to the same degree as active and known abandoned cemeteries, and they may not have been established or treated in similar manners as known cemeteries and burials.

For example, human remains are not always found in rectangular grave shafts with headstones and coffins to denote their presence. Purposeful inhumations can be found in many forms, including church cemeteries, frontier graves, family burial grounds, rural cemeteries, lawn parks, memorial parks, ossuaries, and earthen mounds, among others. Each type of cemetery exhibits differential presentation on the landscape, and associated human remains are differentially processed in each situation.

Recognizing this diversity, Pennsylvania broadly defines cemeteries as places for “the disposal or burial of deceased human beings, by cremation or in a grave, mausoleum, vault, columbarium, or other receptacle” wherein burial access is restricted to the general public (9 Pa.C.S. § 101). Furthermore, the

statute defines burial plots, wherein individuals may be interred but legal titles must be addressed prior to interment.

Such definitions cannot be applied to historic and archaeological burial contexts, many of which were instated prior to existing legal procedures and designations, and, therefore, may be argued as exempt from the spirit and intent of statutes such as 9 Pa.C.S. Regardless of the situation, any newly discovered cemetery deserves the same respect and care as formally recognized cemeteries. The interred individuals were people with personalities, cultures, values, beliefs, and loved ones who enacted the burial rituals. However, these burial contexts often become encumbered in unclear legislation that may impact the treatment of the remains.

In other words, existing legislation does not adequately address the different considerations necessary in historic and archaeological cases. These cases vary drastically from potential criminal cases and crime scenes in terms of medicolegal significance, and so they should not be subject to associated legislation (e.g., The County Code Act) that is designed for different purposes, such as to identify decedents and determine whether deaths are natural or unnatural.

Historic and archaeological cases represent different situations. For example, an unknown historic family burial plot may be discovered long after the descendant family has moved from the property and no next of kin can be found; or a church may have relocated generations earlier, but the physical burials may have never been moved and since been forgotten (e.g., Espenshade 2018:62; Giaimo 2017; Salisbury 2016, 2017; Schultz 2012:71). Relevant information about these types of sites is often lost in the historic record until developers chance upon the subterranean remnants of a cemetery or human

remains. Furthermore, next of kin and/or cultural association may be unknown and difficult to determine; the number of individuals within a burial context may not be readily apparent upon discovery; and burial contexts may be dissimilar to present-day practices. Therefore, historic and archaeological human remains and burial sites represent different entities than their present-day counterparts and should be exempt from much of the associated present-day legislation detailed in unconsolidated constitutions, 9 Pa.C.S., and 28 Pa. Code, among others.

Pennsylvania laws, however, do not recognize this distinction. PHMC, the official history agency of the state, has little legal framework for handling historic and archaeological burial cases. While 37 Pa. C.S. and the National Historic Preservation Act provide the State Historic Preservation Office (SHPO) a role in state- and federally assisted undertakings that may impact human burials, there is no statutory role for the agency in private projects. However, the authorized parties, roles, responsibilities, and procedures are ill-defined, and the handling of these burial sites and skeletal remains is rife with ambiguities that promote confusion and uncertainties (e.g., Salisbury 2016, 2017). Instead, a smattering of codes and statutes designed present-day funerary practices or medicolegal circumstances are piecemealed together by individuals and organizations seeking best practices to deal with such situations.

For example, when human remains are intentionally disinterred, Vital Records, in the Department of Health, has authority to approve disinterments as established in 28 Pa. Code § 1.25. This legislation is designed for individuals interred in known cemeteries and is used by funeral directors and cemetery officials. The application for this permit includes information, such as the name of the individual to be disinterred, date of death, cause of death, and consent of next of kin. The permit must be submitted to the local registrar. However, in newly discovered archaeological and historic cases, this information is

rarely known. Therefore, fulfillment and approval of disinterment permit applications in such settings can be challenging, time-prohibitive, and often must be approved instead by a court of competent jurisdiction, such as an Orphan's Court or Court of Common Pleas. Furthermore, this legislation is listed under 28 Pa. Code and is not cross-referenced or mentioned in 37 Pa.C.S., which unnecessarily complicates sensitive situations with archaeological or historic human remains and burials.

Summarily, at present, there is no clear centralized system or chain of command to identify dominant authorities and processes regarding newly discovered archaeological and historic burial contexts and human remains, and no formal permitting or reporting requirements exist specifically regarding these types of cases. The PHMC's Cultural Resources Geographic Information Systems (CRGIS) map-based inventory of historic and archaeological sites does not include a comprehensive list of known burial sites. Furthermore, other permitting requirements, such as those detailed in 28 Pa. Code, are under the domain of agencies other than PHMC. However, not all organizations and individuals are aware of these types of trans-agency connections and stipulations. And although Pennsylvania laws may still apply to these burial contexts, legal authorities disagree on how these laws are interpreted and enacted.

This lapse should be addressed because forgotten cemeteries and burials are commonly unearthed during construction and development. Although avoiding such sites is preferable to disturbing, excavating, and relocating the remains, developers and landowners are often unaware of the existence of these sites until they are disturbed. Pennsylvania legislation does not mandate preemptive research of proposed development sites on private property; and state- and federally funded projects have little oversight regarding background research. Therefore, few organizations afford the time or expense for these types of in-depth proactive efforts. Preemptive actions, such as survey work to locate historic and

archaeological sites in advance of construction work or background research to assess historic records, are viewed by some individuals as expensive and superfluous. However, they often cost significantly less time and money than salvage work and project modifications that must be completed relatively spontaneously when human remains are discovered during ongoing projects.

Because laws are inapplicable and/or ill-defined for today's needs, local pressures, media attention, and public volunteer efforts are often critical for the momentum of important archaeological cases (see First Baptist Church Cemetery case study, below). Whether in urban or rural contexts, many structures, cities, and townships are built on lost cemeteries and burial grounds (see case studies, below), and hundreds of these sites may exist across Pennsylvania. Without pressure and public assistance to promote these cases in Pennsylvania, many interments may be inadequately preserved or destroyed. State laws should be updated to provide clear guidance, enforcement authorities, and an appropriate budget to care for archaeological and historic human remains and burials when they are inadvertently discovered, the same as is afforded for recent human burial grounds.

Goals and Objectives

The goal of this research is to identify key issues impacting the stewardship and care of burial places and human remains across Pennsylvania. This includes determining how various agencies have called upon Pennsylvania legislation to facilitate action; assess which legislation is used most often; discuss challenges and limitations associated with particular legislation; and provide recommendations towards future policy revision about how processes can be improved for historic and archaeological cases where human remains and burial sites are encountered during development on state properties or state-funded

projects. To that end, a case study approach is employed, wherein several case studies are deconstructed to identify commonalities, advantages, and disadvantages for each situation.

Methodology

As described above, no specific legislation exists regarding historic and archaeological human remains and interments. Instead, loosely associated laws are scattered across unconsolidated statutes, consolidated statutes, and the Pennsylvania Code. However, these laws were enacted for specific intentions (rarely archaeological and historic) and are under the purview of various agencies. No documents combine or summarize all relevant legislation to help facilitate processing of these sites. Consequently, it is unlikely most cases involving historic human remains have been handled following the same protocol. It can be argued that existing legislation is not appropriate for dealing with archaeological and historic cases. No legal entity oversees the process when archaeological and human remains and burials are involved, no oversight or budgetary allocation exists, and there is no mandatory accounting for these cases. Although PHMC is the responsible agency for Pennsylvania's cultural history, it has indicated that its authority only extends so far (Salisbury 2016, 2017). With no clear permitting process or documentation procedures for these types of cases, it is difficult to know how many have been handled within Pennsylvania and compare methodologies.

For this project, existing legislation is described as it has been applied to archaeological and historic human remains and burials cases. The legislation is identified through discussion with archaeologists and review of technical reports and associated documentation. The general processes and procedures employed in these cases are summarized to illustrate how various legislation is interpreted by different parties. To demonstrate alternative approaches, established legislation from other states is summarized

for archaeological and historic human remains and burials. Through this comparison of laws and relevant case studies, key issues impacting stewardship of newly discovered burial places and the treatment of human remains will be identified.

Because projects with historic and archaeological human remains and burial sites are not documented consistently in Pennsylvania, identification of case studies is limited. Therefore, the case studies include a mix of federal highway projects that cross state or private property and private development projects. An emphasis is placed on cases from rural counties because, unlike urban cases such as the First Baptist Church Cemetery project in Philadelphia (Giaino 2017; Gordon 2017; Salisbury 2016, 2017; see case study, below), public support and social media have not figured prominently into awareness and conservation efforts in rural counties. Although according to 37 Pa.C.S. § 502 (Power and duties of commission), PHMC is required to initiate and coordinate a statewide survey to identify and document the historic resources in this state, whether publicly or privately owned, it is further specified in 37 Pa.C.S.A § 507 (Cooperation by public officials with the commission) that PHMC has no authority regarding archaeological survey or field investigation on private property without consent of the property owner. The phrasing of existing legislation suggests that the identification of possible human remains or burial sites does not supersede this rule.

For the sake of this project, historic and archaeological interments are emphasized—that is, burial places more than 100 years old with no active burials within the past 50 years (Historic Burial Places Preservation Act, 1994, P.L. 141, No. 22)—that have been discovered on state or private property or state-funded projects. These burials are associated with multiple cultural groups, including African,

European, and Native American. Due to their age, these contexts rarely are associated with present-day medicolegal concerns.

Within PHMC, the State Historic Preservation Office (SHPO) has compiled statewide burial laws. The majority of these laws represent unconsolidated statutes regarding known cemeteries and burials. During this project, additional legislation was identified through assessment of particular case studies and review of Pennsylvania statutes and codes. The authors have attempted to provide a comprehensive list of relevant legislation. However, because it is not required to report archaeological or historic burial cases and human remains discovered in Pennsylvania, it is possible that other laws may have been used in other situations.

Because there is no formal reporting or permitting system to estimate the number of case studies involving historic human remains, contact with relevant agencies was critical to uncover appropriate case studies. PHMC composed a list of agencies and other individuals or organizations that are stakeholders regarding human remains cases, including the Department of Transportation (PennDOT), Department of Health, Department of Conservation and Natural Resources, and Department of Environmental Protection.

In addition, other organizations, including county coroners offices and Cultural Resource Management (CRM) firms were contacted because these organizations are likely to have experience dealing with such matters or be involved in relevant permitting processes. CRM firms were selected based on word of mouth (questioning PennDOT or other archaeologists about which firms had experience with remains or had been consultants on relevant projects) or simply because of the size of the company (assuming that

larger companies are more likely to have been involved in relevant projects due to higher volume of work). The contacted CRM firms include AECOM, McCormick Taylor, Christine Davis Consulting, CHRS, Inc., and GAI.

Additionally, the researchers contacted state archaeologists from other states. State archaeologists were selected based on the lead researcher's existing professional networks (e.g., South Carolina, Virginia, Nebraska, and Florida), proximity to Pennsylvania (e.g., Ohio and West Virginia) or available published articles and book chapters regarding burial legislation (e.g., Massachusetts). State legislation was reviewed on each state's legislative website to understand how the laws are structured and to provide examples of how appropriate legislation could be structured in Pennsylvania. Several agencies or state archaeologists were contacted via email and/or video chat, including South Carolina, Virginia, Nebraska, and Florida, for clarification about points of law, further details about legislation and associated challenges, and discussions of case studies from each state.

Individuals from most of these agencies or organizations (both within and outside Pennsylvania) were contacted first via email. In the email, the premise of the project was explained. Individuals were asked if they could provide insight into legislation or share specific case studies that illustrate current practices in the field. Many of those that were contacted were happy to explain their experiences with burial laws in Pennsylvania and other states. These exchanges occurred over email, phone, or video chat. However, some individuals did not respond, declined to participate, or denied having any role in these concerns.

The case studies represent what organizations were willing to share within the time frame of this study. The case studies largely represent closed cases, where the human remains have been re-interred and

development has been completed. Resolved case studies were preferred to on-going cases, which may be complicated by continuing negotiations. Completed cases allow for the assessment of the entire process—from the first recognition of human remains to the final disposition of the remains and resolution of development plans.

Although the cases presented here are not an exhaustive list of current or closed cases that involved human remains, they are the best examples that were provided. In some cases, contributors were unwilling to provide specific details or documentation to facilitate presentation of a case. The original goal of the project was to provide at least five cases within Pennsylvania and to provide examples from other states. In the end, the authors were able to present eight cases from six different counties that best represented the issue at hand.

For comparative purposes, and because identification of state-funded projects was limited, several federally funded and privately funded projects are included here to demonstrate deviations. Although the privately funded First Baptist Church of Philadelphia Cemetery project represents an active case, it is included here because it received substantial state- and national-level attention and was an impetus for this project. It is important to understand how these laws have been operationalized in different situations and identify associated challenges. This approach permits a detailed understanding of how cases proceed from the discovery of human remains, to the types of processes and invested parties, and the final resolution and disposition of the remains. It is important to demonstrate whether each action taken during these cases reflects adherence to legislation versus context-specific rulings, and to document the advantages and disadvantages of these actions.

Although Pennsylvania does not have clearly established legislation to provide guidelines for historic and archaeological human remains and burials, the federal government and other U.S. states have procedures that are relevant and provide guidelines for consideration in Pennsylvania. Therefore, in addition to Pennsylvania legislation, federal legislation and established legislation from other states are described to understand different perspectives and interpretations.

Pennsylvania case studies were identified by contacting various agencies and cultural resource management firms via email and/or video meetings. For each case study, basic information was documented, including the date and duration of the proceedings, the number of human interments discovered, the legal bodies involved with the resolution of the case, the laws that were engaged, the types of permits, any conflicts that may have arisen, the final disposition of the remains, and the final resolution of the development project. In some cases, final field reports or relevant documents, such as Pennsylvania Archaeological Site Survey (PASS) forms, were obtained.

These cases were deconstructed to determine the sequence of processing, invested parties, relevant legislation, and interpretation of legislation. This review helped delineate processes for dealing with human remains in a variety of contexts, and provide an extensive and clear guide by which to navigate future cases. Through this process, a humanized approach is combined with legal standards to ensure a well-rounded, clearly articulated, legally sound, and respectful approach. Recommendations are based on analysis of each case and associated legal actions. For each legislative summary, basic information was documented, including the types of human remains covered by the law, who has jurisdiction of associated sites and remains, other authorities and their roles, financial burdens, and other relevant information.

Results

First, a description of federal legislation and state legislation is provided, emphasizing laws relevant to human remains and burial sites. Next, case studies are presented. Each case study is deconstructed, providing details of the project, how human remains were handled, associated legislation that informed each plan of action, and the final disposition of the remains. Although overlap exists regarding the legislation used in each case, not all laws were applied to all cases. This discrepancy highlights the need to clearly articulate legislation specifically for historic and archaeological human remains and burials. Finally, summaries of relevant legislation are presented from other states.

Relevant Federal Legislation. Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C.) mandates that agencies demonstrate due diligence and complete preemptive background research and impact statements to show they have researched the history of a potential site, consulted with relevant parties or stakeholders, established contingency plans should human remains be uncovered, and considered the impact of their work on a site, prior to spending federal funds or federal permitting, licensure, or other involvement. This ensures that developers do not blindly approach a project, but instead have informed expectations and proactive plans of action.

According to Section 106, agencies and consulting parties must agree on measures to avoid, minimize, or mitigate adverse effects to historic properties. However, specific outcomes are not required with the recognition that numerous federal, tribal, state, or local laws may be in effect. The Advisory Council for Historic Preservation (ACHP n.d.) is an independent federal agency that provides guidance to implement Section 106 procedures and provide mediation when disagreements arise between interested parties. The

council does not impose a specific strategy, but they guide federal agencies in decision making when federal or state laws do not provide clear requirements.

However, cemeteries are not considered eligible archaeological resources under NHPA. While cemeteries and burial places are inherently archaeological in nature, they are not always considered eligible for the National Register of Historic Places. This consideration impacts how these sites are handled during Section 106 consultation. Therefore, when archaeological or historic burial sites or human remains are anticipated, the ACHP recommends adherence to eight principles regarding the treatment of the sites. Among these principles, they advocate early and meaningful exchange of information with interested parties, including tribal or local groups; determination and implementation of plans of action for sites that may be inadvertently discovered; avoidance of burial sites and human remains unless absolutely necessary; and careful and respectful disinterment and treatment of remains, when disinterment is necessary (ACHP 2007).¹

To facilitate these principles, the Secretary of the Interior's Standards and Guidelines (36 CFR § 61) provide the minimum requirements for professional qualifications as an archaeologist in the United States. 36 CFR § 61 states that a person must have credentials such as a graduate degree in archaeology or a closely related field, full-time professional experience in archaeology, and supervisory experience in North American archaeology.

¹ Other principles include: Participants in Section 106 shall treat all burial sites, human remains, and funerary objects with dignity and respect; inform and utilize the special expertise of Native Americans and Native Hawaiians; comply with applicable federal, tribal, state and local laws where disposition is not prescribed; proceed following a hierarchy of lineal descendants, descendant community, which may include Native Americans or Native Hawaiians.

Among archaeologists, one of the most well-known federal laws is the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. §§ 3001 et seq.), enacted in 1990 after years of insensitive handling of remains by non-Native groups. The law is designed to protect Native American human remains and cultural objects discovered on federal land or held in federal (or federally funded) repositories. The NAGPRA legislation mandates that Native American remains and associated grave goods cannot be excavated without the permission of associated tribes. Proposed construction or modification of the landscape cannot continue at a site where Native American remains have been discovered without permission of federally recognized tribes, and construction plans must be altered and/or timelines extended until the human remains can be adequately relocated. However, these protections do not extend to historic cemeteries of European, African, or other descent. Instead, numerous state and local ordinances exist to protect formally established cemeteries, whether on private or public land.

Pennsylvania Legislation. Legislation that loosely can be applied to historic and archaeological human remains and burial cases is spread across numerous statutes and codes of Pennsylvania legislation. Unlike in many other states, Pennsylvania cemetery and burial laws have not been adjusted to incorporate considerations for historic and archaeological contexts. Whereas other states specifically mention historic or archaeological human remains, Pennsylvania does not. At present, historic and archaeological resources are covered under 37 Pa.C.S. (Historical and Museums), but human remains do not receive special consideration in the legislation and there is no wording that highlights these unique issues.

