MARYLAND HISTORICAL TRUST

MARYLAND DEPARTMENT OF PLANNING

STANDARDS AND GUIDELINES

FOR ARCHAEOLOGICAL SURVEY
AND EXCAVATION IN MARYLAND

Maryland
DEPARTMENT OF PLANNING
MARYLAND HISTORICAL TRUST

Standards and Guidelines for Archaeological Survey and Excavation in Maryland

Revised 2026

Maryland Historical Trust
Maryland Department of Planning

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Maryland Department of Planning
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Preface

This document represents the third major publication of archaeological standards and guidelines from Maryland's state Office of Archaeology. In the intervening years since Shaffer and Cole (1994) was published, we have seen expansive growth in the field of archaeology, as well as significant changes in practice brought on by both new technologies and larger movements in American culture. To name just a few examples:

1) When the first state archaeological standards were published in 1974, the commercial adoption of no-till farming was just taking off. Today, the technique is so ubiquitous that surface collection is often no longer a viable means of survey and shovel test pit intervals of no greater than 15 meters have become the norm in most states, resulting in an updated standard for Maryland.

2) Geographic Information Systems (GIS) were still in their infancy when Shaffer and Cole was published in 1994. Now digital mapping is standard practice and most CRM firms have put away the compass and tape in favor of high precision GPS or total station data collection. While making maps is nothing new for archaeologists, how we go about doing it has changed.

3) Even a mere decade ago, remote sensing was frequently viewed with skepticism by archaeologists who had "been burned" by a technology that seemed to over-promise results and under-deliver in the field. With advances in both the robustness of the hardware and the data interpolation methods used by remote sensing software, this is no longer the case. More and more we see remote sensing becoming a routine part of archaeological survey. These standards provide guidance on how to collect, report, and archive such data.

With this evolution of the field in mind, it is time, once again, to re-issue guidelines for the practice of archaeology, and especially compliance-driven archaeology, in the State of Maryland. Over 90% of the archaeology that gets done in Maryland is being driven by compliance with cultural resource legislation. While we whole-heartedly encourage the use of these guidelines by all professional archaeologists working in the state, these guidelines are written primarily with the CRM audience in mind.

Nearly 60 years of reviewing CRM reports for legal compliance has taught us a thing or two about what works effectively in the field, how to transfer that knowledge into a final report, and how to avoid pitfalls along the way. Recognizing that field conditions can sometimes thwart the best laid plans, we've attempted to use prescriptive language only where necessary, and leave as many options open for the consulting archaeologist to discuss with MHT and lead agencies when trying to bring a project to completion. When you think we've missed the mark, please feel free to reach out. Always remember, archaeology is a team sport and we are here to help.

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Chief, Office of Archaeology
Maryland Historical Trust

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Commonly Used Acronyms

Area of Potential Effect	APE
Advisory Council on Historic Preservation	ACHP
Assessment of Archaeological Potential	AOP
Cultural Resource Management	CRM
Cultural Resource Management Plan	CRMP
Code of Federal Regulations	CFR
Determination of Eligibility	DOE
Federal Communications Commission	FCC
Federal Emergency Management Agency	FEMA
Geographic Information Systems	GIS
Global Positioning System	GPS
Ground Penetrating Radar	GPR
Historic American Buildings Survey	HABS
Historic American Engineering Record	HAER
Historic Preservation Fund	HPF
Historic Preservation Plan	HPP
Jefferson Patterson Park and Museum	JPPM
Maryland Advisory Committee on Archaeology	MACA

Maryland Archaeological Conservation Laboratory	MAC Lab
Maryland Commission on Indian Affairs	MCIA
Maryland Department of Transportation	MDOT
Maryland Hertiage Areas Authority	MHAA
Maryland Historical Trust	MHT
Maryland Inventory of Historic Properties	MIHP
Maryland Maritime Archaeology Program	MMAP
National Historic Preservation Act of 1966	NHPA
National Register of Historic Places	NRHP
National Park Service	NPS
National Register	NR
Native American Graves Protection and Repatriation Act	NAGPRA
Occupational Safety and Health Administration	OSHA
Principal Investigator	PI
Shovel Test Pit	STP
Society for American Archaeology	SAA
Society for Historical Archaeology	SHA
State Highway Administration	SHA
State Historic Preservation Office	SHPO
Tribal Historic Preservation Office	THPO
United States Geological Survey	USGS

I *Introduction*

Authority

The Maryland Historical Trust (MHT), Maryland's State Historic Preservation Office (SHPO), issues these standards and guidelines under the authority of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470a(b)(3)(D),(E),(F), and (G)), and the Maryland Historical Trust Act of 1985, as amended (State Finance and Procurement Article §§ 5A-325 and 5A-326 of the Annotated Code of Maryland). To ensure consistency for projects with both federal and State involvement, MHT follows the process set forth in 36 C.F.R. Part 800 when reviewing State-assisted actions.