However, several pieces of legislation from Pennsylvania's Unconsolidated Statutes, Consolidated Statutes, and Code may be relevant or warrant consideration (Appendix A-1). In essence, the statutes represent laws, while the code represents regulations. The Unconsolidated Statutes, or pamphlet laws, are separate official documents approved by the Pennsylvania legislature in chronological order. They are not bound or codified. Alternatively, the Consolidated Statutes are grouped by subject and postdate 1970. This codification and compilation of state laws is on-going. Not all legislation has been codified; therefore, both types of statutes must be considered. Finally, the Pennsylvania Code represents all the rules and regulations within the state (PA General Assembly n.d.).

Pennsylvania History Code. 37 Pa.C.S., also known as the Pennsylvania History Code, is a set of laws that apply to projects on state land or involving state property, projects requiring state licensing, funding or permitting, and projects being undertaken by state agencies or instrumentalities of the state of Pennsylvania. 37 Pa.C.S. § 101–104 lists the general provisions of the law, which includes declaration of policies and definitions, as well as defining the PHMC. 37 Pa.C.S. § 301–307 defines the powers and duties of the PHMC. 37 Pa.C.S. § 501-512 covers issues of Historic Preservation including archaeological field investigations on state land, approval of construction affecting historic resources, and criminal penalties. 37 Pa.C.S. § 701-705 covers specific historical properties, and 37 Pa.C.S. § 901-906 covers concurrent jurisdictions in the management of historic resources.

Although 37 Pa.C.S. is modeled after Section 106, an absence of implementing regulations can lead to confusion regarding who is in charge when human remains are found. Relevant authorities are not specified in sections about archaeological field investigations or preservation of historic resources. For example, 37 Pa.C.S. § 103 defines what an archaeological investigation is, yet it never discusses burials,

cemeteries, family plots or human remains. Furthermore, 37 Pa.C.S. § 506 discusses archaeological investigations on state land. Part A states that specimens and information recovered from archaeological investigations on state land “shall remain the property of the Commonwealth and shall be utilized for scientific and public education purposes”; however, this doesn’t define whether “specimens” would include human remains. 37 Pa.C.S. places a strong emphasis on conservation and preservation of historic and archaeological resources but fails to discuss the mitigation or relocation efforts that would be involved when human remains are found. In fact, a majority of the 37 Pa.C.S. is about historic property only, not human remains.

Unconsolidated Statutes. Although unconsolidated statutes enacted as early as 1887 consider the removal of remains from neglected burial grounds (Supplementary Act, Burial Grounds Act, 1887, P.L. 96, No. 47), prohibit construction in cemeteries (except in Philadelphia County; Cemeteries and Graveyards Protected Act, 1894, P.L. 397, No. 296) and limit disinterment of remains (except under extenuating circumstances; Burial Grounds and Conveyance Act, 1913, P.L. 551, No. 354), many of these laws target only formally established churches, cemeteries, burial associations, or above-ground contexts and have specific criteria surrounding their enactment. For example, the Cemeteries and Graveyards Protected Act, 1894 (P.L. 397, No. 296) does not apply to road widening projects. The Burial Grounds, Municipal Control Act, 1923 (P.L. 198, No. 144), requires certain burial grounds to be maintained and cared for by local municipalities at their own expense if mandated by courts. Aside from indicating that these burial grounds may be active but neglected, no other criteria are provided to identify burial grounds. Therefore, it is possible that newly discovered archaeological or historic burial grounds could fall within the limits of this act, and local citizens may petition to have the grounds maintained.

The Vital Statistics Law of 1953 (P.L. 304, No. 66), which was amended in 2009 (P.L. 52, No. 11), provides the Department of Vital Statistics or Local Registrar authority to issue permits regarding the disposal and transportation of dead bodies or fetal remains. Local Registrars are appointed by the Department of Health to work with funeral directors to register deaths that occur in Pennsylvania. They are responsible for issuing burial permits. Remains cannot be interred without a permit. Interestingly, the statute indicates that blank pre-signed permits can only be issued to funeral directors. However, funeral directors are more likely to have decedent information than archaeologists. Blank, pre-signed permits (with unidentified decedent or date of death) would typically be required for human remains recovered from archaeological and historic contexts due to the fact that little information is known about the remains until the disinterment and analysis by a qualified specialist is conducted. A funeral director, typically, does not have to deal with such cases and is not a specialist in human osteology.

Importantly, Pennsylvania does not require that the discovery of human remains be disclosed immediately to appropriate legal entities. The law states that the coroner shall investigate deaths that are suspicious and of causes not readily recognizable (The County Code Act, 1955, P.L. 323, No. 130), but the language in this act does not indicate that the discovery of human remains must be reported.

Subarticle B, §1218-B (Coroner's Investigation) mandates that the coroner will investigate deaths "for the purpose of determining whether or not an autopsy or inquest should be conducted." However, much of the language in the code refers to a "body" or "bodies" and not to skeletonized remains. The intent of the code is to investigate deaths for medicolegal purposes. The code does not mention nor is it intended for archaeological or historic remains.

Furthermore, no time requirements are indicated, such as the allotted time in which remains must be reported to legal officials or the inferred age of the remains (time since death) under which the coroner has jurisdiction. To ensure law enforcement is notified for all deaths, a bill was introduced in 2017 to designate the failure to report a death as an offense (PA HB 1621 PN 2147, 2017), but this bill was not passed into law. In June 2017, the bill was referred to the House Judiciary Committee, where it failed to gain momentum. At the time of the research, there were no known reintroductions planned for this bill.

The county coroner or medical examiner is generally responsible for the treatment, handling, and investigations of deceased individuals in Pennsylvania, particularly those that are unidentified or unclaimed. Therefore, the coroner's involvement may not be required for work in or near historic cemeteries when an active cemetery board, church, or descendant group is involved in planning and proceedings.

The 2018 amendment to the County Code Act (§ 2401-A) prohibits counties from using eminent domain on cemeteries and places of worship, with some exceptions. In Second Class A counties (Currently Bucks, Delaware, and Montgomery Counties), the courts can direct the removal of remains in inactive cemeteries in certain situations [(§ 2401-A(b))] including when remains may become a public nuisance or interfere with improvement, provided that they follow other provisions of the Supplementary Act, Burial Grounds Act (1887, P.L. 96, No. 47). Although only used in one of the case studies presented here, this legislation appears more appropriate than 28 Pa. Code § 1.25, which requires disinterment permits based on known individuals and approval from next of kin. However, this code provides authority to the courts to handle historic and archaeological human remains, and it is not mandated or recommended that PHMC be involved with this process. While the Supplementary Act was enacted

decades before PHMC was created and 37 Pa.C.S. was established, there has been no consideration of this in the intervening years. The courts do not have sufficient background knowledge to assess the significance or consider appropriate mitigation efforts for inactive cemeteries. Therefore, without consultation with PHMC, this legislation is inadequate and may lead to negative impacts for human remains and development projects.

In reference to the transportation or relocation of human remains, Subarticle B §1222-B (Prohibition on moving a body) of the County Code Act mandates that once the coroner has established authority for a set of remains, the remains may not be disturbed without the coroner's permission, barring emergency or serious consequence. This legislation may provide confusion with 28 Pa. Code § 1.25, which affords authority to the Department of Vital Statistics or the local registrar when moving disinterred human remains. This discrepancy between "bodies" and disinterments is not clarified and can be particularly confusing when archaeological or historic situations are encountered.

These issues have been recognized in the past. Regarding historic and archaeological human remains, a bill was introduced in 1993 to protect unmarked human burial sites, particularly of Native American descent (PA HB 1771 PN 2091, 1993). With modifications, the tenets outlined in this house bill are appropriate for the needs and concerns in Pennsylvania today regarding historic and archaeological burial sites and human remains. It outlines concerns such as responsible parties, sequence of processes, and interactions with next of kin, but no discussion of budgets is provided. This bill never progressed beyond initial referral, and current PHMC staff does not have living memory of it. The introduction of HB 1771 is congruent with the federal introduction of NAGPRA, but in Pennsylvania, two other bills—

the Historic Burial Places Preservation Act and Act 70—were passed into law around the same time, which may have impacted consideration of HB 1771.

The Historic Burial Places Preservation Act (1994, P.L. 141, No. 22) provides for the preservation of historic burial places and introduces penalties for offenses. On the surface, this bill appears to cover concerns outlined in HB 1771, but with its emphasis on above-ground features, the Historic Burial Places Preservation Act falls short regarding burials and subterranean features. While this law applies regardless of interment date, property ownership, or property title exchanges, skeletal remains and newly discovered/abandoned burial sites are not specifically mentioned, and enforcing authorities and repercussions are not clearly indicated.

Act 70 (1995, P.L. 647, No. 70), an amendment to 37 Pa.C.S., restructured the requirements of archaeological investigation. Initially, the burden of preemptive research and investigation was within the purview of developers and the private sector; however, Act 70 redirected the burden to state government without allotting any budget, financial support, or proposed penalties (Bowen and Griggs 2013; PAF n.d.a; PHMC 2000). On the surface, this bill shifts the responsibility to Pennsylvania through PHMC, but without financial assistance or proposed penalties, PHMC has no way to enforce these statutes. Furthermore, this legislation restricted PHMC in its ability to request archaeological surveys for state-issued permits. Act 70 typically applies to archaeological investigations that are requested in conjunction with Commonwealth-assisted projects reviewed by PHMC under 37 Pa.C.S.

However, between the shifting of responsibility, the absence of an appropriate annual budget, and the increased limitations on archaeological work, there has been irrevocable damage to the archaeological

record. It is believed among archaeologists who practice in Pennsylvania that unknown numbers of archaeological sites have been destroyed without any investigation (PHMC 2000), and substantial employment opportunities have been lost for Cultural Resource Management (CRM) firms (PHMC 2000). This also impacts PHMC's ability to handle human remains and burial sites.

Consolidated Statutes. Other statutes that impact human remains or burial grounds include 8 Pa.C.S. § 2800.1 (Burial of deceased persons), 9 Pa.C.S. (Burial grounds), 18 Pa.C.S. (Crimes and offenses), and 26 Pa.C.S. (Eminent domain). According to the tenants of 8 Pa.C.S. § 2800.1 (Burial of deceased persons), also known as the Borough Code, a borough may prohibit burial or interment of deceased persons anywhere within borough limits. Additionally, regarding the removal of bodies to other cemeteries, 8 Pa.C.S. § 2809 indicates that relatives of the deceased may remove the remains at private expense. However, these laws only apply to boroughs and incorporated towns.

9 Pa.C.S. (Burial grounds) defines the terms "burial ground," "cemetery," and "private family cemetery," among other terms, and emphasizes regulations of cemetery companies, and the transfer of ownership. 9 Pa.C.S. includes laws governing the buying or selling of cemeteries or plots and the permanent lot care of established cemeteries. Some of the language of this legislation is consistent with the Burial Grounds Conveyance Act (1913, P.L. 551, No. 354), however, which recognized the authority of churches and cemetery associations regarding the disposition of burial sites. Similarly, 9 Pa.C.S. § 702 indicates that the state has "significant interest" in protecting the right of the owners of burial plots, and the Act 64 amendment clarifies that 9 Pa.C.S. applies to cemeteries, private cemeteries, and private family cemeteries, regardless of the date of burial or acquisition of title. This legislation may therefore be interpreted to apply to historic and archaeological burial contexts, which suggests that

identified descendant groups or next of kin should play a larger role regarding the disposition of a newly discovered burial. However, no specific guidelines or provisions are recommended.

18 Pa.C.S. § 5509 (Desecration, theft, or sale of venerated objects) considers offenses related to historic and veteran's burial sites. It is a first-degree misdemeanor to intentionally desecrate the burial site. It is a second-degree misdemeanor to intentionally desecrate, sell, or remove associated grave markers without permission.

26 Pa.C.S. (Eminent domain) refers to the government's ability to designate private property for public use. While there is no mention of burial places, graves, or human remains, § 202 (Definitions) mentions the open-space benefits resulting from the preservation of historic sites. However, § 208 (Eminent domain of land subject to conservation easement) clarifies that land subject to conservation easement does not require condemnation approval if open-space benefits are not impacted. Therefore, this law emphasizes preservation of above-ground sites of historic significance, rather than acknowledging the potential for subterranean sites of archaeological or historic significance.

Two other unconsolidated statutes mention eminent domain with regard to graves yards and burial places, although they are not referenced in 26 Pa.C.S. The Historic Burial Places Preservation Act (1994, P.L. 141, No. 22) (a) indicates that historic burial places may not be alienated or condemned through eminent domain for any use other than a burial ground. However, the law provides no protection for burial places unless they have been used for at least 100 years as a burial ground, have had no burials for at least 50 years, and will receive no future burials. Additionally, the Supplementing County Water Supply Authority Act (1957, P.L. 1006, No. 446), Section 7, states that burial grounds or places of

worship may not be taken by eminent domain unless necessary. This Act applies to county and municipal water and sewer authorities, but otherwise does not limit the use of eminent domain. If proposed for eminent domain, the courts must consider the results of public hearings, conditions for public health and sanitation, documentation of headstones, and relocation of bodies at the site. Furthermore, the water authority must finance the relocation and re-interment of the remains and the maintenance of headstones records.

Pennsylvania Code. Components of the Pennsylvania Code may also be relevant in various circumstances, including Titles 25 and 28. The 25 Pa. Code relates to Department of Environmental Protection (DEP) policies and procedures. Commonly, state- and federally funded projects require permitting criteria that is verified through DEP's permitting process. 25 Pa. Code § 102.1 defines earth disturbance activity as "construction or other human activity which disturbs the surface of the land." Related road maintenance activities require erosion and sediment control (E&S) permits and plans to minimize accelerated erosion and sedimentation before, during, and after the earth disturbance activities. Additional permits, such as National Pollutant Discharge Elimination System (NPDES), and plans, such as post construction stormwater management (PCSM), are required based on the size of property and concerning stormwater discharge from construction activities. Specifically, E&S and PCSM plans require documentation of the past, present, and proposed characteristics of the project site (25 Pa. Code § 102.4, 102.8), and this is where consideration of archaeological and historic cultural resources may apply. When permitting is required, the plan must also include assessment of the soil and geology of the predevelopment site.

Although applicants are required to consult with the Pennsylvania Natural Heritage Program regarding threatened and endangered species (25 Pa. Code § 102.6), the legislation does not require consultation with PHMC regarding threatened archaeological or historic sites. However, a 2002 DEP policy indicates that DEP will cooperate with PHMC and allow PHMC to review DEP permits and plans to facilitate the protection of significant archaeological resources and historic structures (DEP 2002). The policy furthermore recommends specific actions if human remains are discovered during earth disturbance activities. Project applicants are recommended to contact local authorities and PHMC.

However, in 2018, Pennsylvania governor Tom Wolf initiated a DEP permit reform to reduce permit backlogs, modernize the permitting process, and utilize technology more effectively to improve oversight and efficiency, while maintaining strict environmental protections (Pennsylvania Governor 2018). At present, it is unknown how this initiative will impact cultural resources. Only natural resources are mentioned explicitly in DEP policies.

The tenets of the unconsolidated statute Vital Statistics Law of 1953 (P.L. 304, No. 66) are echoed in 28 Pa. Code § 1.25. 28 Pa. Code § 1.25 delineates the steps required to facilitate disinterment of remains. This section of code identifies appropriate agencies, permit requirements, and logistic considerations for the disinterment and handling of human remains. This code applies to all sets of human remains, regardless of age. The code dictates that a funeral director or coroner must obtain a permit from the local registrar's office. Alternatively, the local court may grant the permit. Details such as transportation, storage, time interval, and reinternment must be planned in advance. Acquisition of permits can be challenging in historic and archaeological contexts because the permit application requires the name of the individual(s) to be disinterred, date of death, cause of death, and written consent

of next of kin or an appropriate order from a court. Even if a church or cemetery association has claimed responsibility of burial grounds, it may be difficult or impossible to provide the details required for the permit. Additionally, as mentioned in discussion of the County Code Act (1955, P.L. 323, No. 130), potential confusion may exist here regarding distinctions between bodies and disinterred remains.

In summary, only state- and federally funded projects must be permitted through DEP, which includes stipulations of Section 106. PHMC is available to assist but not enforce legal statutes regarding archaeological or historic investigation of human remains or burials on state properties or state-funded projects. Additional action is further prohibited by the absence of a formal budget. No other state agency is tasked with this oversight. It is not required under Pennsylvania law to report the discovery of human remains unless the death is suspicious. Local courts have the authority to direct the removal of remains from neglected burial grounds in some cases, such as in Second Class A counties, if the county has acquired a cemetery through eminent domain. The majority of burial legislation is written for recent cases with consideration for above-ground burial items, such as grave markers, known or active burial grounds, and recently deceased bodies. Fewer laws recognize the importance of historic and archaeological contexts or subterranean features.

Pennsylvania State Historic Preservation Office. Although PHMC does not have legal authority to oversee and facilitate handling of archaeological and historic human remains and burial sites, it recognizes that these concerns are relevant to its jurisdiction. Therefore, the State Historic Preservation Office (SHPO), housed within PHMC, published a policy with recommendations for these situations (PA SHPO 2017). These policies apply to contexts where human remains are anticipated, such as

planned archaeological investigations or cemetery relocations, and inadvertent discoveries related to earth disturbance activities.

The policies, however, are predominantly comprised of recommendations because of the SHPO's limited authority. It is only recommended to contact the coroner and SHPO when unanticipated remains are discovered. Any state-funded or permitted archaeological excavation must establish a contingency plan for the treatment of human remains or burial sites and follow the plan as appropriate. To facilitate consultation among interested parties or stakeholders, the plan must identify likely next of kin or descendant groups. The SHPO will consider the concerns and recommendations of all consulting parties to determine an appropriate course of action and final treatment plan. For projects that are not on state land or funded by the state, it is recommended to notify the SHPO if the remains appear to be historic or archaeological.

Pennsylvania Department of Transportation. The lack of clarity in state legislation for subterranean burial features and human remains led PennDOT to establish internal guidance that followed the spirit and intent of federal and state legislation. PennDOT represents one of the only state agencies to proactively tackle the issue of historic and archaeological burials and human remains. PennDOT is often bound to Federal Highway Administration (FHWA) procedures, but it has expanded these guidelines regarding human remains.

Federal Highway Administration procedures mandate that all work must stop immediately. Numerous entities, including FHWA, SHPO, and any associated federally recognized tribes, must be informed upon discovery of human remains. The tenets of NAGPRA take effect when Native American remains

are identified on federal or tribal lands. While no tribal lands exist in Pennsylvania, PennDOT follows the spirit of NAGPRA when Native American remains are discovered during PennDOT projects, no matter the type of property. When the remains are not associated with Native Americans, different stipulations take effect, including those documented in 9 Pa.C.S., the National Park Service's National Register Bulletin 41 (Potter and Boland 1992), and the Pennsylvania SHPO policy regarding burials and human remains (PA SHPO 2017).

PennDOT is revising its guidelines to standardize its approach to human remains and burial sites across Pennsylvania. These guidelines are available in the draft form of Publication 689 (Cultural Resources Handbook), but the handbook has not yet been finalized. The guidelines represent the sum total of lessons learned during projects such as those detailed in the following case studies. However, the cases presented below were completed prior to the establishment of the handbook, so they follow slightly different procedures in each situation.

PennDOT provided a draft version of the handbook to demonstrate how future projects will be handled. According to the handbook, if burials are suspected at a project area, a Plan of Action (POA) should be created during the planning stages of a project to provide guidance regarding the planning, documentation, transportation, storage, and final disposition of potential human remains and associated grave goods (PennDOT 2019:80–81). The POA is developed in consultation with the PennDOT Office of Chief Counsel, the church or burial association, FHWA, descendant groups, the county coroner, local funeral director, and other parties, as appropriate. The handbook indicates that any mitigation at historic burial places, defined as burial grounds in existence for more than 100 years, with no burials within the last 50 years, and no plans for future burials, must be approved by PHMC prior to removal. However,

not all burials are considered archaeological resources. The line between human remains and cultural resources are very blurred (S. Haney, PennDOT, personal communication, 2020).

For example, most informants mentioned cases where historic human remains were removed, not by professional archaeologists or funeral directors. In several of these cases, amateur archaeologists were able to procure a permit from the local registrar, and the coroner was aware of the proceedings, but PHMC was not involved and no other types of documentation or plans of action exist. These types of occurrences reflect the dissonance of how to classify and treat historic human remains where no next-of-kin are recognized.

Currently, there is little agreement or discussion among relevant entities to resolve this issue. At present, PHMC has no other role unless the cemetery is a contributing element as part of above-ground resources eligible under Criterion A, B, or C for the National Register of Historic Places (NRHP); meets any of the additional Criteria Considerations; or is eligible for listing on the NHRP under Criterion D.

The plan of action (POA) accounts for worst-case scenarios and represents due diligence to ensure respectful and appropriate actions regarding human remains. The POA includes stop work; notification of the PennDOT Cultural Resource Professional (CRP), who would in turn notify the FHWA and PHMC; and documentation of relevant laws, among other features. This step is standard for all PennDOT projects when suspected human remains are involved (PennDOT 2019). If human remains are encountered, the POA provides procedures for documentation and reburial, which are developed in coordination with FHWA, Tribes and Nations, PHMC, and other interested parties.

Local Legislation. Most construction-related permits, including building and zoning permits, are issued at municipal, not county levels. County planning agencies have certain roles and authorities for reviewing development approvals, which are outlined in the Municipalities Planning Code. Few small counties in Pennsylvania appear to have any type of laws or regulations relevant to licenses and permits, much less human remains and burials, which reflects a lack of jurisdiction. This suggests little oversight for local development projects and less guidance for inadvertently discovered remains. No rules or regulations were identified for many of the counties referenced in the case studies. Only Allegheny and Philadelphia counties have websites detailing development permits and licensing—likely reflecting their status as Class 2 and Class 1 counties. Philadelphia is also unique with a city and county government.

Allegheny County. In Allegheny County, the City of Pittsburgh Department of Permits, Licenses, and Inspections (PLI) enforces Pittsburgh city codes for safe and lawful construction (City of Pittsburgh, n.d.). Prior to any construction, a developer must acquire a contractor license through the city. The license is accompanied by requirements, such as safety training and tax compliances. License applications are reviewed by PLI to ensure that the project is suitable for the licensed activity and is not detrimental or a danger to public health, safety, morals, comfort, or general welfare. While there is no specific mention of burials or human remains, the review board assesses aspects of public health and morals, both of which may be applicable to human remains.

Preservation Pittsburgh is a community-based advocacy organization dedicated to the preservation of Pittsburgh cultural and historic assets. Through its work with the City of Pittsburgh, it organized the PRESERVEPGH plan, which attempts to balance concerns for the city's citizens with economic development and preservation. Although primarily concerned with architecture and above-ground

features, cemeteries and burial grounds are explicitly considered as important components of Pittsburgh's historical fabric. However, the city recognizes the potential conflicts associated with these features, particularly concerning whether they are publicly or privately owned (City of Pittsburgh 2012; Preservation Pittsburgh 2018).

Philadelphia County. In Philadelphia County, the City of Philadelphia Office of Licenses and Inspections (OLI) enforces Philadelphia city codes for the safe and lawful construction of buildings through inspections, licensing, permitting, and demolitions (City of Philadelphia, n.d.a). Prior to any construction, a developer must acquire a commercial activity license and contractor license through the city. These licenses are accompanied by requirements, such as safety training and tax compliances. While there is no specific mention of burials or human remains, licenses and permits are reviewed by the OLI, which affords review boards an opportunity to consider contingency plans and appropriate background research prior to development.

Local legislation such as that established by the Philadelphia Historical Commission, supplements the services of the municipal government. The commission reviews properties to determine whether historic properties meet the criteria for historic designation. The commission must approve any alterations to historic properties prior to work commencement. The commission mandates that property owners keep the property in good condition, but they cannot force alterations except in cases of extreme neglect. These criteria extend to historic properties, notably above-ground structures, with the goal of preservation and stewardship of historic landmarks (City of Philadelphia n.d.b.). Cemeteries and burial sites are not explicitly mentioned.

Pennsylvania Case Studies.

Case studies were identified from archaeological work conducted by the Pennsylvania Department of Transportation (PennDOT), Kise Straw & Kolodner, AECOM, Christine Davis Consultants, and Skelly and Loy. Eight case studies are presented below, representing six counties in Pennsylvania (Figure 1). Among these cases, three are from rural counties, while five are from urban counties. Three cases represent federally funded ventures executed at the state level, while five cases represent private development. This range of cases provides insight into the variable ways that archaeological and historic human remains have been handled when encountered during development projects in Pennsylvania.

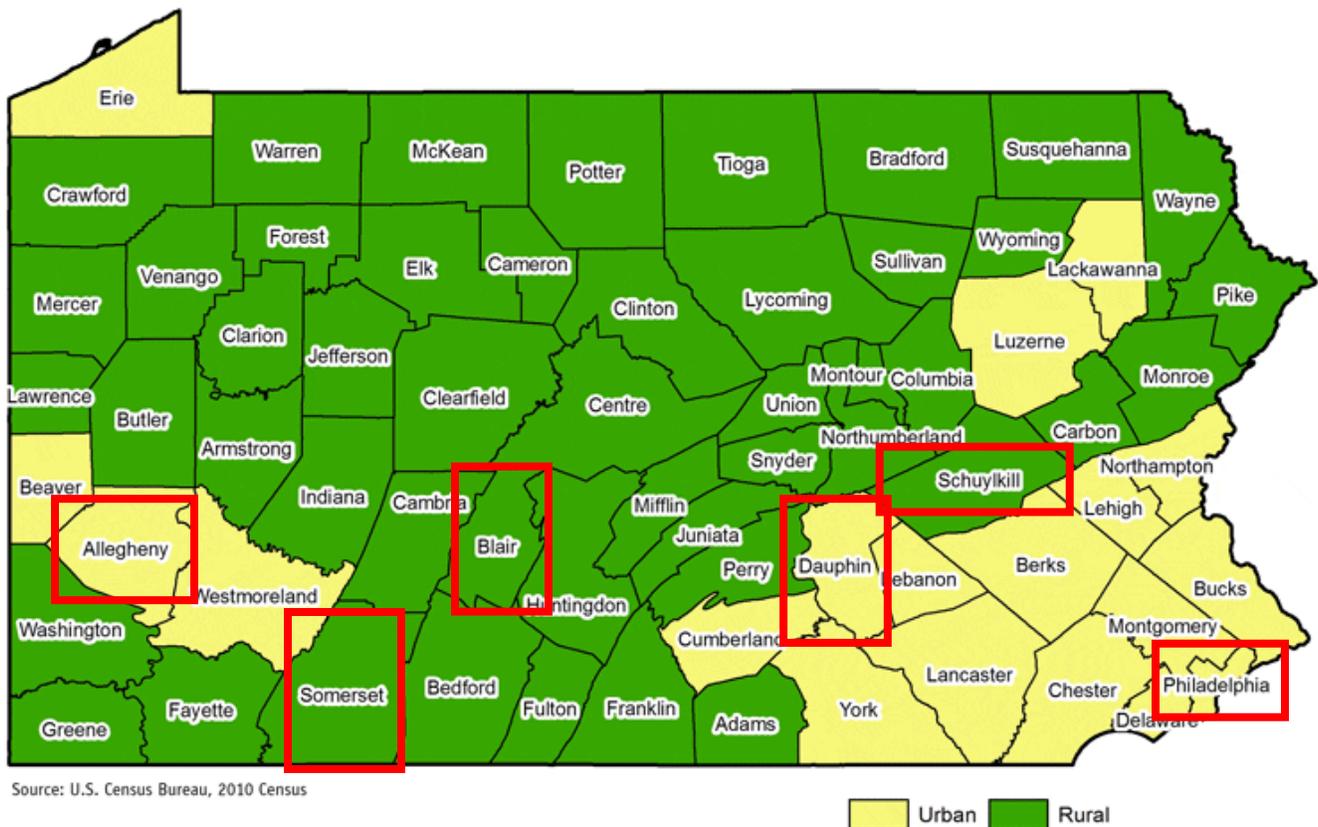


Figure 1. Pennsylvania counties associated with case studies (red rectangles) discussed in the text (base image from Center for Rural Pennsylvania 2014).

Blair County, SR 22 Section 42S US 22 Frankstown Project, PennDOT. PennDOT (n.d.a.)

supervises programs and policies affecting urban and rural public transportation. More than 75 percent of its annual budget is dedicated to state and local highways and bridges in the form of maintenance, restoration, and expansion. Much of its work follows the guidelines of the Federal Highway Administration (FHWA 2017). The FHWA additionally provides a measure of accountability to ensure that the highways are preserved and modernized effectively. Because the FHWA is a federal entity, Section 106 often influences PennDOT activities. Therefore, much of the PennDOT work relevant to this project reflects federal undertakings executed at the state level. Additionally, FHWA is the lead federal agency and has its own permitting requirements. DEP is only involved if there is a concern for impact of waterways. The PennDOT procedures represent a proactive and sensitive approach to handling human remains. All archaeological surveys for PennDOT projects are conducted under the direction of archaeologists who meet the professional qualifications specified by the Secretary of the Interior's Standards and Guidelines (36 CFR § 61).

Blair County is a rural county near the center of Pennsylvania (Center for Rural Pennsylvania 2014) (see Figure 1). In 2012, PennDOT began efforts to replace a retaining wall along Section 42S of State Route 22 in Blair County, as part of a road widening project and bridge replacement under the authority of the FHWA and permitted by DEP (25 Pa. Code; DEP 2002). The retaining wall, built in the 1930s or 1940s, is located adjacent to the Geeseytown (Frankstown) Cemetery, which has been in use since 1813 and contains more than 2,100 burials. One non-human bone fragment and several burial shafts were identified during this project, and several physical grave markers were temporarily relocated during construction for their protection. Tables 1 and 2 present a summary of interested parties consulted during this project and associated legislation that facilitated actions.

The cemetery is divided into north and south sections by the intersection of State Route 22 (McKissick 2018; Stanilla 2012). The south side of the cemetery is the older section and has not had any burials since the 1940s (Stanilla 2012:1–4). The replaced retaining wall is on the south side of the road, and hundreds of gravestones in this area are misplaced or missing in the intervening years. Because this was a FHWA project, Section 106 was triggered in the planning stages. PennDOT contracted P. Joseph Lehman Engineering (Lehman) to fulfill tasks during Preliminary Engineering, including Section 106 compliance surveys. Lehman, in turn, sub-contracted ASC Group to perform archaeological investigations on the Area of Potential Effect (APE) as part of the Section 106 compliance. The APE encompassed 11.4 acres, with a 0.5-acre monitoring area along a 637-ft long concrete retaining wall that bordered the south side of the Geeseytown Cemetery (McKissick 2018:1).

During preliminary engineering, PennDOT wanted to determine if graves were located immediately adjacent to the wall. However, ground penetrating radar survey could not be used because of the long, narrow APE, the presence of overhead powerlines, guiderails, and construction-related disturbances to the 1939 wall. Therefore, ASC Group conducted a specialized Phase I survey to identify the extent of construction-related disturbance and determine the probability that graves would be impacted during the project (Stanilla 2012) (per 37 Pa.C.S. § 507). During this survey, possible human bone was encountered. Work halted immediately, and all required parties were notified. The remains were photographed and reburied. The photographs were reviewed for identification by a forensic anthropologist from Mercyhurst University. The remains were determined to be non-human. As a result of the survey, it was determined that construction-related disturbances from the old wall were highly variable in horizontal and vertical extent. Because of the strong probability of encountering intact or previously disturbed human remains, monitoring was recommended during construction (Stanilla

2012:18). Using PennDOT's standard operating procedures, PennDOT developed a POA (PennDOT n.d.b.).

The Geeseytown Cemetery did not meet the definition for a historic burial place. No church was actively associated with the cemetery. No cemetery association, descendent group, or other point of contact was identified to grant permission for these alterations. Therefore, the Burial Grounds Conveyance Act (1913, P.L. 551, No. 354) did not apply. Only an informal group of cemetery caretakers was identified. PennDOT consulted with these individuals, but ultimately, the local Court of Common Pleas was entreated. Following the tenets of Supplementary Act, Burial Grounds Act, 1887 (P.L. 96, No. 47), the local courts could have directed removal of remains from the burial grounds. However, PennDOT filed a "Declaration of Taking" under 26 Pa.C.S. (Eminent domain) to take responsibility for the cemetery (PennDOT n.d.b) under the auspices of the Burial Grounds, Municipal Control Act, 1923 (P.L. 198, No. 144). Although the Cemeteries and Graveyards Protect Act, 1894 (P.L. 397 No. 296), dictates that roads cannot be constructed through cemeteries, this Act does not apply to road-widening projects.

Prior to construction, several grave markers were temporarily removed to protect them from inadvertent damage by equipment and debris. After construction, the grave markers were returned to their original locations. Unlike for human remains and subterranean features, legislation is more pointed regarding above-ground burial features. Because it was not a historic burial place, the relocation of the grave markers was not impacted by several pieces of legislation 18 Pa.C.S. (Crimes and offenses) or the Historic Burial Places Preservation Act. However, following the spirit of the law, a Monument Conservation Plan was developed to adhere to Pennsylvania legislation and comply with standards suggested by the National Park Service (Potter and Boland 1992).

Subsequently, Lehman subcontracted RETTEW Associates and Skelly and Loy as archaeological monitors and mason conservators. A Monument Conservation Plan was developed by RETTEW to provide guidance for Lehman and the subcontractors to ensure appropriate relocation of the grave markers (Cruiss 2017). Each monument was mapped, photographed, assigned a unique identifier, removed from the work area, stored within a temporary construction easement, and then replaced in its original location.

PHMC/SHPO was informed about proceedings and reviewed the Monument Conservation Plan, and they provided comments and advice. This was before legislation was reviewed and it was determined that consultation with PHMC on non-historic cemeteries was not required (Susanne Haney, PennDOT, personal communication, 2020). It is more common, as noted in many of these case studies, that PHMC is notified as a courtesy, but it does not play a pivotal role in these situations.

Furthermore, when possible human remains were encountered, the coroner was not involved because it is not unusual to encounter human remains during archaeological excavations. Because the remains could not be positively identified in the field, the osseous materials were reviewed by a forensic anthropologist. The county coroner was ready to “release” any remains for disinterment, and the funeral director was ready to take responsibility for remains, including temporary storage (Susanne Haney, PennDOT, personal communication, 2020). Although several burial shafts were identified during monitoring, no human remains were encountered during this project; therefore, no disinterment requests were required.

The POA, established prior to ground disturbance, provided peace-of-mind and ensured congruency in plans and communication. The POA is important because of the lack of clear state-level legislation, authority, and responsible parties. Legislation was clearer regarding above-ground features, but the laws cross multiple statutes and were written with consideration of maintained active and known cemeteries. No graves or human remains were recovered during the removal of the old retaining wall or the construction of the new wall; however, PennDOT and their contractors took every precaution available to ensure that if remains were discovered that they were treated properly.

Table 1. Legislation considered during the SR 0022 Sec 42S road widening, intersection improvements, and retaining wall replacement in Blair County, PA.	
Legislation	Brief Explanation of Legislation
Section 106 compliance (Federal)	Criteria for federally funded projects, including background research and consultation
36 CFR § 61	Secretary of the Interiors Standards and Guidelines
Supplementary Act, Burial Grounds Act, 1887 (P.L. 96, No. 47)	Empowers courts to direct removal of remains from neglected burial grounds
Burial Grounds, Municipal Control Act, 1923 (P.L. 198, No. 144)	The courts may designate local governments as the caretakers of neglected burial grounds
Historic Burial Places Preservation Act, 1994 (P.L. 141 No. 22)	Removal of grave markers and memorials must be clearly documented from historic burial places
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate a historic burial lot or historic burial place
26 Pa.C.S.	Regarding condemnation of property for public purposes
25 Pa. Code	Regarding DEP permitting requirements for earth disturbing activities

Table 2. Interested parties involved with the SR 0022 Sec 42S road widening, intersection improvements, and retaining wall replacement in Blair County, PA.