Scope and Purpose

This document represents a revision of MHT's *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). Like its predecessor, this document recognizes that flexibility and diverse approaches are needed in a dynamic field science like archaeology. However, it must also be acknowledged that archaeology is a destructive process and that archaeological sites are non-renewable resources. There will not be a second chance to get it right. Therefore, this document sets a baseline or minimum standard for professional excavation work that will ensure both good field practice and adequate site documentation. This is not a recommendation, but a necessity, particularly when research is funded by public monies or tied to compliance with historic preservation laws. As in 1994, the principal purpose of this document is to ensure the development of archaeological information which is useful for interpretation and of a consistently high quality.

While this document has been put together with an eye towards compliance (or CRM) archaeology, it will also be useful to academic researchers, county and city planners, and others whose work is not tied directly to compliance with state or federal historic preservation laws. While not designed as an exhaustive textbook of archaeological method and practice, this document does describe in basic terms the process of archaeological fieldwork and reporting, and relates how such work should be carried out in a way that is compliant with Maryland law, follows modern best practices, and causes minimal harm to cultural resources while achieving maximal results. Explanations of archaeological technique and procedure are, however, simplified from the kind of treatment one can only get from years of college-level education or experience under the tutelage of professional archaeologists.

Compliance archaeologists will find this document most useful and they are the primary audience for these standards and guidelines. Compliance archaeology can involve more than just the professional archaeologist, though. Such work may not only involve professionals working in the field of Cultural Resource Management, but also other governmental personnel and those working as proxies for them (environmental consultants, developers requiring state or federal permits, grant recipients, grantors of preservation easements, etc.). This document serves as a primer for how compliance archaeology should be conducted in the State of Maryland.

Compliance Archaeology: One of the primary goals of this document is to facilitate the review of projects requiring compliance with federal and state historic preservation laws and regulations. Specific types of information are required by the governmental agencies responsible for identifying and treating historic properties, as well as by those who are obliged to review activities affecting historic properties. The following chapters go beyond the ***Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*** (Dickenson 1983) to specify the documentation that MHT, as the SHPO, requires from other governmental units and their agents to provide formal substantiated comments. While the present volume discusses standards and guidelines for archaeological work, preservation professionals should contact MHT staff to obtain the corresponding guidance for historic architecture in order to assist and enhance multidisciplinary projects in which a number of different cultural resources may face impacts.

MHT's Office of Preservation Services reviews projects for effects on historic properties under the federal and state laws noted above. As defined by the NHPA, historic properties include districts, buildings, archaeological sites, structures, and objects that are eligible for listing in the National Register. The most common reviews are conducted pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, or State Finance and Procurement Article §§ 5A-325 and 5A-326 of the Annotated Code of Maryland. These laws and their implementing regulations and policies require agencies to consider the effects of their undertakings on properties included in or eligible for the National Register of Historic Places (NRHP). It is important to emphasize that the governmental agencies which initiate the undertakings are responsible for compliance with the historic preservation laws. The SHPO's role is a consultative one, geared towards the provision of information, advice, and recommendations on how to eliminate or minimize adverse effects on historic properties.

Agency officials should begin their consultation with the SHPO as early in the project planning process as possible (see FIGURE 1) in order to provide adequate time to address historic preservation concerns and to prevent avoidable delays.

Early in the project planning stage, alternative project locations, configurations, and methods may still be available, programmatic discussions can still be developed, and options that may minimize impacts to historic resources are more numerous. Delaying consultation is typically more costly in terms of both time and resources. Coordination should commence with the agency official submitting a written request to the SHPO for assistance in the identification of historic properties. The MHT e106 Online Project Submittal System is available on the MHT website and allows users to provide their requests for state and federal project reviews by completing an online form and uploading the necessary attachments. At a minimum, the attachments should include: 1) a detailed description of the proposed project, noting the nature of the state and/or federal agency involvement; 2) a map (a section of a USGS topographic quadrangle, a Google map, or aerial photo) clearly showing the location and boundaries of the project area and more detailed site plans, if appropriate; 3) labeled photographs (digital or scanned) of the project site including images of buildings and structures located within the project area; 4) drawings and/or a written scope of work illustrating any plans to construct, demolish, or rehabilitate buildings or other structures along with the horizontal extent and depth of ground disturbance; and 5) any additional information that may be relevant such as a description of past land use on the subject property, local government approvals, etc. **The state's online cultural resource information system, known as Medusa, is an invaluable tool for accessing Maryland**

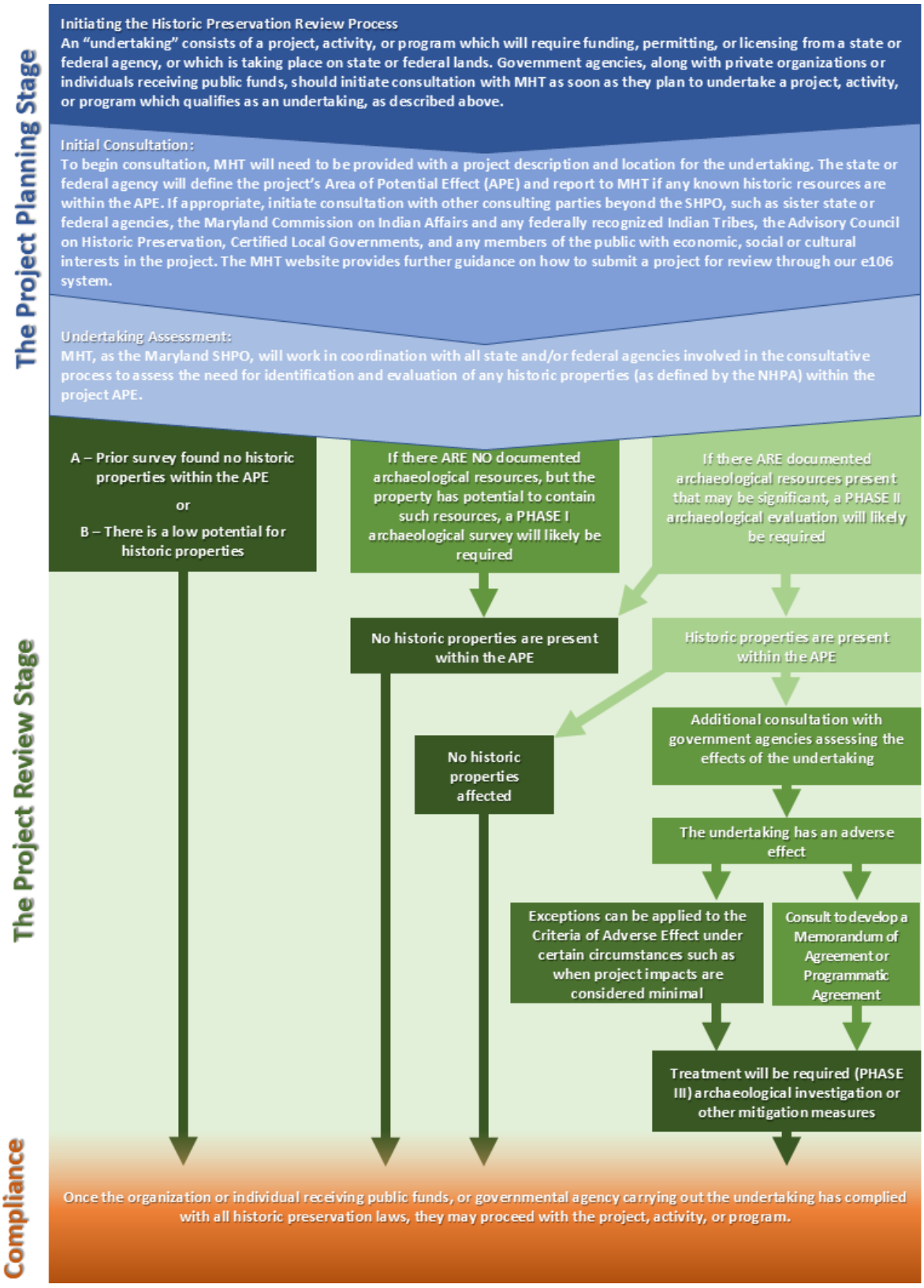


FIGURE 1 *- Flow chart of the steps in complying with federal (Section 106 of the National Historic Preservation Act of 1966) or state (State Finance and Procurement Article §§ 5A- 325 and 5A-326 of the Annotated Code of Maryland) historic preservation laws for archaeology. Consultation with the State Historic Preservation Office and other stakeholders should occur throughout the process.*

Inventory & NR records, and conducting the necessary background research to prepare a responsive request. See pages 5-6 for more information about Medusa.