Interested Parties	Brief Explanation of Project Role
FHWA	Federal authority providing project oversight
PennDOT	State authority providing project oversight
PHMC/SHPO	Offered guidance and comments
Lehman; ASC Group; RETTEW; Skelly and Loy	Prime consulting engineers or archaeological CRM firms (sub)contracted to conduct field operations
Mercyhurst University	Forensic anthropologist contacted to assess potential human remains
Everett Marble Company	Company hired for monument conservation plans
Blair County Court of Common Pleas	Approved “Declaration of Taking”
Blair County Coroner	Would have had authority to “release” remains for disinterment
Sorge Funeral Home	Would have temporarily stored remains and assisted with reinterment
Blair County Geological Society	Received copies of records
Blair County Historical Society	Received copies of records
Pennsylvania Department of Health, Office of Vital Statistics	Provided comments and guidance; received copies of records
Frankstown Cemetery Caretaker	Informal cemetery caretaker
Delaware Nation	Tribal consulting party

Somerset County, SR 281 Section 23S Gilmour to Welsh Hill Road Project, PennDOT. Somerset County is a rural county near the center of Pennsylvania (Center for Rural Pennsylvania 2014) (see Figure 1). In 2016, PennDOT began efforts to remove an existing retaining wall in Section 23S of State Route 281 in Somerset County, as part of a state-funded road widening project, permitted by DEP (25 Pa. Code; DEP 2002). State Route 281 was established in 1926 and was constructed adjacent to the Friedens Cemetery. At the time, the occupants of Friedens speculated that the construction had unearthed several graves that were later relocated; however, there are no church records or local newspaper articles confirming this rumor (Schumer et al. 2018). No human remains were encountered during this project. Tables 3 and 4 present a summary of interested parties consulted during this project and associated legislation that facilitated actions.

PennDOT completed a review of the APE per 37 Pa.C.S. The APE covers a 9-mile stretch along State Route 281. While most of the project area included an existing and previously disturbed right-of-way (ROW), several new areas, including frontage along the Friedens Cemetery, were incorporated into the engineering design. These plans included the removal of a concrete retaining wall opposite Friedens Cemetery with an additional slope cut. The cemetery was in use between the late 1700s and early 1900s and contains more than 1,700 burials. However, ascertaining the exact historic boundary of the cemetery and associated church buildings is precluded due to the quality of record keeping and development in the town (Rowles and Ricketts 2017; Schumer et al. 2018). According to local oral history, the retaining wall was constructed to protect burials. An archaeologist, whose family farm was located along the APE, contacted the PennDOT cultural resources professional (CRP) to notify them of this potential (Susanne Haney, PennDOT, personal communication, 2020).

Therefore, PennDOT expected to encounter human remains and preemptively established a POA to ensure any human remains and burial shafts were handled properly. The POA prescribed consultation with the District 9 CRP, a local funeral home, the county coroner, the associated church and cemetery associations—Friedens Cemetery Association and Friedens Lutheran Church—and any other relevant parties (PennDOT 2017). All parties were notified in advance of field work. The funeral director was ready to take responsibility for any potential remains and provide temporary storage (Susanne Haney, personal communication, 2020). PHMC provided guidance and comments. A disinterment permit was acquired through the Somerset Court of Common Pleas, circumnavigating 28 Pa. Code § 1.25.

Although no archaeological sites had been previously recorded in or near the APE, the District CRP recommended an archaeological survey to identify any sites and potential burials (37 Pa.C.S. § 507). PennDOT contracted Markosky Engineering Group, Inc. (Markosky) to conduct a geophysical survey and Phase I archaeological survey. Ground penetrating radar and resistivity surveys were conducted. Ground penetrating radar is a geophysical method that uses radar pulses to image subsurface features. Resistivity surveys use electrical resistance meters to detect and map subsurface archaeological features.

The ground penetrating radar and resistivity surveys identified graves behind the retaining wall, in addition to several subsurface anomalies. As a control, a limited survey was also conducted beyond the APE within the known cemetery boundaries. The survey noted that the physical grave markers did not align with the burial shafts in all cases, and several potential unmarked burials were observed. Following the geophysical survey, the top portion of the soil was removed to confirm the presence of the grave shafts. Subsequent archaeological excavation revealed a late 19th–early 20th-century historic domestic

site overlaying some of the burial features. Upon identification of potential historic grave shafts, excavations halted (Rowles and Ricketts 2017:20; Schumer et al. 2018).

Additional shovel tests and test units were excavated during Phase II investigations to assess the eligibility of the historic occupation and determine if there were additional burial shafts. All excavations were directed by archaeologists who met the professional qualifications specified by the Secretary of the Interior's Standards and Guidelines (36 CFR § 61). Four potential burial shaft features, two unengraved grave markers, and one marker fragment were identified. The burial shaft features were excavated, but no human remains were encountered. Several nail fragments, possibly coffin hardware, were identified. The features were interpreted as the base of grave shafts whose contents had previously been removed. Subsequent to the removal of the contents, they were partially truncated during grading activities associated with the historic occupation site. Dr. Cassandra Kuba of California University of Pennsylvania analyzed the possible osseous remains recovered from the features, which were determined to be non-human.

The Cemeteries and Graveyards Protect Act, 1894 (P.L. 397 No. 296), dictates that roads cannot be constructed through cemeteries, but this does not apply to road widening projects. The proactive planning by PennDOT represents adherence to 18 Pa.C.S. § 5509 (Desecration, theft or sale of venerated objects). Following the mandates of the Burial Grounds Conveyance Act, 1913 (P.L. 551, No. 354), the Friedens Cemetery Association and Friedens Lutheran Church were involved with initial planning. Because the cemetery and its contents were claimed by the church and cemetery association, the remains were not unidentified or unclaimed; however, the coroner was notified because of the potential to find

human remains. No *in situ* above-ground burial markers or gravestones were identified; therefore, the Historic Burial Places Preservation Act, 1994 (P.L. 141, No. 22) did not apply.

The portions of the historic domestic site within the APE did not contribute to the site's overall eligibility. Markosky recommended protective fencing along the APE boundary near the historic site area during construction to avoid impacting the site. It also recommended monitoring during construction to ensure no additional unmarked burials were disturbed (Rowles and Ricketts 2017:20; Schumer et al. 2018).

No intact burial features, coffins, coffin hardware, or human remains were identified during monitoring (Schumer et al. 2018:24); therefore, the services of the funeral home and county coroner were not needed. The POA proactively and effectively managed expectations and procedures in the event that human remains or graves were encountered. Careful planning and consultation of interested parties helped this project to run smooth and led to the identification of a historic site, as well as marking a more accurate boundary of a historic cemetery (Susanne Haney, PennDOT, personal communication, 2020).

Table 3. Legislation considered during the SR 0281 Sec 23S road widening and retaining wall removal in Somerset County, PA.	
Legislation	Brief Explanation of Legislation
36 CFR § 61	Secretary of the Interior’s Standards and Guidelines
Burial Grounds Conveyance Act, 1913 (P.L. 551, No. 354)	Recognizes the authority of church and cemetery associations regarding the disposition of burial sites
The County Code – Amend Ambulances and Coroners Act, 1990 (P.L. 602, No. 152)	Describes the coroner’s investigation regarding an unidentified and unclaimed bodies (Sections 1237, 1240)
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate a historic burial lot or historic burial place
37 Pa.C.S.	Criteria for state-funded projects, including background research and consultation
25 Pa. Code	Regarding DEP permitting requirements for earth disturbing activities

Table 4. Interested parties involved with the SR 0281 Sec 23S road widening and retaining wall removal in Somerset County, PA.

Interested Parties	Brief Explanation of Project Role
PennDOT	State authority providing project oversight
PHMC/SHPO	Offered guidance and comments. Provided concurrence on project effect and Determination of Eligibility for a historic archaeological site encountered among the burials.
Friedens Cemetery Association; Friedens Lutheran Church	Church and cemetery associations affiliated with the burial ground
Somerset County Court of Common Pleas	Approved disinterment and reinterment request
Markosky	Archaeological CRM firm contracted to conduct field operations
California University of Pennsylvania	Forensic anthropologist contacted to determine origins of potential human remains
Historic and Genealogical Society of Somerset County	Consulting party; received copies of records
Pennsylvania Archaeological Council	Consulting party
Deaner Funeral Home	Would have temporarily stored remains and assisted with reinterment
Public	Notified PennDOT of possible burials; personal interest because ancestors could be disturbed

Absentee Shawnee; Delaware Nation; Eastern Shawnee; Shawnee Tribe	Tribal consulting parties
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Schuylkill County, SR 61 Section 16S Road Widening and Maintenance Project, PennDOT.

Schuylkill County is a rural county in eastern Pennsylvania (Center for Rural Pennsylvania 2014) (see Figure 1). In 2013, PennDOT began efforts to widen State Route 61 Section 16S and address the overly steep embankments eroding onto the roadway as part of a safety project (Mock et al. 2015). The project was funded by FHWA and permitted by DEP (25 Pa. Code; DEP 2002). During work near the embankment, PennDOT employees discovered human skeletal remains. Tables 5 and 6 present a summary of interested parties consulted during this project and associated legislation that facilitated actions.

Prior to the onset of work, PennDOT completed a Section 106 review of the APE, which included privately owned residential land. PennDOT determined that the Schuylkill County Poor House, established in 1855, was in proximity to the project area. Based on the analysis of several historic maps and oral tradition, the District Archaeologist expected that the original location of the Schuylkill County Poor House Cemetery was within the limits of the APE, but records indicated that the cemetery, and presumably the remains, had been moved in the early 20th century (Dirkmaat 2015; Mock et al. 2015; Radziewich 2015). The owners of the property had known about the cemetery when they purchased the property, but no one knew whether the remains were still present (Sheehan 2015). Therefore, when a

design change was enacted for the project, it was not cleared with the District Environmental Unit or District Archaeologist beforehand.

When PennDOT began the State Route 61 widening project, the presumed cemetery location was a privately owned empty field. The field had been leveled by the property owners, but they had not noticed any remains during construction. No human remains were anticipated because historic records suggested that the embankment was beyond the boundary of the cemetery. Upon discovery of human remains, all work stopped and FHWA, PHMC, and the county coroner were notified. Because the remains were unidentified, and to determine the cause of death, the coroner took control of the scene (The County Code Act, 1955, P.L. 323, No. 130; The County Code – Amend Ambulances and Coroners Act, 1990, P.L. 602, No. 152), and the remains were left in place according to the provisions of Section 1240 of the County Code and 18 Pa.C.S. § 5509.

PennDOT contracted with the Mercyhurst Forensic Scene Recovery Team (MFSRT). The MFSRT forensic anthropologists and cadaver dogs conduct a forensic archaeological recovery to facilitate recovery of remains. The excavated remains were analyzed at the Mercyhurst Forensic Anthropology Laboratory for forensic osteological analysis. After the analysis, they were returned to the County Coroner, who had jurisdiction of the remains (Dirkmaat 2015; Radzевич 2015; Sheehan 2015). The final disposition of the remains is unknown to the authors.

PennDOT, FHWA, and the SHPO determined an investigation would help determine the location of human remains (37 Pa.C.S. § 507). Because the site is a historic cemetery, it is not considered to be an archaeological resource. Therefore, only state laws applied. Subsequently, archaeologists from the

Indiana University of Pennsylvania (IUP) completed a ground penetrating radar (GPR) survey next to the ROW to determine whether any additional graves were present. PennDOT and IUP have a cooperative agreement known as PHAST (Pennsylvania Highway Archaeological Survey Team) where PennDOT funds an archaeological internship program and contracts with IUP to perform archaeological activities. Because of this agreement, IUP was able to complete the investigation in a timely manner without the need to pursue a lengthier contracting process. The survey revealed multiple burials across the entire site (Mock et al. 2015).

PennDOT solicited input from the county coroner, FHWA, SHPO, and the public regarding the proposed road widening project. A tremendous amount of effort was put into public outreach to determine the best course of action. In this situation, the public had a large say in guiding the case to an optimal solution (Kevin Mock, PennDOT, personal communication, 2020). Ultimately, the remaining portions of the embankment were avoided to preclude further disturbances to the burial area (Sheehan 2015).

The county coroner took control of the scene; therefore, no permits were required to remove the remains. Because Schuylkill County is a fourth-class county, the remains were permitted to be stored at the Mercyhurst Forensic Anthropology Laboratory rather than the county morgue (The County Code Act, 1955, P.L. 323, No. 130; Pennsylvania Courts n.d.). SHPO assisted with historic cemetery compliance. No church or cemetery associations or descendant groups were involved; therefore, the Burial Grounds Conveyance Act did not apply. No grave markers were encountered; therefore, the Historic Burial Places Preservation Act did not apply. Because cemeteries are not considered archaeological resources, Section 106 legislation did not apply.

Table 5. Legislation considered during the SR 0061 Sec 16S road widening and embankment maintenance in Schuylkill County, PA.	
Legislation	Brief Explanation of Legislation
Section 106 compliance (Federal)	Criteria for federally funded projects, including background research and consultation
The County Code Act, 1955 (P.L. 323, No. 130)	Describes the coroner's duties regarding unidentified or unclaimed bodies (Subarticle B)
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate a historic burial lot or historic burial place
37 Pa.C.S. § 507	Regarding archaeological cultural resources and surveys to determine cultural significance except on private property
25 Pa. Code	Regarding DEP permitting requirements for earth disturbing activities

Table 6. Interested parties involved with the SR 0061 Sec 16S road widening and embankment maintenance in Schuylkill County, PA.	
Interested Parties	Brief Explanation of Project Role
FHWA	Federal authority providing project oversight
PennDOT	State authority providing project oversight
Landowners	Privately owned land
Schuylkill County Coroner	Jurisdiction of the scene upon discovery of human remains
MFSRT; IUP	Archaeological CRM firms contracted to conduct field operations
Mercyhurst University	Forensic anthropologist contacted to determine origins of potential human remains
Public	Guided project to optimal solution

Philadelphia County, Blockley Almshouse Cemetery Relocation Project, Kise Straw and Kolodner. Kise Straw and Kolodner was an architectural and planning firm with a cultural resource management department operating out of Philadelphia. Philadelphia County is an urban county in southeast Pennsylvania (Center for Rural Pennsylvania 2014) (see Figure 1). In 2001, Kise Straw and Kolodner was contracted regarding the private construction of a parking garage for the Hospital of the University of Pennsylvania and the Children’s Hospital of Philadelphia. During bulk soil excavation, the construction crew inadvertently discovered a historic cemetery with human skeletal remains. Tables 7 and 8 present a summary of interested parties consulted during this project and associated legislation that facilitated actions.

Much of the University of Pennsylvania is located over the historic Blockley Almshouse, which was founded in 1713 and represented the first city hospital in the nation, serving the city's poor, orphaned, and insane (Crist et al. 2017; Morrell et al. 2003). Limited documentation existed about the associated cemetery. In the mid-19th century, the area was used as a municipal dump, and in the late-19th century, a sewer line was constructed through the area. Although previous research and survey work had identified the cemetery, no human remains were expected. This may reflect either inadequate background research on the part of the private developer and/or the belief that the cemetery had been removed or destroyed in 1974 during the construction of the adjacent Civic Center (Morrell et al. 2003).

When human remains were discovered, all work stopped, and law enforcement was notified. Law enforcement, in turn, notified the Philadelphia Medical Examiner's office. Because the remains were unidentified and in order to determine the cause of death, the medical examiner took control of the scene (The County Code Act, 1955, P.L. 323, No. 130; The County Code – Amend Ambulances and Coroners Act, 1990, P.L. 602, No. 152), and the remains were left in place according to the provisions of Section 1240 of the County Code and 18 Pa.C.S. § 5509. Upon determination of the historic context, the medical examiner contacted Dr. Thomas Crist, a forensic anthropologist, who in turn supervised excavation of the human remains. Nearly all of the property had been mechanically stripped and leveled prior to the discovery of human remains, but hundreds of burials were identified and removed. The burials included both individual burials and cluster burials of medical specimens (Crist et al. 2017). The individual burials were temporarily stored until they could be reburied, while the medical specimens were analyzed prior to reinternment. A disinterment permit was granted retroactively by the Philadelphia Orphan's Court, circumnavigating 28 Pa. Code § 1.25.

Because the project was privately funded and on private property, state and federal permits were not required. And, because the project was not funded by the state or federal government, PHMC had no authority on site, and Section 106 federal legislation did not apply. Although PHMC was not involved or notified about the cemetery, Kise Straw and Kolodner filed a Pennsylvania Archaeological Site Survey (PASS) for an archaeological Late Archaic Native American site discovered beneath the burials (PHMC 2004). The county medical examiner took control of the scene; therefore, no permits were required to remove the remains; however, a permit was granted retroactively. No church or cemetery associations or descendant groups were involved; therefore, the Burial Grounds Conveyance Act did not apply. No grave markers were encountered; therefore, the Historic Burial Places Preservation Act did not apply.

Table 7. Legislation considered during the Blockley Almshouse cemetery relocation project in Philadelphia County, PA.	
Legislation	Brief Explanation of Legislation
The County Code Act, 1955 (P.L. 323, No. 130)	Describes the coroner’s duties regarding unidentified or unclaimed bodies (Subarticle B)
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate historic burial lots or historic burial places

Table 8. Interested parties involved with the Blockley Almshouse cemetery relocation project in Philadelphia County, PA.	
Interested Parties	Brief Explanation of Project Role
Landowners	Privately owned land
Philadelphia County Medical Examiner	Jurisdiction of the scene upon discovery of human remains
Kise Straw and Kolodner	Archaeological CRM firms contracted to conduct field operations
Kise Straw and Kolodner	Forensic anthropologist contacted to determine origins of potential human remains
Philadelphia Orphan’s Court	Approved disinterment of remains

Philadelphia County, First Baptist Church of Philadelphia Cemetery, AECOM. AECOM is a Fortune 500 infrastructure firm that provides design, planning, engineering, consulting, and construction management solutions for development projects (AECOM 2020). AECOM also develops and implements public-outreach programs to raise awareness and stewardship in historic preservation (AECOM n.d.).