Upon receipt of this information from the relevant governmental agency or consultant, SHPO staff archaeologists and architectural historians review the Maryland Inventory of Historic Properties (MIHP or Maryland Inventory) for recorded archaeological sites and standing structures, as well as other available documents to determine if known historic properties exist in the project's Area of Potential Effects (APE). Staff will also examine survey records, historic maps, historic and precontact settlement models, and descriptions of present and past land use to assess the potential of the project area to contain historic properties that may not yet have been identified. Based on this review, SHPO staff will inform the inquiring agency of its recommendations of the need for further survey or other historic preservation activities. Since the SHPO reviews over 6,000 projects annually on a first come, first served basis, a response may take up to 30 days from the receipt of complete documentation from the requesting agency. **A log of the current status of compliance review projects is available on the MHT web page.**

Recommendations from MHT may include: 1) advising that no further studies are warranted (when, for example, prior surveys or documented past disturbance indicate that no significant archaeological resources would be present); 2) calling for additional investigations to locate or evaluate the significance of properties (when archaeological resources are known to or may exist within the APE); or 3) requesting the development of treatment plans for identified historic properties (when projects may adversely affect archaeological resources). Figure 1 illustrates the review steps in a flow chart. The Advisory Council on Historic Preservation (ACHP) provides additional information on the Section 106 review process in their various training courses and publications. More information can be obtained through the ***ACHP website***.

Other historic preservation activities will necessitate consultation with MHT. These activities may involve federal agencies locating, inventorying, and nominating to the National Register of Historic Places properties under the agencies' ownership or control (16 U.S.C. 470h-2); Maryland state agencies locating, documenting, and nominating properties under those agencies' ownership or control that may be eligible for the NRHP; recipients of financial assistance through MHT or MHAA grant or loan programs; or individuals and organizations which hold properties that are under one of MHT's Historic Preservation Easements. MHT's requests for adherence to specific standards and guidelines stem, in part, from statutory responsibilities to comply with National Park Service requirements.

Archaeology Beyond Compliance and Cautionary Tales

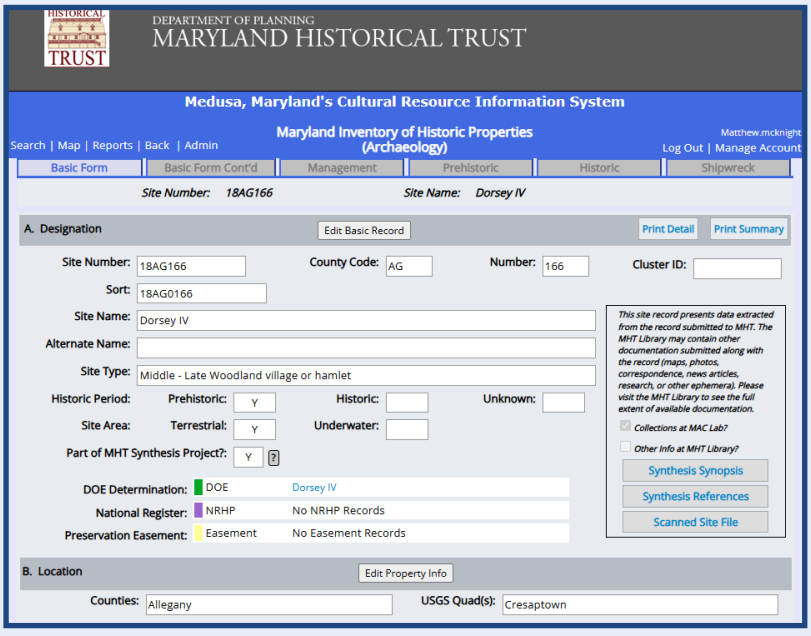
Those researchers conducting archaeological investigations in Maryland for academic and similar purposes will find much of use and interest in these standards and guidelines, such as discussion of permitting procedures, the elements of a thorough report, and remote sensing guidance. Archaeologists conducting surveys and discovering previously unidentified cultural resources also will learn how to record archaeological properties for the Maryland Inventory of Historic Properties.

It is not the intention of MHT to use these standards and guidelines to direct or oversee the research of academic archaeologists and other professional scholars. MHT believes,

however, that Maryland's entire archaeological community would benefit from consistent recording of archaeological finds in conformance with the basic procedures outlined herein and from reporting results with reference to the historic contexts established in Maryland's comprehensive Historic Preservation Plans (available on the MHT web page, and in the MHT Library). **MHT strongly recommends that all archaeological work in the state take place according to professional standards and under the direct supervision of individuals who meet the *Secretary of the Interior 's Professional Qualifications Standards*.** Non-professional assistance including student, volunteer, and/or avocational archaeologist support may be appropriate on archaeological projects, but should be supervised by someone meeting the Standards. Organizations which fund/oversee the work of archaeologists, as well as local governments which plan to develop their own historic preservation laws, are encouraged to follow these recommendations and consult

Medusa: Maryland's Online Cultural Resource Information System

Medusa is the MHT's online database of architectural and archaeological cultural resources. The name Medusa is not an acronym, but merely a code name used for many years by MHT staff for Maryland's in-house database of properties listed as part of the **Maryland Inventory of Historic Properties (Maryland Inventory)**. The branching structure of the database, which included (1) Maryland Inventory architectural files; (2) Maryland Inventory archaeological site records; (3) National Register properties in Maryland; (4) determination of eligibility (DOE) records; and (5) properties in the Maryland Historic Preservation Easement program, apparently reminded folks of the mythological gorgon's serpentine hair. And the name just stuck! Subsequent additions, such as the Archaeological Synthesis Project and Maryland Heritage Area boundaries, only made the Medusa analogy more appropriate.

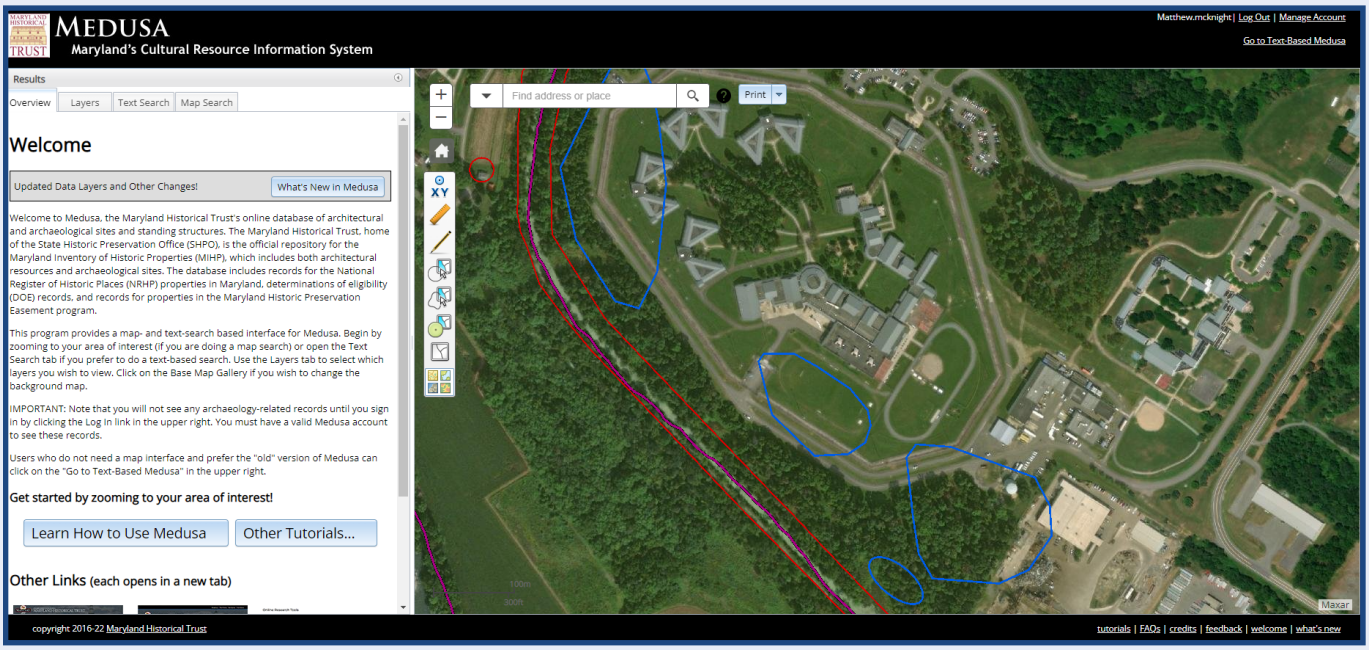


A typical MIHP Archaeology form displayed in Medusa

Access to paper records at the MHT Library in Crownsville has always been free and open to the public by appointment (access to archaeological data is restricted to qualified individuals). With Medusa's launch online in 2014, users can now access the bulk of Maryland Inventory data both at our library and off-site. As of this writing, the database consists of over 45,000 standing structure or architectural resources and over 14,000 archaeological sites. Medusa can be searched in a variety of ways, both map- and text-based. Standing structures data is displayed with red polygons and on red site forms while archaeological data is displayed with blue polygons and blue forms. In the case of archaeology sites, links are provided for all

other guidance documents and ethical practices promulgated by the Society for American Archaeology, the Society for Historical Archaeology, the ACHP, and other professional archaeology and preservation organizations. In addition to acquiring a familiarity with these present standards and guidelines, archaeological researchers should establish and maintain contacts with MHT staff for assistance in locating unpublished studies and records (gray literature) on cultural properties and to ensure that appropriate laws, regulations, and guidelines are followed. Over the years, MHT staff have observed several recurrent challenges faced by archaeological projects in the state. Three of the more common problems are highlighted here as cautionary tales for both compliance and "pure research" project managers to keep in mind.