Philadelphia County is an urban county in southeast Pennsylvania (Center for Rural Pennsylvania 2014) (see Figure 1). In 2016 and 2017, AECOM was contracted to relocate a newly discovered cemetery on behalf of PMC Property Group, LLC, prior to site construction. Tables 9 and 10 present a summary of interested parties consulted during this project and associated legislation that facilitated actions.

In 1707 the former First Baptist Church of Philadelphia Cemetery was established. The church and cemetery properties were sold in 1859 when they relocated to Mount Moriah in West Philadelphia. The church arranged for all burials to be relocated to the new cemetery in Mount Moriah, and the headstones were moved. In the subsequent years, a hat factory then later a parking lot were constructed on the property. Although previous research had identified the cemetery, no human remains were expected due to the documented relocation (AECOM 2017).

However, human remains were encountered in the project area several different times. It is likely that, similar to other documented historic cases in Pennsylvania (DeJesus 2019; Haas 2020; PAF n.d.b), only the headstones were relocated, while the burials remained in their original locations. Presumably developers believed that the remains were not significantly impacted by the construction, nor were the present remains abundant enough to influence construction plans. Therefore, PMC continually attempted to work around the remains.

First, in 2016, law enforcement was notified regarding unidentified human remains (The County Code Act, 1955 (P.L. 323 No., 130). The medical examiner confirmed the historic nature of the site, but did not take responsibility for the site. The remains were stored on site for a planned reburial within the project area. No further human burials or remains were anticipated. In 2017, additional remains were encountered in a different area of the site. The number of human burial features were significant enough to halt work. PMC contracted forensic scientists at Rutgers University-Camden (RU-C) to disinter and store the remains. The forensic scientists from RU-C excavated to a depth of 10 feet below ground surface, and no further remains were anticipated below this depth. However, later that year, additional burials were identified more than 17 feet below ground surface.

Following these discoveries, the City of Philadelphia Office of Licenses and Inspections (OLI) suggested additional mitigation. The OLI enforces Philadelphia city codes for the safe and lawful construction of buildings through inspections, licensing, permitting, and demolitions (City of Philadelphia, n.d.a). In response, PMC hired AECOM to handle the archaeological disinterment of the remains. A disinterment permit was acquired through the Philadelphia County Court of Common Pleas, circumnavigating 28 Pa. Code § 1.25. The courts took jurisdiction over the remains at this time, and PMC was required to seek permission for further actions and provide regular updates about the remains.

AECOM followed the guidelines published by PHMC (PA SHPO 2017), and its archaeologists met the professional qualifications outlined in 36 CFR § 61. Furthermore, AECOM coordinated with RU-C to establish project-specific protocols, in consultation with PMC, to ensure that the relocation maintained high quality, respectful standards. Through these actions, more than 300 disinterments were completed. The remains were stored temporarily at RU-C and other approved institutions for basic analysis prior to re-interment at Mount Moriah.

Because the project was privately funded and on private property, state and federal permits were not required. And, because the project was not funded by the state or federal government, PHMC had no authority on site, and Section 106 federal legislation did not apply. Neither the church nor potential descendant groups were informed or involved in the proceedings; therefore, the Burial Grounds Conveyance Act did not apply. No grave markers were encountered; therefore, the Historic Burial Places Preservation Act did not apply. Local legislation, such as the Old City Historic District designation, did not apply because the Old City District (OCD) supplements, rather than replaces, the services of the municipal government. The OCD supervises services, such as street cleaning and

maintenance, public safety, economic development, marketing, and improvement (OCD 2014), and a cemetery relocation project is beyond its scope.

The medical examiner did not establish authority over the site, presumably because of the historic nature and absence of suspicious or medicolegal concerns. The medical examiner contacted PHMC, OLI, and the Philadelphia Historical Commission. These agencies declined authority, claiming their lack of jurisdiction (Salisbury 2016). Other individuals claimed that PMC was obligated to contact the Orphan's Court, part of the Court of Common Pleas, because this division supervises matters related to people, property, and entities that are unable to represent themselves (Gordon 2017). The role of the courts is also suggested in the provisions of the Supplementary Act, Burial Grounds Act, 1887 (P.L. 96, No. 47), wherein courts are empowered to direct removal of remains from neglected burial grounds. Because of the loss of context and possible damage to the remains, this project only partially adhered to the tenets of 18 Pa.C.S. § 5509.

Table 9. Legislation considered during the First Baptist Church of Philadelphia Cemetery relocation project in Philadelphia County, PA.	
Legislation	Brief Explanation of Legislation
Supplementary Act, Burial Grounds Act, 1887 (P.L. 96, No. 47)	Empowers courts to direct removal of remains from neglected burial grounds
The County Code Act, 1955 (P.L. 323, No. 130)	Describes the medical examiner's duties regarding unidentified or unclaimed bodies (Subarticle B)
36 CFR § 61	Secretary of the Interior's Standards and Guidelines
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate a historic burial lot or historic burial place
37 Pa.C.S. § 507	Limits PHMC's authority regarding private property

Table 10. Interested parties involved with the First Baptist Church of Philadelphia Cemetery relocation project in Philadelphia County, PA.	
Interested Parties	Brief Explanation of Project Role
PMC Property Group, LLC	Private Developers
Philadelphia County Medical Examiner	Verified historic nature of site, but did not take authority of site
RU-C	Forensic scientists who assisted with the disinterment of remains
City of Philadelphia OLI	Recommended archaeological work, but declined authority of site
PHMC	Provided guidelines for work, but declined authority of site
Philadelphia Historical Commission	Declined authority of site
AECOM	Archaeological CRM firms contracted to conduct field operations
Philadelphia County Court of Common Pleas	Jurisdiction of the site and approved disinterment request

Allegheny County, National Aviary Four Seasons Pavilion Project, Christine David Consultants.

Christine David Consultants (CDC) has more than 34 years of experience managing thousands of cultural resource projects in and around Pennsylvania. With extensive experience in the Section 106 processes and requirements of various State Historic Preservation Offices (SHPOs), CDC has

coordinated projects with all levels of government agencies and non-profit historic preservation projects (CDC 2020).

Allegheny County is an urban county in western Pennsylvania (Center for Rural Pennsylvania 2014) (see Figure 1). Christine David Consultants was contracted by an undisclosed private developer to assist with the construction of a new addition to the National Aviary. Tables 11 and 12 present a summary of interested parties consulted during this project, the sequence of events, and associated legislation that facilitated actions.

Background research revealed two major historic occupations associated with the aviary. Previously it was the site of the historic Western State Penitentiary complex, which was in use in the 19th century, and prior to that, it was the site of a late 18th century burial ground. Historic documents suggested that the graves had been relocated in the mid-19th century (CDC n.d.).

Developers were concerned with exposing human remains associated with the burial ground. Therefore, CDC worked with the developers to monitor the site and establish a preemptive reburial plan. Although no human remains were encountered, CDC provided a redacted copy of the reburial plan. As stipulated by the reburial plan, all work would stop if clearly identifiable human remains were encountered. If skeletal remains were observed that the archaeological monitor could not clearly identify as human, then a forensic anthropologist would assess the remains. Once the presence of human remains was verified, the immediate area surrounding the remains would be cordoned off and avoided. The archaeological monitor would contact the county medical examiner, who would notify law enforcement. The medical

examiner and law enforcement officials would assess the area. Under the supervision of the medical examiner, CDC archaeologists would disinter and store the remains until they were reinterred.

The CDC archaeologists took comfort in the reburial plan because, although the land was owned by the city, appropriate legislation and procedures were unclear. Because the excavations of the cemetery were privately funded, no state or federal permits were required, there was no legal obligation to report to PHMC, and Section 106 federal legislation did not apply. PHMC further indicated that it had no jurisdiction over city-owned land. Pittsburgh-specific legislation was not mentioned.

Although no human remains were encountered, the reburial plan followed the rough guidance of existing legislation. Had remains been discovered and were unidentified, the medical examiner would have been afforded authority over the site (The County Code Act, 1955, P.L. 323, No. 130, and subsequent amendments). If remains were encountered, work would stop and the area would be avoided, following the provisions of Section 1240 of the County Code and 18 Pa.C.S. § 5509. Because the county medical examiner would have maintained authority, no permits would have been required to remove any remains. No church or cemetery associations or descendant groups were involved; therefore, the Burial Grounds Conveyance Act did not apply. No grave markers were encountered; therefore, the Historic Burial Places Preservation Act did not apply.

Table 11. Legislation considered during the National Aviary Four Seasons Pavilion project in Allegheny County, PA.	
Legislation	Brief Explanation of Legislation
The County Code Act, 1955 (P.L. 323, No. 130)	Describes the coroner’s duties regarding unidentified or unclaimed bodies (Subarticle B)
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate historic burial lots or historic burial places

Table 12. Interested parties involved with the National Aviary Four Seasons Pavilion project in Allegheny County, PA.	
Interested Parties	Brief Explanation of Project Role
Landowners	City-owned land
Allegheny County Medical Examiner	Jurisdiction of the scene upon discovery of human remains
Christine David Consultants	Archaeological CRM firms contracted to monitor construction efforts
Forensic Anthropologist (not specified)	Contacted to determine origins of potential human remains

Allegheny County, Duncan Heights/Lakeview Cemetery, Christine Davis Consultants. Allegheny County is an urban county in western Pennsylvania (Center for Rural Pennsylvania 2014) (see Figure 1). In 2013, Christine David Consultants was contracted by an undisclosed private developer to assist with

the construction of a sewer line through the abandoned Duncan Heights Cemetery. Tables 13 and 14 present a summary of interested parties consulted during this project, the sequence of events, and associated legislation that facilitated actions.

The cemetery was in use between 1931 and 1961, and is predominantly comprised of U.S. veterans. Although the cemetery is no longer active and the northern portion has not been maintained for years, the southern portion of the cemetery is maintained by volunteers (CDC 2013:2). CDC searched wills and deeds associated with the cemetery, but was unable to determine a legal owner. Additional work was recommended because the poor condition of the cemetery precluded identification of burial features.

Developers were concerned with exposing human remains associated with the burial ground. Therefore, CDC worked with the developers to establish a plan to avoid burials and human remains. A GPR survey and additional cemetery research were recommended to locate burial features. In areas not conducive to GPR surveys, monitoring of mechanical excavations was recommended. Additionally, the proposed sewer line was rerouted to align with the former access road.

The outcome of this project is unknown. While CDC purportedly submitted a Cemetery Survey Form to PHMC, no such form could be located. CDC did, however, provide a redacted copy of its recommendations. Because the excavations of the cemetery were privately funded, state and federal permits were not required, PHMC had no authority on site, and Section 106 federal legislation did not apply. Pittsburgh-specific legislation was not mentioned.

No reburial plan was established. The developer sought to avoid burials and human remains, following the guidelines of 18 Pa.C.S. § 5509. Therefore, no court orders or disinterment permits were required. Because the cemetery is abandoned and neglected, and no church or cemetery associations or descendant groups were identified, the Burial Grounds Conveyance Act did not apply. No above-ground burial markers or gravestones were disturbed or relocated; therefore, the Historic Burial Places Preservation Act, 1994 (P.L. 141, No. 22) did not apply. Although it was not used, the Burial Grounds, Municipal Control Act, 1923 (P.L. 198, No. 144) applied to this situation, wherein the courts have the authority to designate the local government as the caretaker of a neglected burial grounds. Additionally, because the cemetery includes several interments of U.S. service members, the tenants of 18 Pa.C.S. § 5509 are in effect.

Table 13. Legislation considered during the Duncan Heights Cemetery project in Allegheny County, PA.	
Legislation	Brief Explanation of Legislation
Historic Burial Places Preservation Act, 1994 (P.L. 141, No. 22)	Removal of grave markers and memorials must be clearly documented
37 Pa.C.S. § 507	Outlines PHMC’s authority
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate historic or veteran’s burial places

Table 14. Interested parties involved with the Duncan Heights Cemetery project in Allegheny County, PA.	
Interested Parties	Brief Explanation of Project Role
Landowners	Township-owned land
Christine David Consultants	Archaeological CRM firms contracted to monitor construction efforts

Dauphin County, Hamaker Cemetery Boundary Delineation, Skelly and Loy. Dauphin County is an urban county in southeast Pennsylvania (Center for Rural Pennsylvania 2014) (see Figure 1). In 2002, Skelly and Loy was contracted to relocate a newly discovered unmarked family burial plot on behalf of Hershey Foods, when the plot was encountered during earth moving activities. No human remains were encountered during this project. Because the project was privately funded and on private property, did not require state or federal permits, and had no state or federal funding, PHMC had no authority regarding archaeological survey (37 Pa.C.S. § 507), and Section 106 federal legislation did not apply. Tables 15 and 16 present a summary of interested parties consulted during this project, the sequence of events, and associated legislation that facilitated actions.

The Hamaker family occupied the site between 1762 and 1852. More recently, the land had been used for agriculture, and no evidence existed of the subterranean interments. It was suspected that the landowners subsequent to the Hamaker tenure may have purposefully flattened the headstones. Therefore, human remains and burials were not anticipated at the site. Upon identification of gravestones, the work stopped, and the area was secured, following the provisions of 18 Pa.C.S. § 5509.

The Dauphin County coroner was notified but did not take jurisdiction of the site (The County Code Act, 1955, P.L. 323, No. 130 and subsequent amendments). PHMC was contacted and provided guidance to Skelly and Loy. Archaeologists and geomorphologists from Skelly and Loy assessed the site, conducted archival research, and considered mitigation options to establish a cemetery delineation plan (Espenshade 2002).

Eleven suspected graves were identified. All legible inscriptions indicated burial of individuals from the Hamaker family, all predating 1820. Based on the dates and size of the graves, the burials included adults, juveniles, and infants. No human remains were recovered. No artifacts or gravestones were removed from the site. All headstones had been displaced from their original locations, and it was not possible to link a specific burial feature to a particular gravestone. Skelly and Loy recommended that the site either be preserved in place or relocated (Espenshade 2002).

A public notice was posted in the local newspaper and online to notify interested parties and identify descendants. Subsequently, a licensed land surveyor noted the location of the burials for Hershey Foods, adhering to the principal of the Historic Burial Places Preservation Act (1994, P.L. 141, No. 22).

Hershey Foods, in consultation with interested parties and descendants, preserved the cemetery in place. Permanent fencing was installed, and the headstones were enshrined in a masonry wall to preserve their association with the graves. A public rededication ceremony was held. The delineation and preservation of the Hamaker Cemetery earned a Preservation Pennsylvania Award in 2003 (Christopher Espenshade, personal communication, 2020).

While evidence of burial features, displaced grave markers, and coffin hardware were identified, no human remains were encountered during the project (Espenshade 2002). Therefore, the services of the county coroner were not needed. The cemetery delineation plan managed recommendations and procedures at the site. However, because the excavations of the family burial plot were part of a private undertaking, there was no permitting requirements through DEP or legal obligation to report the excavations to PHMC. The coroner did not establish authority over the site, presumably because of the historic nature and absence of human remains (The County Code Act, 1955, P.L. 323, No. 130, and subsequent amendments). Because gravestones were encountered but not removed, the Historic Burial Places Preservation Act did not apply. Efforts were made to identify descendants, which suggests consideration of the Burial Grounds Conveyance Act.

Table 15. Legislation considered during the Hamaker Cemetery Boundary Delineation project in Dauphin County, PA.	
Legislation	Brief Explanation of Legislation
37 Pa.C.S. § 507	Limits PHMC’s authority regarding private property
Burial Grounds Conveyance Act, 1913 (P.L. 551, No. 354)	Recognizes the authority of church and cemetery associations regarding the disposition of burial sites
The County Code Act, 1955 (P.L. 323, No. 130)	Describes the medical examiner’s duties regarding unidentified or unclaimed bodies (Subarticle B)
The County Code – Amend Ambulances and Coroners Act, 1990 (P.L. 602, No. 152)	Describes the coroner’s investigation regarding a deceased body (Sections 1237, 1240)
Historic Burial Places Preservation Act, 1994 (P.L. 141, No. 22)	Removal of grave markers and memorials must be clearly documented
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate historic burial lots or historic burial places

Table 16. Interested parties involved with the Hamaker Cemetery Boundary Delineation project in Dauphin County, PA.	
Interested Parties	Brief Explanation of Project Role
Hershey Foods	Private Developers
Dauphin County Medical Examiner	Notified of potential human remains
PHMC	Provided guidance for archaeological work
Skelly and Loy	Archaeological CRM firm contracted to conduct field operations
Public	Used to find descendent groups

Legislation in Other States. In contrast to Pennsylvania, other states have adjusted and updated legislation to account for consideration of historic and archaeological human remains and burial contexts. Five of these states are described below, including Florida, Massachusetts, Nebraska, Virginia, and West Virginia (Table 17). In many states, the discovery of possible human remains must be reported immediately to legal authorities, such as local or state police and/or medical examiners or coroners (e.g., Mass. Gen. Laws Chapter 38, § 6 [Unmarked human remains]; Massachusetts Historical Commission, n.d.; Wash. Rev. Code § 68.50.645 [Skeletal human remains]). This applies to all types of property, including private land. Once the remains have been determined non-forensic, additional laws are implemented.

Many states have established protocol for the discovery of historic or archaeological human remains and burials (Fla. Stat. § 872.05 [Unmarked human burials]; Iowa Code § 263B [State archaeologist]; Mass.

Gen. Laws Chapter 114 § 17 [Preservation of ancient burial places]; Mass. Gen. Laws Chapter 38 § 6 [Unmarked human remains]; Minn. Stat. § 307.08 [Private Cemeteries Act]; Nebraska Rev. Stat. § 12-1201 [Unmarked Human Burial Sites and Skeletal Remains Protection Act]; Tex. Nat. Res. Code Ann. § 191 [Antiquities Code]; Tex. Admin. Code § 711.010 [Discovery of unknown or abandoned cemeteries]; Tex. Health and Safety Code § 711.010 [Abandoned, unknown, or unverified cemetery]; Va. Code Ann. § 10.1 [Virginia Antiquities Act]; Va. Code Ann. § 18.2-126 [Violation of sepulture]; Wash. Rev. Code § 68.50.645 [Skeletal human remains]). These types of legislation streamline and clarify processes required when archaeological or historic human remains and burials are identified. However, further complications can result in some cases. For example, in states such as Virginia and Florida, only licensed funeral directors have the jurisdiction to move human remains (Fla. Stat. § 497.384 [Disinterment]; Va. Code Ann. § 54.1-2811.1 [Handling and storage of human remains]), and conflict may arise in situations where they are not informed of archaeological or historic cemetery movements.