Archaeologists and property owners should review conservation and curation needs at



Results of a geographic search using map-based Medusa

site sub-forms (prehistoric, historic, and shipwreck) for sites where the paper records have been scanned, and for sites which are also included in the Archaeological Synthesis Database.

Web access to architectural data is open to the public. Access to archaeological site locations and detailed site information is restricted and password protected and will only be granted to qualified individuals (generally those who meet the Secretary of the Interior's Professional Standards for Archeology). To access Maryland's online cultural resource information system, use a web browser to visit ***Medusa***. Click on the "Login" and "Register for an Account" links to submit your qualifications and to receive an account to access archaeological data. Detailed tutorials with additional operational information are available from the main page as well.

the research design phase and ensure that adequate funding and other resources are available to support the long-term care of collections stemming from the archaeological process. Curation and conservation must be considered at the project planning phase, not after field work is completed and the lab work has begun. Failing to include the costs associated with preparing a collection for curation, storage or box fees (if applicable), or conservation treatments in project plans may lead to delays, budgetary shortfalls, and orphaned collections. The earlier curation and conservation are considered when writing a scope of work and creating a project budget, the easier it will be to prepare a collection for permanent curation and the less likely it will be that the project will encounter budgetary issues.

Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards (Morehouse et al. 2022) provides guidance for preparing artifact collections and their associated records, both paper and digital, for permanent curation at the Maryland Archaeological Conservation Laboratory (MAC Lab). Even if a particular research collection is not destined for the MAC Lab, this document still provides valuable "best practice" guidance that can be used by local curation facilities. It also provides guidance for when to contact a conservator and how to budget for conservation. These collections and conservation standards should not just be required reading for lab managers or those processing the artifacts. Everyone from senior archaeologists and projects managers to field supervisors and field technicians should know the standards. Collections and records are created in the field, and lab managers may not be able to meet standards if the materials are generated without such requirements in mind.

There are four factors that, if considered during the planning process, will ensure the collections meet state curation and conservation standards and that a project remains on time and on budget.

- **Ownership**

Determining collection ownership is paramount. Contact property owners early, not just for access to their property for excavation, but to get a commitment to transfer the collection to an appropriate and accredited curation facility. Project planners should consider donation to MHT (at the MAC Lab) if the land is not federally owned. Obtain the required transfer documents, such as deeds of gift or letters of transfer, as soon as possible and coordinate the proposed transfer with the Curator of State Collections. If excavations are on federal land, ensure that the agency owner is aware of the need for curation according to 36CFR79, *Curation of Federally Owned and Administered Archaeological Collections*. Contact the MAC Lab's Curator of Federal Collections if the owner agency wants to use the MAC Lab as its repository.

- **Curation box fees**

Collections generated as a result of laws and regulations, which require archaeological investigations to evaluate, preserve, or mitigate archaeological resources, and are then donated to MHT are subject to a one-time curation box fee. It is important to build this cost into the project budget. There are ways to mitigate the cost of the box fee, such as selective sampling and discard strategies for bulk materials. X-radiography for bulk iron artifacts, such as nails, can inform such strategies and help make the most cost-effective use of a project's curation box fee budget. Contact the Curator of State Collections for assistance in budgeting for curation costs and for the most up-to-date Archaeological Curation Box Fee Policy. Federal collections cannot be deeded to the state and are subject to annual fees. The Curator of Federal Collections is the contact for quotes. The Curation Box

Fee is not charged for "pure research" projects that are not driven by legal compliance.

- **Preparing artifacts and associated records for curation**

Project budgets must include the cost of processing artifacts and their associated records. This includes archival supplies, such as acid-free paper and folders, zip-lock bags, labeling materials, and staff time or resources. Project managers should budget plenty of their staff's time to process materials, including digital records that may need thoughtful culling, file naming, and detailed metadata entry before delivery. Maintain file organization and group records by record types. Be sure to include a contingency provision if more artifacts are recovered than initially anticipated in the scope of work.