Typically, in states with established historic and archaeological burial legislation, it is illegal to disturb human remains knowingly and willfully, regardless of land ownership, length of time since burial, culture, or other factors. In most cases, all activity in the area must terminate immediately upon the identification of possible human remains to facilitate assessment by law enforcement, medical examiners, archaeologists, tribal affiliates, and other appropriate individuals. Consultation with interested parties and stakeholders is often highly recommended or required. Just as with NAGPRA, activity generally cannot continue until the site has been cleared by the appropriate authorities. Often, the agency that needs the remains relocated is fiscally responsible for processes and proceedings.

Nebraska: Unmarked Human Burial Sites and Skeletal Remains Protection Act. Nebraska handles archaeological and historic burial sites and human remains using the guidelines described in Neb. Rev. Stat. § 12-1201–12-1212 (Unmarked Human Burial Sites and Skeletal Remains Protection Act) (see Table 17). This legislation supersedes any other state legislation about human remains and burial sites designed for more recent contexts. When unmarked human remains are encountered, local law enforcement must be notified within 48 hours. Law enforcement notifies the property owner, the county attorney, and the Nebraska State Archaeology Office (SAO) History Nebraska (formerly the Nebraska State Historical Society). The county attorney determines the medicolegal significance of the remains, while the SAO determines the cultural association of the remains. Archaeological remains are to be left in place to the maximum extent possible.

This act authorizes the SAO to handle all matters pertaining to archaeological and historic human remains and burials and provides an annual budget to facilitate these responsibilities. Non-Native American remains are interred based on consultation between the SAO, county attorney, and county coroner in a local cemetery. The county attorney shoulders the financial responsibility for reburial efforts. If Native American remains are identified, the Commission on Indian Affairs and any associated tribal groups are notified. Since History Nebraska receives federal funding, once Native American remains are identified by the SAO, the process for consultation and repatriation follows the federal NAGPRA (25 U.S.C. §§ 3001 et seq).

The SAO is tasked with the recovery and basic analysis of the remains that cannot be preserved in place and consultation with descendant families. One year of scientific study is allotted to determine the origin of the remains. Penalties are outlined in the event that any human remains or burial sites are knowingly

disturbed, concealed, or sold. For example, it is considered a fourth-degree felony for the unauthorized disturbance of remains.

The SAO indicated that while individuals and developers were initially wary of the legislation, they have since recognized the benefits (Rob Bozell, History Nebraska, personal communication, 2020). Not only is there an established protocol and chain of command to follow when human remains or burials are encountered, but the SAO's guidance can greatly assist with mitigation and adjustments. Rarely are projects cancelled or waylaid indefinitely, and individuals appreciate the SAO's ability to balance concern for archaeological resources with development and planning needs. Therefore, the Nebraska legislation represents a relatively simple and advantageous way to document basic chain of command and responsibilities.

Virginia: Virginia Antiquities Act. Virginia handles archaeological and historic burial sites and human remains using the guidelines described in Va. Code Ann. § 10.1 (Virginia Antiquities Act) (see Table 17). Isolated burials and cemetery cases are handled in similar manners under this act. The act mandates that no archaeological human remains can be removed from the field without a permit from the Virginia Department of Historic Resources (VDHR). Once human remains are recognized, unauthorized disturbance of remains is considered a fourth-degree felony (Va. Code Ann. § 18.2-126 [Violation of sepulture]).

However, no framework exists in state code regarding the sequence of actions required upon discovery of human remains. Instead, laws and rules are scattered across several different parts of the Virginia Code. While the state recommends that law enforcement be notified when human remains are

discovered (VDHR 2020), like Pennsylvania, there is no legislation specifically mandating notification for suspected historic cases. Va. Code Ann. § 32.1-283 (Investigation of deaths) requires notification of the Office of the Chief Medical Examiner largely for suspicious deaths. Furthermore, law enforcement is not required to notify VDHR in suspected cases of historic or archaeological remains (Joanna Green, VDHR, personal communication, 2020). While other legislation indicates that only licensed funeral directors with valid burial transit permits have the authority to physically move unmarked graves (Va. Code Ann. § 54.1-2811.1 [Handling and storage of human remains]), VDHR permits are generally exempt from these requirements (Joanna Green, VDHR, personal communication, 2020). Under the VDHR permits, archaeologists are allowed to remove, transport, and temporarily house remains until reinterment.

Therefore, if an archaeologist notifies VDHR, then VDHR can issue a permit. However, if no one notifies VDHR about historic or archaeological human remains, then there is no oversight. Existing legislation does not support VDHR to enforce its authority or oversee such cases. These gaps in legislation result in inaccurate accounting of archaeological and historic human remains by VDHR. However, when permits are issued, VDHR commonly works with law enforcement and funeral directors to ensure proper handling of remains. As illustrated in a Leesburg, Virginia, project (Rodriguez 2018), financial responsibility regarding unmarked human remains typically belongs to the individual or agency that owns the land and proposes to use the land for purposes other than a cemetery. When the VDHR permit is in effect, work cannot recommence until the requirements of the permit have been fulfilled.

West Virginia: Protection of Human Skeletal Remains, Grave Artifacts, and Grave Markers. West Virginia handles archaeological and historic burial sites and human remains more than 50 years old

using the guidelines described in W. Va. Code § 29-1-8A (Protection of human skeletal remains, grave artifacts, and grave markers) (see Table 17). This legislation calls for the respectful treatment of all human remains regardless of cultural or religious affiliation or location of discovery. When unmarked human remains are encountered, local law enforcement must be notified within 48 hours. If the grave is unmarked or unidentified, law enforcement notifies the West Virginia Director of the Historic Preservation Section to determine whether the site is archaeological in nature. When the remains are identified during authorized archaeological work, the West Virginia Director of the Historic Preservation Section must be notified immediately. In all cases, activity must cease immediately. Once human remains are recognized, unauthorized disturbance of remains is considered a felony.

Like the state of Virginia, legislation mandates that no archaeological human remains can be removed from the field without a permit from the Department of Historic Preservation Section, with the exception of Section 106 projects. The permit must address notification of lineal descendants, the manner in which remains shall be handled, scientific analysis, reburial practices, curation procedures, and any other appropriate conditions. Financial responsibility is borne by the permit applicant. Furthermore, to encourage the protection of unmarked graves, the property owner may apply to the Historic Preservation Section for property taxation exemption.

Massachusetts: Unmarked Human Burial Law; Preservation of Ancient Burial Places.

Massachusetts handles archaeological and historic burial sites and human remains using the guidelines described in Mass. Gen. Laws Chapter 38 § 6 (Unmarked human remains), and Mass. Gen. Laws Chapter 114 § 17 (Preservation of ancient burial places) (see Table 17). This legislation distinguishes between unmarked or isolated remains with no known cemetery association (Mass. Gen. Laws

Chapter 38 § 6 [Unmarked human remains]) and remains from recognizable cemeteries (Mass. Gen. Laws Chapter 114 § 17 [Preservation of ancient burial places]). This separation is advantageous because of the differential contexts associated with each type of burial.

Regardless of burial type, the discovery of human remains must be reported to the Office of the Chief Medical Examiner immediately (Mass. Gen. Laws Chapter 38 § 3 [Duty to report deaths]). Penalties may be incurred for failure to report discoveries. In the case of unmarked or isolated human remains, the medical examiner assesses the remains to determine whether they are more than 100 years old. For old remains, the state archaeologist becomes involved. The state archaeologist assesses the ancestry of the remains. If the remains are determined to be of Native American ancestry, the archaeologist notifies the Commission on Indian Affairs to evaluate the site where the remains were recovered. If the remains are determined to be non-native, the state archaeologist must consult with site owners and other interested parties to determine the best procedures to handle the remains.

Under the tenants of Mass. Gen. Laws Chapter 114 § 17 (Preservation of ancient burial places), if the site represents a burial place, such as a cemetery, the site cannot be alienated or appropriated for any other uses unless authorized by the general court. However, if it is impossible to avoid future harm to the site, then the state archaeologist removes the remains under the supervision of the Commission (for native remains), landowners (for non-native remains), and other interested parties. Additionally, the law includes provisions for archaeological research and analysis.

Ultimately, regardless of interment type (unmarked or cemetery), the agency that necessitates the removal of human remains bears the financial burden and responsibility for skeletal analysis and

reinterment (Mass. Gen. Laws Chapter 659 of the Acts of 1983; Mass. Gen. Laws Chapter 386 of the Acts of 1989). However, under the tenants of Mass. Gen. Laws Chapter 114 § 18 (Care of neglected burial places within limit of town), the town wherein the cemetery is located may take responsibility for the burial grounds. Subsequently, any removal of remains or alterations to the cemetery are the financial responsibility of the town.

Florida: Unmarked Human Burial Act. Florida handles archaeological and historic burial sites and human remains using the guidelines described in Fla. Stat. § 872 (Offenses concerning dead bodies and graves) (see Table 17). Like in Massachusetts, this legislation distinguishes between unmarked or isolated remains with no known cemetery association (Fla. Stat. § 872.05 [Unmarked human burials]), and remains from historic cemeteries (Fla. Stat. § 872.02 [Injuring or removing tomb or monument]). This separation is advantageous because of the differential contexts associated with each type of burial.

In general, the legislation calls for the respectful treatment of all human remains regardless of cultural or religious affiliation or location of discovery. The Act mandates that local law enforcement must be notified immediately when unmarked human remains are identified. If the remains are found in contexts other than authorized archaeological excavation, all activity must cease, and the district medical examiner will be notified. Once human remains are recognized, unauthorized disturbance of remains is considered a third-degree felony. Work can only begin again once the medical examiner or state archaeologist approves.

The medical examiner assesses the remains to determine whether they are more than 75 years old, in which case the state archaeologist assumes jurisdiction. An approved human skeletal analyst will assess

the remains, and the state archaeologist will make reasonable efforts to identify descendants or appropriate cultural groups. The descendants, appropriate cultural groups, or other relevant parties will cooperate to determine the proper disposition of the remains. Significant sites may become jurisdiction of the state. The landowner or developer is fiscally responsible to pay for excavation, analysis, and reinterment of the remains.

The separation of unmarked human remains and known cemeteries is beneficial because the state has jurisdiction in unmarked, isolated cases, while authority of known cemeteries may fall to the descendant groups, landowners, local law enforcement, or the county or city as appropriate (Kathryn O'Donnell Miyar, Bureau of Archaeological Research, Division of Historical Resources, Florida Department of State, personal communication, 2020). If the Philadelphia First Baptist Cemetery, for example, were in Florida, it would be governed by Fla. Stat. § 872.02 instead of Fla. Stat. § 872.05. Although the gravestones were not present to mark the cemetery, it is a known cemetery and human remains are still present. While typically only licensed funeral directors with valid burial transit permits have the authority to move unmarked graves in Florida (Fla. Stat. § 497.384 [Disinterment]), this more generally refers to known contexts, such as those covered under Fla. Stat. § 872.02.

Table 17. Summary of procedures established in select states.							
Considerations	Nebraska (Neb. Rev. Stat. § 12-1201–12-1212)	Virginia (Va. Code Ann. § 10.1 & others legislation)	West Virginia (W. Va. Code § 29-1-8A)	Massachusetts (Mass. Gen. Laws Chapter 114 § 17)	Massachusetts (Mass. Gen. Laws Chapter 38 § 6)	Florida (Fla. Stat. § 872.02)	Florida (Fla. Stat. § 872.05)
Type of Human Remains	Cemetery and Unmarked	Cemetery and Unmarked	Unmarked	Cemetery	Unmarked	Cemetery	Unmarked
Who is Initially Notified about Potential Human Remains?	Law enforcement	Recommended: law enforcement	Law enforcement; also State Archaeologist when encountered during archaeological excavation	OCME	OCME	Law enforcement	Law enforcement
Required Time Frame to Notify Authorities	Within 48 hrs	Not clarified	Within 48 hrs	Immediately	Immediately	Immediately	Immediately
Who Notifies the State Archaeologist?	Law enforcement	Not clarified; often CRM firms notify State Archaeologist	Law enforcement, for unmarked burials, or developers or CRM firm, if identified during archaeological excavation	OCME	OCME	Medical examiner/law enforcement	Medical examiner/law enforcement
Role of State Archaeologist	Determine cultural association and establish jurisdiction over remains	Issue permit for archaeologists to relocate and reinter human remains	Issue permit for removal of human remains, with consideration of descendants, procedures, analyses, reburial, curation, and other conditions.	Assess human remains more than 100 years old	Assess human remains more than 100 years old	Determine cultural association for remains more than 75 years old	Determine cultural association and establish jurisdiction over remains more than 75 years old

Table 17. Summary of procedures established in select states.

Considerations	Nebraska (Neb. Rev. Stat. § 12-1201–12-1212)	Virginia (Va. Code Ann. § 10.1 & others legislation)	West Virginia (W. Va. Code § 29-1-8A)	Massachusetts (Mass. Gen. Laws Chapter 114 § 17)	Massachusetts (Mass. Gen. Laws Chapter 38 § 6)	Florida (Fla. Stat. § 872.02)	Florida (Fla. Stat. § 872.05)
Who has jurisdiction of the site?	State archaeologist	Not clarified	Not clarified	State archaeologist	State archaeologist	Descendant groups, landowners, local law enforcement, county, or city, as appropriate	State archaeologist
Who does the State Archaeologist Notify?	County attorney, property owner, and descendants, as appropriate	Not clarified	Descendant groups as appropriate	Descendant groups, site owners, and other interested parties	Commission of Indian Affairs, descendant groups, site owners, and other interested parties	Descendant groups, landowners, county or city officials, and funeral directors, as appropriate	Descendant groups, landowners, local law enforcement, and county or city officials, as appropriate
Archaeological Skeletal Analysis Allowance	Yes, state archaeologist may assess remains for up to one year using non-invasive methods	Not clarified	Case specific, must be outlined in permit	Yes, state archaeologist assesses remains to determine cultural association and best practices to resolve case	Yes, state archaeologist assesses remains to determine cultural association and best practices to resolve case	Yes, state archaeologist assesses remains to determine cultural association and best practices to resolve case	Yes, state archaeologist assesses remains to determine cultural association and best practices to resolve case
Who is financially responsible?	State/County Attorney	Developer or landowner	Permit applicant	Developer, unless town or other interested party takes responsibility	Developer	Descendant groups or developer	State

Table 17. Summary of procedures established in select states.

Considerations	Nebraska (Neb. Rev. Stat. § 12-1201–12-1212)	Virginia (Va. Code Ann. § 10.1 & others legislation)	West Virginia (W. Va. Code § 29-1-8A)	Massachusetts (Mass. Gen. Laws Chapter 114 § 17)	Massachusetts (Mass. Gen. Laws Chapter 38 § 6)	Florida (Fla. Stat. § 872.02)	Florida (Fla. Stat. § 872.05)
Other Comments	Fourth-degree felony for unauthorized disturbance of remains	State archaeologist works with law enforcement and funeral directors to process remains; fourth-degree felony for unauthorized disturbance of remains	Property tax exemption to encourage protection of unmarked graves; felony for unauthorized disturbance of remains	Third-degree felony for unauthorized disturbance of remains	Third-degree felony for unauthorized disturbance of remains	Typically, only a licensed funeral director has authority to move graves; Third-degree felony for unauthorized disturbance of remains	Third-degree felony for unauthorized disturbance of remains

Discussion

The case studies present the myriad ways that human remains are handled in Pennsylvania and in other states. In Pennsylvania, many agencies expressed the desire to do right in these situations, but procedures are unclear, and have the potential to hold up projects and create additional delays and challenges. Some of the key issues impacting the stewardship and care of archaeological and historic human remains and burial places include a lack of direct legislation for these contexts and ambiguous definitions in other potentially related legislation. In fact, existing legislation neglects to mention historic and archaeological human remains and burial sites discovered within the state specifically (see Appendix A-1).

Procedures Employed in Pennsylvania Case Studies. The Pennsylvania case studies reference a variety of laws and interested parties (Tables 18–20). Five of the case studies reported possible human remains or burials, while three of the cases did not, but in most cases, the developers anticipated and planned in advance for such finds. Each of the case studies represents a cemetery, whether known or abandoned. However, headstones were only observed in three cases. Commonly in the past, headstones were relocated, while the burials themselves often remained in their original locations. It is unclear whether this was known by church or cemetery authorities at the time. The absence of headstones misleadingly suggests the absence of human remains, but as many of these cases demonstrate, human remains are often still present and can be encountered during development.

Cemeteries are a grey area in the literature. Typically, they are not considered to be archaeological resources under 37 Pa.C.S. or under NHPA unless they are eligible under specific criteria. In archaeological contexts, it must be demonstrated that the cemetery or its contents can provide

information not available by other means. For instance, under NHPA, a cemetery may be eligible for National Register status if “a cemetery derives its primary importance from graves of persons of transcendent importance,” and a cemetery would have documentation to prove that such a person was interred there (Potter & Boland, 1992).

In most other cases, the SHPO is not involved with cemeteries. At most it can provide guidance and recommendations, but SHPO cannot enforce any actions. Because they are often abandoned or inactive contexts, legislation related to active or maintained cemeteries is not applicable. Therefore, there is no clear guidance. In fact, in several cases, such as the First Baptist Church of Philadelphia and the Schuylkill County case, public outcry and denouncements from archaeological groups presented the only substantial pressure to treat such remains in a respectable and transparent manner (see Table 20). This perspective on cultural resources is significantly different than those enforced when natural resources, such as wetlands, are impacted by development (Susanne Haney, PennDOT, personal communication, 2020).

Several agencies conducted background research to determine the extent of the cemetery, location of burials, and number of burials. In some cases, contingency plans were established with the intent to minimize disturbances to these areas. These plans generally followed federal procedures. Agencies were more likely to follow federal guidelines, even when projects were not on federal grounds or using federal funds, to avoid the confusion and indeterminate guidelines in state legislation. Archaeological firms, coroners or medical examiners, and forensic anthropologists were the most common parties invoked to handle these cases.

Various legislation was considered during mitigation efforts (see Table 18). While PHMC should have more oversight because of its association with the state's historic resources, less than half of the cases used PHMC via 37 Pa.C.S. in any meaningful way. On the other hand, 18 Pa.C.S. § 5509 was frequently adhered to because it is a misdemeanor to knowingly desecrate a historic burial lot or burial place, and this law may be extended to even abandoned and forgotten cemeteries. The County Code was also commonly adhered to, and the coroner was frequently called to the scene to assess possible human remains or burial sites or take jurisdiction of unclaimed human remains. Because these cases predate the 2018 amendment to the County Code regarding eminent domain, no examples are available to illustrate how the courts handle inactive cemeteries.

Although not mandated by Pennsylvania law, some of the contractors and monitors met the professional qualifications specified by the Secretary of the Interior's Standards and Guidelines (36 CFR § 61). To ensure that all archaeological contractors and monitors work to the standards expected in their field, Pennsylvania should adopt language similar to Section 106, wherein such professionals are valued for the expertise they bring to the table. These standards should extend to osseous proficiency, as indicated by completion of a graduate degree in archaeology or a closely related field with evidence of professional experience handling skeletal remains. This may have helped in cases such as Blair County, where an astragalus bone was recovered, or in cases where bones are fragmented and difficult to identify. It may be time- and cost-effective to employ qualified professionals to monitor sites when human remains or burials are expected. Additionally, this requirement can help if archaeological results or practices are contested by interested parties (Holtzman 2019; Michon 2020).

Additionally, five pieces of legislation that mention burials, disinterments, or historic resources were never relevant to the case studies (see Table 17). These laws were either too specific, with criteria that never called the law in effect, or the law could be circumvented, such as 28 Pa. Code § 1.25, with permit requests routed through the local registrar.

In addition to the legislation, several case studies considered public input when determining appropriate mitigation actions (see Tables 19 and 20). In at least one of these cases, the public protest to ongoing proceedings actually facilitated a more respectful and better organized handling of the case. This observation is especially important as it demonstrates a potentially significant resource that was critical for facilitating these cases and identifying potential descendants in both urban and rural areas.

In many cases, law enforcement or coroners were immediately notified by the developer or archaeological consultant (see Table 20). In all PennDOT cases, PHMC/SHPO was notified, but in the private development cases, PHMC was only notified twice. However, PHMC was only able to provide guidance and recommendations. Although these cases were all resolved without significant input from PHMC, they were difficult to track down because there is no single agency that requires compulsory reporting or maintains comprehensive records on archaeological and historic burial sites. In most other states, the state archaeologist provides this service. Skeletal analysis was permitted in several cases to determine the biological profiles and medicolegal significance of the remains.

Various agencies took responsibility or were prepared to take responsibility of skeletal remains (see Table 20). Most commonly, the county coroner or medical examiner took, or was prepared to take, jurisdiction. However, it was also common for the private developer to maintain jurisdiction of remains

found on their property. The three remaining cases were under the authority of the state agency in charge of the project (PennDOT), a local funeral director, or the local courts. This differs significantly from states with established legislation for archaeological and historic human remains and burials, where the state archaeologist or their equivalent typically has jurisdiction over these types of sites (see Table 17). In all cases, the state agency (PennDOT) or private developer was financially responsible for the remains, which is largely consistent with other states.

In summary, the case studies illustrate the variety of ways in which potential human remains and burial cases are presently handled in Pennsylvania. As depicted in Tables 18 and 19, few laws are consistently engaged, and authorities and interested parties vary across situations. These findings emphasize the need to streamline and formalize procedures to be followed in Pennsylvania when archaeological and historic human remains and burial cases are discovered.

Table 18. Summary of legislation utilized in each Pennsylvania case study.^a

Legislation	Blair Co., (PennDOT)	Somerset Co., (PennDOT)	Schuylkill Co., (PennDOT)	Philadelphia Co., (Kise Straw & Kolodner)	Philadelphia Co., (AECOM)	Allegheny Co., (CDC)	Allegheny Co., (CDC)	Dauphin Co., (Skelly and Loy)
16 U.S.C. § 470 (Section 106 compliance)	X	X	X					
36 CFR § 61	X	X			X			
Supplementary Act, Burial Grounds Act, 1887 (P.L. 96, No. 47)	X				X			
Cemeteries and Graveyards Protect Act, 1894 (P.L. 397 No. 296)								
Burial Grounds Conveyance Act, 1913 (P.L. 551, No. 354)		X					X	X
Burial Grounds, Municipal Control Act, 1923 (P.L. 198, No. 144)	X							
The County Code Act, 1955 (P.L. 323, No. 130) and subsequent amendments		X	X	X	X	X		
Supplementing County Water Supply Authority Act, 1957 (P.L. 1006, No. 446)								
Historic Burial Places Preservation Act, 1994 (P.L. 141 No. 22)	X						X	X
8 Pa.C.S.								
9 Pa.C.S.								
18 Pa.C.S. § 5509	X	X	X	X	X	X	X	X
26 Pa.C.S.	X							
37 Pa.C.S. § 507				X	X			X
25 Pa. Code	X	X	X					
28 Pa. Code § 1.25								

^aGreen shade indicates legislation was considered during this project; yellow shade indicates legislation was not followed

^bSite projects in bold indicate the presence of human remains and/or intact burial features

Table 19. Summary of agencies and professionals involved with each Pennsylvania case study.^a								
	Blair Co., (PennDOT)	Somerset Co., (PennDOT)	Schuylkill Co., (PennDOT)	Philadelphia Co., (Kise Straw and Kolodner)	Philadelphia Co., (AECOM)	Allegheny Co., (CDC)	Allegheny Co., (CDC)	Dauphin Co., (Skelly and Loy)
FHWA	X		X					
DEP	X	X	X					
PennDOT	X	X	X					
Private Developer				X	X	X	X	X
PHMC	X	X	X		X			X
Archaeological Consultants	X	X	X	X	X	X	X	X
County Coroner or Medical Examiner	X		X	X	X	X		X
Forensic Anthropologist	X	X	X	X	X	X		
Local Funeral Director	X	X						
Official Cemetery or Church Association		X						
Department of Vital Statistics	X							
Local Courts	X	X		X	X			
Other Government Agencies	X	X			X			
Other Consultants	X	X						X
Public		X	X		X			X

^aGreen shade indicates legislation was considered during this project; yellow highlight indicates jurisdiction of remains.

^bSite projects in bold indicate the presence of human remains and/or intact burial features

Table 20. Summary of procedures in Pennsylvania cases.

Considerations	Blair Co., road widening (PennDOT)	Somerset Co., road widening (PennDOT)	Schuylkill Co., road widening (PennDOT)	Philadelphia Co., Blockley Almshouse (Kise Straw and Kolodner)	Philadelphia Co., First Baptist Church (AECOM)	Allegheny Co., National Aviary (CDC)	Allegheny Co., Duncan Heights (CDC)	Dauphin Co., Hamaker Cemetery (Skelly and Loy)
Demographics	Rural	Rural	Rural	Urban	Urban	Urban	Urban	Urban
Property Type	Federal and State	State	State & Private	Private	Private	Private	Private	Private
Type of Human Remains and cemetery features	Cemetery: burial shafts and physical grave markers	None	Cemetery: human remains and burial shafts	Cemetery: human remains and burial shafts	Cemetery: human remains and burial shafts	None	None	Cemetery: burial shafts and physical grave markers
Who was Initially Notified about Potential Human Remains?	Coroner, funeral director, forensic anthropologist	Public notified PennDOT, who notified church and cemetery association, forensic anthropologist	Coroner, forensic anthropologist, SHPO	Law enforcement, medical examiner, forensic anthropologist	Law enforcement, medical examiner	Forensic anthropologist, medical examiner, and law enforcement	No one	Coroner, PHMC
When were Authorities Notified?	Prior to onset of project	Prior to onset of project	Not indicated	Immediately	Not indicated	Immediately	N/A	Immediately
Who Notified the PHMC/SHPO?	PennDOT	PennDOT	PennDOT	No one	Unclear	No one	No one	Archaeological consultants
Role of PHMC/SHPO	Guidance and recommendations	Guidance and recommendations for burial/cemetery portion	None	None	Guidance and recommendations	None	None	Guidance and recommendations
Who had jurisdiction of the site?	PennDOT	N/A	Coroner	Medical Examiner	Philadelphia County Court of Common Pleas	Medical Examiner	N/A	Landowners
Who did the PHMC/SHPO Notify?	N/A PennDOT notified all relevant parties (see Table 2)	N/A PennDOT notified all relevant parties (see Table 4)	N/A PennDOT notified all relevant parties (see Table 6)	N/A Law enforcement notified relevant parties (see Table 8)	N/A	N/A Archaeological monitor notified all relevant parties (see Table 12)	N/A	N/A Archaeological consultant notified all relevant parties (see Table 16)

Table 20. Summary of procedures in Pennsylvania cases.

Considerations	Blair Co., road widening (PennDOT)	Somerset Co., road widening (PennDOT)	Schuylkill Co., road widening (PennDOT)	Philadelphia Co., Blockley Almshouse (Kise Straw and Kolodner)	Philadelphia Co., First Baptist Church (AECOM)	Allegheny Co., National Aviary (CDC)	Allegheny Co., Duncan Heights (CDC)	Dauphin Co., Hamaker Cemetery (Skelly and Loy)
Archaeological Skeletal Analysis Allowance	N/A	N/A	Yes	Yes	Yes	N/A	N/A	No
Who was financially responsible?	PennDOT	PennDOT	PennDOT	Developer	Developer	Developer	Developer	Developer
Other Comments	None	Public informed PennDOT of burials	Public guided project to optimal solution	None	Public demanded more responsible practices	None	None	Public requests used to find descendent groups; overall efforts earned a Preservation Pennsylvania Award in 2003.

Concerns with Existing Pennsylvania Legislation. While much of 9 Pa.C.S. is concerned with cemetery companies and regulations, the tenets of § 702 indicate the state’s interest in protecting the rights of burial plot owners, which can be construed to include any burial plot, including archaeological and historic contexts. However, this is never explicitly stated, nor does it resonate with other aspects of the law.

37 Pa.C.S. is modeled after federal legislation, but it fails to clarify concerns regarding responsible authorities, and it does not discuss human skeletal remains and burial contexts. Furthermore, present-day legislation, such as Act 70, actively works to preclude the insight of archaeological professionals by failing to allot PHMC an annual budget, increasing limits to archaeological work, and failing to provide penalties for wrongdoing.

No specific set of legislation exists for human remains and burials from historic and archaeological contexts. The closest legislation specifies the courts’ authority over inactive cemeteries (no burials within the past 50 years) in the 2018 amendment to the County Code Act, but this only applies to eminent domain cases. However, as discussed previously, this legislation grants authority to the courts, who are not experts in historic and archaeological materials. Unfortunately, PHMC has no role in this process. No agency is charged with maintaining records of these cases. Therefore, this legislation is neither respectful nor appropriate for historic and archaeological human remains. Additionally, the County Code Act establishes the coroner’s authority over “bodies,” which are not defined. It is unclear whether this extends to skeletonized remains and/or disinterments, especially when such cases do not require medicolegal attention.

The 1993 HB 1771 was never passed, though the basic principles may help mitigate these types of concerns because it emphasizes the protection of human burial sites and respectful treatment of human remains. In fact, the 1993 HB 1771 advocates for legislation that is more consistent with federal mandates and requirements for other states. For example, a treatment plan is required upon which interested or affiliated parties must agree, and this plan provides expectations and procedures for handling human remains and burials in situations where remains are anticipated. In cases where remains are inadvertently discovered, law enforcement and PHMC must be notified within 48 hours and work must cease until an acceptable plan is established. Fines are established for failure to comply with these rules. Furthermore, PHMC must prepare an annual report documenting all human remains and burial cases discovered during the year.

Guidance from Other States. Pennsylvania might benefit from legislation such as the proposed 1993 HB 1771, or those adopted by other states. Different priorities and approaches are outlined by each state in their adopted legislation, some of which are more effective than others (see Table 20). Nebraska, Massachusetts, and Florida have relatively clear and detailed legislation that considers many aspects related to processing burial sites and human remains. West Virginia and Virginia, on the other hand, have more muddled legislation that only highlight certain aspects of human remains and burial cases, but do not provide clear direction.

In all states except one, law enforcement must be notified as soon as possible once possible human remains are discovered. In the remaining state (Virginia), it is highly recommended, but not required. Nebraska and West Virginia allow a 48-hour window of notification, while Virginia, Massachusetts, and

Florida state that notification must be immediately. Failure to notify the proper authorities constitutes a felony in all states.

The state archaeologist typically is notified for old cases (at least 75 years old in Florida or 100 years old in Massachusetts) or if the remains are associated with an archaeological excavation. In Virginia and West Virginia, the developer must notify the state archaeologist, while in all other states, law enforcement makes this notification. However, the role and title of the state archaeologist varies in each state. In most states, the state archaeologist is charged with establishing the cultural identity of the remains, notifying descendant groups and other interested parties, and ensuring the plans of action are agreeable to all parties (Nebraska, West Virginia, and Florida). However, in Virginia, the state archaeologist issues relocation and reinterment permits, and in Massachusetts, the state archaeologist can only assess the remains. Skeletal analysis is permitted to facilitate these tasks in Nebraska, Massachusetts, and Florida; analysis must be allowed in the permit for West Virginia; and Virginia does not clarify anything about skeletal analysis. Pennsylvania does not have a state archaeologist, but it has a state historic preservation officer, who is also the director of the SHPO office.

The state archaeologist must notify descendent groups and/or other interested parties in all states except Virginia, where no information is provided. In general, the state archaeologist maintains authority over the remains regardless of the type of burial, such as Nebraska. Other states, such as Massachusetts and Florida, differentiate between isolated burials and cemeteries. The state archaeologist has jurisdiction in both types of situations in Massachusetts, but in Florida, the state archaeologist has jurisdiction of unmarked burials, not cemeteries. Authority and jurisdiction are not outlined in Virginia or West Virginia laws. As for disinterment, relocation, and reinterment of remains, in many cases, the developer

or permit applicant is financially responsible (Virginia, West Virginia, Massachusetts, and cemetery cases in Florida); in other situations, the county (Nebraska) or state (unmarked burials in Florida) is responsible.

However, despite this variability, states with effective legislation clarify who must be notified upon discovery of human remains, the time in which authorities must be notified, the sequence of notifications and appropriate procedures, the role of the state archaeologist, the authority that takes jurisdiction over the site, allowances for archaeological skeletal analyses, financial responsibilities, and penalties for failure to adhere to these rules, among other considerations.

It is critical that any legislation adopted in Pennsylvania consider the entire sequence of events and ensure that clear procedures are outlined. Although Virginia and West Virginia have established legislation that indicates the states' roles in historic and archaeological human burials, the legislation primarily deals with the permitting process. Virginia laws do not mandate that law enforcement be notified within a set amount of time. The law does not mandate that law enforcement notify VDHR for historic cases or that cases be documented in any standardized or formal manner. Archaeologists with VDHR believe this oversight has significantly impacted documentation and reporting of human remains and burial sites.

West Virginia legislation provides provisions for property owners to report archaeological and historic burials through property tax exemptions. Such incentives would dovetail with local Pennsylvania planning, such as that described by Preservation Pittsburgh (2018).

State-level legislation has helped several states deal with the inadvertent discovery of historic human remains and burial sites. Although the impacts of such legislation, as described above, is variable, any consideration of these concerns is better than none. For example, although West Virginia and Virginia have legislation that is less clear than Nebraska and Massachusetts, both of these states have at least begun to tackle the issue. Other states, such as Ohio and South Carolina, have no formalized or codified standards for dealing with historic burial sites (Floyd 2020; Rinehart 2016). This lack of legislation has led to many such sites being ignored or improperly handled in the state. As such, many sites only receive respectful or appropriate considerations when they receive news coverage or other forms of community outreach. This type of media coverage reflects poorly on states who could be proactive and assert effective legislation that ameliorates the concerns of both communities and developers regarding these sensitive sites.

Conclusion

The goal of this research was to identify challenges associated with the inadvertent discovery of human remains in both legislation and existing practices to provide suggestions to assist Pennsylvania law makers in their duty to protect human remains and burials from destruction and desecration. Historic and archaeological burial sites and human remains are found all across Pennsylvania in the form of abandoned or forgotten cemeteries or isolated, unmarked burials on the landscape. They present unique challenges for development and earth-moving activities.

Existing statewide legislation suggests at best a disregard for historic and archaeological human remains and burial sites discovered within the state. Singularly, none of these rules or laws can address the challenges and needs associated with historic and archaeological burial sites. Unlike recent and medicolegal cases of human remains, no clear guidelines exist for their jurisdiction or appropriate procedures. In fact, no state-level legislation adequately addresses these types of sites when encountered on state-owned land, state-funded or state-assisted projects, or private property. In these situations, there is little agreement about who has jurisdiction of these sites, who can determine the ultimate fate of the remains, what sorts of actions are recommended, and who is financially responsible to ensure that the remains are handled in an appropriate manner. This lapse must be addressed to ensure that state and private organizations are handling these types of sensitive cases in a consistent and respectful way.

Forgotten cemeteries and historic or archaeological human remains will continue to be found and disturbed during construction projects in Pennsylvania, as they are throughout the United States. The necessity of formal state laws is illustrated by the First Baptist Church of Philadelphia Cemetery project, wherein more than 300 sets of human remains were inadvertently discovered. The absence of clear

legislation led to months of confusion, delay, and public outcry before the Philadelphia's Orphans Court took jurisdiction of the site. Without pressure and public assistance to promote these types of cases in Pennsylvania, many interments may be inadequately preserved or destroyed.

State legislation referencing human remains, burial grounds, disinterment, earth moving activities, and/or historic resources was reviewed to determine authority and responsibilities of various entities involved with mitigation efforts. Additionally, individuals from various state agencies and private firms were contacted to describe their experiences with human remains or burial cases to ensure representation of rural, urban, privately owned, state-funded, and federally funded projects. Furthermore, legislation from other states, wherein specific protocols have been developed for such cases, are described to provide guidance and demonstrate viable alternatives.