- **Artifact conservation**

A conservator affiliated with the American Institute for Conservation (AIC) should be consulted during the project planning phase. A conservator on contract while in the field can provide quick response to a request for stabilization and removal of artifacts, reduce the loss of information through rapid deterioration, and reduce the cost of stabilization and treatment of artifacts. The project or lab manager should work with a conservator to determine priorities for conservation treatment and provide the most cost-effective methods. The assessment should include consideration of artifact significance, material condition, potential benefit from conservation efforts, and budgetary restrictions. When budgeting for artifact conservation, it is important to consider the type of site and the anticipated assemblage it could generate. Precontact sites are far less likely to have artifacts in need of conservation treatment, while historic-period sites many contain large quantities of iron and composite objects that require extensive stabilization. Contact the MAC Lab's Head Conservator for assistance with creating conservation budgets for archaeological projects.

Even the best-planned projects can still encounter unique or challenging situations. Therefore, it is recommended that consultants communicate with MAC Lab curation and conservation staff throughout the course of a project for case-by-case guidance. For more detailed information see *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (Morehouse et al. 2022).

A solid research design will establish a plan for the eventual dissemination of archaeological research findings. The ***SAA Principles of Archaeological Ethics, Principles 6 &7***, as well as ***SHA Ethics Principles 3 and 4***, stress the importance and the duty of the archaeologist to ensure timely distribution of archaeological data. It should be noted that the term "publication" is not presented as an absolute in these ethical statements, but, rather, terms like "disseminate," "public reporting," and "documenting" are used. While publication in academic journals or monographs sets the gold standard for project outcomes, the landscape of opportunities for project reporting has expanded significantly since the last publication of the *Standards and Guidelines*. While the internet has increased opportunities for publication, it has also resulted in the decline of many traditional print publications and created real concerns about the permanency of end products.

Submission of final products to the MHT Library, even when not required to do so as a grant deliverable or to meet legal requirements, is still a best practice. All authors of archaeological reports are encouraged to consider providing copies of their final products to MHT for inclusion in the MHT Library, along with original field forms, notes, maps, and other data which can be archived at the MAC Lab. There is no box fee for the donation of records cre-

ated by professional archaeologists who generated collections as a result of emergency or research-related investigations not related to county, state, or federally-mandated compliance projects. Before any project begins, there should be a plan in place for disseminating research findings. Ideally, such plans will consider both the professional archaeological audience as well as the general public and will develop reporting strategies appropriate for each.

All archaeological projects on lands owned or controlled by the State of Maryland, within Maryland waters, and in all caves (including rockshelters) within the state require permits from the Maryland Historical Trust. See Maryland Natural Resources Code § 5-1401(b) for the legal definition of "cave". The process for obtaining a terrestrial or underwater archaeological excavation permit are described in greater detail in Chapters VIII and IX.

A permit from MHT is required for any activity that would "excavate, remove, destroy, injure, deface, or disturb a terrestrial archaeological site on land the state owns or controls" in accordance with State Finance and Procurement Article, §5A-342(a) of the Annotated Code of Maryland. MHT takes its legislated stewardship of state-owned archaeological sites seriously, and has created an application for terrestrial archaeological permits that reflects its commitment to ensure that any permitted investigations are conducted:

1) by qualified individuals associated with a museum, institution of higher learning, or other scientific or historic organization;

2) according to a well-designed research plan reviewed by MHT;

3) in a manner that ensures objects and materials collected during excavation are properly safeguarded and preserved, typically through curation at the MAC Lab;

4) for the benefit of the citizens of Maryland; and

5) in close coordination with the land-managing entity. Likewise, all lands below mean high tide and in most navigable rivers throughout Maryland are owned by the state.

A permit is not required to inspect, study, explore, photograph, measure, record, conduct a reconnaissance survey, or otherwise use and enjoy a submerged archaeological resource provided the use does not:

1) involve excavation, destruction, or substantive injury to the resource or its immediate environment;

2) endanger other persons or property; or

3) violate other regulations or provisions of federal, state, or local law.

Any other activities on submerged cultural resources may require a permit to be obtained from MHT. Generally speaking, the process of obtaining archaeological permits is not arduous, but does require communication and coordination with multiple state agencies and the approval of both the Chief Archaeologist and the Director of MHT. Plan ahead and follow the process laid out in Chapter IX.