Despite its jurisdiction over historic cultural resources, PHMC, the statewide steward of historical and archaeological resources, has no jurisdiction or budget to identify, protect, or mitigate potential burial sites on any type of land or project in the state. In certain situations, the Courts of Common Pleas have more authority over these resources than PHMC. Most current state and local legislation that deals with human remains pertains predominantly to medicolegal cases, not archaeological or historical remains. Furthermore, no legislation requires that human remains be reported to law enforcement or another appropriate agency.

This research presented eight case studies from Pennsylvania to demonstrate the inconsistent guidelines and procedures used in situations involving human remains. These procedures demonstrate a variety of ways to navigate the ethical, financial, and administrative challenges associated with these types of

situations. These cases include situations where historic or archaeological human remains or burials were anticipated and where they were inadvertently encountered.

While all agencies expressed a desire to do right in these cases, they lamented the lack of clear procedures and expectations, which is illustrated in the case studies. Therefore, the researchers reviewed relevant legislation from five states to delineate possible alternatives for Pennsylvania to consider, highlighting benefits and disadvantages in each state. States that have the least comprehensive laws also consequently have the least oversight, the most difficulty documenting and assisting in such cases, and are more likely to be targeted by the public for their lack of action.

In nearly all states, legislation requires that work must stop, and law enforcement must be notified when possible human remains are discovered. Otherwise, each state offers a unique approach. For instance, some states allow the SHPO or the state archaeologists to be the primary authority over historic burials, no matter the circumstances or history of the site. Other states designate authority differentially depending on whether the burials represent a cemetery or an isolated find. Some states permit some degree of skeletal analysis to determine cultural associations and identify potential next of kin for consultation. Each state clearly identifies the parties who are financially responsible for mitigation efforts. Although this varies between states, the state itself, the developers, or descendent groups are most often designated financial authorities. Despite the variability, each state's legislation represents procedures designed to treat archaeological and historic human remains with dignity and respect.

The results of the review highlight deficiencies in Pennsylvania's current policies regarding the inadvertent discovery of human remains. However, specific recommendations are provided to improve the situation. These recommendations strive to address the complicated issues that surround historic or archaeological burials found within Pennsylvania, including appropriate jurisdiction, allowance for skeletal analysis, consultation requirements, and financial burden.

Legislation is required specifically for archaeological and historic human remains and burials that allows for respectful treatment of remains and supervision of procedures by professional archaeologists. This legislation must supersede all other legislation that may be applied to these types of cases. These efforts will aid Pennsylvania in establishing comprehensive and respectful laws regarding Pennsylvania's forgotten cemeteries and burial sites.

Policy Recommendations

- **Revise 37 Pa.C.S. or initiate new legislation to clarify procedures concerning archaeological and historical human remains and burials.** It is recommended that this legislation clearly state that it supersedes all other legislation for historic and archaeological human remains and burials. Law enforcement should be contacted within 48 hours when possible human remains or burials are encountered and work must stop. Penalties, as appropriate, should be outlined for failure to report possible human remains. When remains are encountered during archaeological excavation, and/or if the remains are determined to be old (e.g., more than 100 years) and not of medicolegal significance, law enforcement should notify the SHPO at PHMC. Work at a development site cannot recommence until approved by law enforcement and/or the SHPO. The legislation should distinguish between cemeteries and isolated burials in both language and in terms of appropriate actions.

- **Clear definitions of all relevant terms should be provided,** including those listed below. Some of these suggested definitions are used or modified from existing Pennsylvania legislation, while others are adapted from other states if an equivalent was not found in Pennsylvania law (see details of Florida, Massachusetts, Nebraska, Virginia, and West Virginia legislation, above).
 - *Abandoned cemetery:* a burial ground of the human dead for which a) the county assessor can find no record of an owner; b) where the last known owner is deceased and lawful conveyance of the title has not been made; or c) in which the cemetery company, cemetery association, corporation, or other organization that formed for the purposes of burying the human dead: has disbanded, has been administratively dissolved by the

- secretary of state, or has otherwise ceased to exist, and for which title has not been conveyed; or no longer has a valid certificate of authority as determined by the funeral and cemetery board.
- *Burial site*: any natural or prepared physical location below, on, or above the surface of the earth into which, as part of a death rite or ceremony of a culture, human remains have been deposited whether marked or unmarked.
 - *Consultation*: the process of seeking, discussing, and considering the views of other participants, and where feasible, seeking agreement with them regarding matters related to archaeological and historic human remains and burial sites.
 - *Cultural affiliation*: a relationship of a shared identity which can reasonably be traced historically or prehistorically between a present-day cultural group and an identifiable earlier group.
 - *Developer*: all private property owners—individuals or agencies—which include property with small-scale and large-scale projects, private or corporate development.
 - *Human remains*. the body of a deceased person, or part of a body or limb that has been removed from a living person, in any stage of decomposition, including skeletal remains.
 - *Historic burial site*: a tract of land that has been in existence as a burial ground for more than 100 years wherein there have been no burials for at least 50 years and wherein there will be no future burials or listed in or eligible for the National Register of Historic Places as determined by the Pennsylvania Historical and Museum Commission.
 - *Inadvertent discovery*: unanticipated encounter or detection of human remains.

- *Lineal descendant*: any individual who can, by the preponderance of evidence, trace his ancestry directly and without interruption to the individual whose remains and associated funerary objects are being claimed.
- *Professional archaeologist*: an individual with the minimum professional qualifications in archaeology, including a graduate degree in archaeology, anthropology, or a closely related field plus at least 1 year of full-time professional experience or equivalent of specialized training in archaeological research, administration, or management; at least 4 months of supervised field and analytic experience in general North American archaeology; and demonstrated ability to carry research to completion. In addition to these minimum qualifications, a professional in prehistoric archeology shall have at least 1 year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least 1 year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.
- *Osteologist*: a person who possesses a graduate degree in human skeletal biology, human forensic osteology, or other related area of physical anthropology or a closely related field; and who has a minimum of 1 year of laboratory experience in human skeletal analysis and reconstruction.
- *Notification*: the formal and legal written process of informing lineal descendants or culturally associated groups.
- *Unmarked human burial*: any human remains or associated burial artifacts or any location, including any burial mound or earthen or shell monument, where human remains or associated burial artifacts are discovered or believed to exist on the basis of

archaeological or historical evidence, excluding any burial marked or previously marked by a tomb, monument, gravestone, or other structure or thing placed or designed as a memorial of the dead.

- **The SHPO should be identified as the authority and responsible party for historic and archaeological human remains.** It is recommended that the SHPO be provided an appropriate annual budget to fulfil its obligations, including reviewing permit requests, providing surveys, analyzing remains, notifying descendants, and establishing appropriate contingency plans. The SHPO should record all reported sites with archaeological or historic human remains or burials. The SHPO should review state-issued permits for construction and water quality within 30 days. The SHPO should provide written documentation about site significance and allotted days for notification and survey. The SHPO may use published archaeological statistics and modeling, as well as prior historic knowledge, to determine whether survey is recommended. The SHPO should make good faith attempts to identify and notify relevant lineal descendants or culturally affiliated groups for consultation. The SHPO should be able to analyze remains for up to 1 year prior to interment (non-destructive only). Analysis of human remains must be to facilitate identification only. It is not to be used for research unless otherwise permitted by descendant groups, culturally associated groups, or appropriate parties, and in writing. Contingency plans should be established and agreed upon by the agency or developer that discovered the remains, the SHPO, descendant or cultural groups, and any other interested parties. All details regarding the final disposition of the human remains must be agreed upon by all invested parties, not limited to the agency or developer that discovered the remains, the SHPO, and descendant or cultural groups.

- **The developer should shoulder the financial burdens for relocation efforts unless a descendant or cultural group claims responsibility for the remains.** The developer should acquire a permit through the local registrar or state registrar for the disinterment and reinterment of remains, unless a descendant or cultural group claims responsibility for the remains. Remains should be preserved in place or avoided to the maximum extent possible, but relocation is also acceptable. The goal is to help developers continue work and minimize impacts to skeletal remains rather than delaying projects. This model is used by several states, including Massachusetts, Virginia, and West Virginia.
- **Archaeological monitors and osteology professionals should meet the Secretary of the Interior’s criteria (36 CFR § 61) for professional archaeologists.** The SHPO should maintain a searchable list of firms and/or professionals, including osteologists and monument conservationists, who can be contacted to assist with projects. Such a list is already available for archaeologists and geoarchaeologists; inclusion of osteology and monument conservationist professionals would be beneficial. CRM firms and professionals who work in Pennsylvania must be able to submit their qualifications to this list. This list must indicate that Pennsylvania SHPO is not endorsing any particular firm or individual.

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Appendices

Appendix A-1. Pennsylvania legislation involving human remains, burial grounds, disinterment, earthmoving activities, or historic resources.	
Legislation	Brief Explanation of Legislation
FEDERAL	
54 U.S.C. (Section 106)	Criteria for federally funded projects, including background research and consultation
36 CFR § 61	Secretary of the Interiors Standards and Guidelines
25 U.S.C. §§ 3001 et seq (NAGPRA)	Protection and Repatriation of Native American burials
UNCONSOLIDATED STATUTES	
Supplementary Act, Burial Grounds Act, 1887 (P.L. 96, No. 47)	Empowers courts to direct removal of remains in boroughs, cities, and towns from burial grounds where interments have ceased or have become so neglected as to become a public nuisance, or such remains interfere with the improvements, extensions, and interests of such cities, boroughs, or town.
Cemeteries and Graveyards Protect Act, 1894 (P.L. 397, No. 296)	No roads are permitted through cemeteries (except in Philadelphia County); does not apply to road widening projects
Burial Grounds Conveyance Act, 1913 (P.L. 551, No. 354)	Recognizes the authority of church and cemetery associations regarding the disposition of burial sites
Burial Grounds, Municipal Control Act, 1923 (P.L. 198, No. 144)	Describes the responsibilities of the councils of boroughs, township commissioners, and township supervisors of townships regarding neglected burial grounds, incorporated or unincorporated.
Vital Statistics Law of 1953 (P.L. 304, No. 66)	Authorizes the local registrar to issue permits regarding the disposal of dead bodies or fetal remains. Blank pre-signed permits can only be issued to funeral directors.

The County Code Act, 1955 (P.L. 323, No. 130)	Describes the coroner's duties regarding unidentified or unclaimed bodies (Subarticle B)
Supplementing County Water Supply Authority Act, 1957 (P.L. 1006, No. 446)	Describes eminent domain for water supply authorities.
The County Code – Amend Ambulances and Coroners Act, 1990 (P.L. 602, No. 152)	Describes the coroner's investigation regarding a deceased body (Sections 1237, 1240)
Historic Burial Places Preservation Act, 1994 (P.L. 141, No. 22)	Removal of grave markers and memorials must be clearly documented
Vital Statistic Law - Registration Districts and Local Registrars' Duties and Death and Fetal Death Registrations and Reports, 2009 (P.L. 52, No. 11)	Authorizes the Department of Vital Statistics or local registrar to issue permits regarding the disposal of dead bodies or fetal remains.
The County Code – Omnibus Amendments, 2018 (P.L. 931, No. 154)	In Second Class A counties, empowers courts to direct removal of remains from burial grounds where interments have ceased or where remains interfere with improvements (Article XXIV-A) in cases of eminent domain (following the Supplementary Act)
CONSOLIDATED STATUTES	
8 Pa.C.S.	Rights and obligations of boroughs (Borough Code)
9 Pa.C.S.	Regarding cemetery company regulations
18 Pa.C.S. § 5509	It is a first-degree misdemeanor to intentionally desecrate a historic burial lot or historic burial place
26 Pa.C.S.	Regarding condemnation of property for public purposes

37 Pa.C.S. § 507	Regarding archaeological cultural resources and surveys to determine cultural significance except on private property (History Code)
PENNSYLVANIA CODE	
25 Pa. Code § 102	Regarding DEP permitting requirements for earth disturbing activities
28 Pa. Code § 1.25	Describes the approval process to disinter human remains through Vital Records, in the Department of Health

Appendix A-2. Glossary of Terms

Advisory Council for Historic Preservation (ACHP) – A government agency that promotes preservation, enhancement, and sustainable use for the nation’s diverse historic resources, and advises the President and Congress on national historic preservation.

Archaeological interments – Burial places more than 100 years old. Generally, no written records are available regarding burial details or identity of individuals. In America, these interments are typically associated with Native American contexts and pre-date colonialization.

Area of Potential Effect (APE) – Refers to the area that could potentially be impacted by a proposed project.

Astragalus – An ankle bone, comparative to the human talus bone. This bone is found in non-human mammals and forms the lower part of the ankle joint.

Burial feature – Physical evidence of a burial or interment, including tombstones or other grave markers, burial shafts, grave goods, or other factors that indicate the final disposition wherein a decedent was interred in the ground. The feature itself represents a cultural non-portable activity wherein the land was interfered with in the past.

Burial shaft – A type of burial feature, the burial shaft reflects the shape and depth of a burial feature and is often indicated by differences in soil color, texture, inclusions, or cultural content compared to the surrounding ground.

Center for Rural Pennsylvania – A bipartisan, bicameral legislative agency that serves as a resource for rural policy within the Pennsylvania General Assembly.

Christine Davis Consultants (CDC) – A CRM firm the operates in Pennsylvania

City of Philadelphia Office of Licenses and Inspections (OLI) – Enforces Philadelphia city codes for the safe and lawful construction of buildings through inspections, licensing, permitting, and demolitions.

City of Pittsburgh Department of Permits, Licenses, and Inspections (PLI) – Enforces Pittsburgh’s city codes for safe and lawful construction.

Cultural Resource Geographic Information System (CRGIS) – A map-based inventory of the historic and archaeological sites and surveys stored in the files of the Pennsylvania State Historic Preservation Office.

Cultural Resource Management (CRM) – The vocation and practice of managing cultural resources, such as the arts and heritage.

Department of Environmental Protection (DEP) – A government agency that is responsible for protecting and preserving the land, air, water, and public health through enforcement of the state’s environmental laws.

Erosion and Sediment (E&S) – Refers to a set of plans prepared by or under the direction of a licensed professional engineer, indicating the specific measures and sequencing to be used to control sediment and erosion on a development site during and after construction.

Federal Highways Administration (FHWA) – A division of the U.S. Department of Transportation that specializes in highway transportation.

Ground Penetrating Radar (GPR) – A geophysical method that uses radar pulses to image the subsurface.

Historic interments – Burial places more than 100 years old (that post-date colonialization) with no active burials within the past 50 years. Written records may be available to determine identity of decedents or dates of interment, unlike archaeological interments.

Indiana University of Pennsylvania (IUP) – A Pennsylvania State System of Higher Education (PASSHE) university in Western Pennsylvania, Indiana County. The IUP Department of Anthropology has a partnership with PennDOT to utilize students as members of an archaeological survey team.

Medicolegal – Of or relating to both medicine or law

Mercyhurst Forensic Scene Recovery Team (MFSRT) – Refers to the staff of the Mercyhurst Forensic Anthropology Laboratory and their students, who respond to requests for forensic analysis.

National Historic Preservation Act (NHPA) – See Appendix A-1. An Act to establish a program for the preservation of additional historic properties throughout the nation, and for other purposes.

National Parks Service (NPS) – A government agency that manages all national parks, many national monuments, and over conservation and historical properties with various title designations.

National Pollutant Discharge Elimination System (NPDES) – Refers to the permit program address water pollution by regulating point sources that discharge pollutants to waters in the United States.

National Register of Historic Places (NRHP) – The federal government’s official list of districts, sites, buildings, structures, and objects deemed worth of preservation for their historical significance.

Native American Graves Protections and Repatriation Act (NAGPRA) – See Appendix A-1. This Act requires that Federal agencies and museums receiving Federal funds inventory holdings of Native American human remains and funerary objects and provide written summaries of other cultural items. The agencies and museums must consult with Indian Tribes and Native Hawaiian organizations to

attempt to reach agreements on the repatriation or other disposition of these remains and objects. The second major purpose of the statute is to provide greater protection for Native American burial sites and more careful control over the removal of Native American human remains, funerary objects, sacred objects, and items of cultural patrimony on Federal and tribal lands,

Nebraska State Archaeology Office (SAO) – Formerly the Nebraska State Historical Society, the state agency that manages and analyzes archaeological collections revered primarily through History Nebraska fieldwork

Old City District (OCD) – Refers to an area in Philadelphia known as the “Birthplace of American Independence”, a neighborhood best known for its major Colonial-era sites, added to the NRHP on May 5, 1972.

Ossuary – A container or room in which the bones of dead people are placed

Pennsylvania Archaeological Site Survey Forms (PASS Forms) - Used to record archaeological sites in the state of Pennsylvania.

Pennsylvania Department of Transportation (PennDOT) – A state government agency that oversees transportation issues in the Commonwealth of Pennsylvania.

Pennsylvania Department of Transportation Cultural Resource Professional (PennDOT CRP) – Refers to PennDOT employees with expertise in archaeology and historic preservation.

Pennsylvania Highway Archaeological Survey Team (PHAST) – A partnership between IUP and PennDOT that utilized graduate and undergraduate students as field and lab technicians for archaeological reconnaissance work on small projects for PennDOT.

Pennsylvania Historical and Museum Commission (PHMC) – A state agency that is responsible for the collection, conservation, and interpretation of Pennsylvania’s historic heritage.

Plan of Action (POA) – Refers to a detailed plan outlining actions needed to reach the goals on a project.

Post Construction Stormwater Management (PCSM) – Part of the requirements set forth by NPDES permitting and compliance monitoring programs for industrial, municipal, and construction stormwater in Pennsylvania.

Right of Way (ROW) – The legal right, established by usage or grant, to pass along a specific route through grounds or property belonging to another.

Rutgers University-Camden (RU-C) – Refers to the staff and students of Rutgers University in Camden that were part of an archaeological survey team.

State Historic Preservation Office (SHPO) – A state agency, created by the United States Federal Government in 1966 under section 101 of the National Historic Preservation Act, the purposes include surveying and recognizing historic properties, review undertakings for impact on properties as well as supporting federal, state, and local governments and the private sector in their historic preservation goals.

Virginia Depart of Historic Resources (VDHA) – The SHPO for Virginia. Also, a government agency that maintains Virginia’s Landmarks Register.

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