Organization

Chapter II describes the goal of the identification component of historic preservation activities (Phase I) and discusses the research designs, archival studies, fieldwork , and analysis associated with locating archaeological historic properties. Chapters III and IV provide corresponding information for the evaluation of an archaeological property's significance (Phase II) and for the treatment or mitigation of adverse effects on an archaeological historic property (Phase III). Methods for creative mitigation are discussed as well. Comments on other archaeological investigations for archival studies; historic preservation plans; the various MHT grant, loan, and easement programs; the registration of archaeological properties in the Maryland Inventory; and academic research are included in Chapter V. Chapter VI presents the key factors one needs to consider in planning the processing and curation of collections, including both artifacts and associated records. However, it should be noted that far more detailed standards are required for collections submitted to the MAC Lab and these are described in *Technical Update No. 1 of the Standards and Guidelines for Archaeological Survey and Excavation in Maryland: Collections and Conservation Standards* (Morehouse et al. 2022). Chapter VII contains significant revisions to our standards and guidelines for the production of archaeological reports and other documentation, while Chapter VIII deals with the special considerations required for maritime and underwater archaeological studies. Chapter IX (Important Considerations) addresses professional qualifications, permits, treatment of human remains, remote sensing and public archaeology. Finally, numerous references and appendices provide supplementary sources of technical archaeological information as well as sample and reference documents.

Definitions

This Introduction closes with a list of some useful definitions of words, phrases, and acronyms specific to historic preservation:

Advisory Council on Historic Preservation (ACHP) - the independent federal agency established by the National Historic Preservation Act of 1966 (16 USC 470i) and charged with advising the President and the Congress on historic preservation issues and with reviewing federal and federally assisted projects that affect historic properties.

Area of Potential Effects (APE) - the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties. The APE may also be called the "project area" or "study area" in these guidelines.

Archaeological Property - any object (e.g. artifact), site, or district which bears evidence of human activity. For the purposes of this document (and most legislation), an archaeological property must date from prehistoric/precontact or historic times (i.e., at least 50 years ago). Not all archaeological properties (archaeological resources) are necessarily historic properties.

Artifact - any object which has been made or intentionally modified by human action. For the purposes of this document, the object must date from prehistoric/precontact or historic times (i.e., generally at least 50 years ago) to be an artifact.

Collection - "material remains that are excavated or removed during a survey, excavation or other study of a precontact or historic resource, and associated records that are prepared or assembled in connection with the survey, excavation or other study" (36 CFR § 79.4[a]). Collections may include artifacts, specimens or samples, field notes, drawings, photographs, remote sensing data, maps, GIS data, and other materials.

Consultation - "the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process" (36 CFR § 800.16[f]). Consultation entails the active exchange of views about a particular property or projects and may include the involvement of federal agencies, state agencies, local governments, Indian tribal organizations, project or permit applicants, parties with legal or economic interests in the project, the ACHP, SHPOs, and others.

Geographic Information Systems (GIS) - a digital system or database for the management, analysis and display of geographically referenced spatial data. The use of GIS systems to display archaeological data has become standard practice within the discipline.

Historic Contexts - an organizational framework that groups historic properties by similarities in geographic region, time or developmental period, and theme. Historic contexts form a system for the identification, synthesis, and evaluation of known or expected historic property types and often serve as the basis for developing appropriate treatment measures for those properties.

Historic Property - any district, site, building, structure, monument, or object significant in the prehistory, history, terrestrial or underwater archaeology, architecture, engineering, or culture of Maryland and which is included in or eligible for the National Register of Historic Places. Historic properties include artifacts, records, and remains related to a district, site, building, structure, or object. Archaeological sites are often referred to as archaeological properties in these guidelines.

Maryland Commission on Indian Affairs (MCIA) - the Maryland Commission on Indian Affairs is composed of nine members appointed by the Governor of Maryland and confirmed by the Maryland State Senate. The MCIA's mandate is to serve the interests of Native American communities in Maryland, promote awareness and better understanding of the historic and contemporary contributions of Native Americans to Maryland, and assist state, local, and private agencies in providing resources to address the educational, social, and economic needs of Native American communities in Maryland.

Maryland Inventory of Historic Properties (MIHP or Maryland Inventory) - the Maryland Historical Trust's list of all districts, sites, buildings, structures, and objects of known or potential value to the prehistory, history, terrestrial or underwater archaeology, architecture, engineering, and culture of Maryland. The Maryland Inventory includes archaeological sites as well as standing structures and other properties.

National Register of Historic Places (NRHP) - the U.S. Department of the Interior's list of districts, sites, buildings, structures, and objects that possess integrity and are associated with significant historical events; are connected with the lives of important people from the past; are embodiments of distinctive or artistic forms of construction; or have yielded or may yield information important in prehistory or history (See Historic Property).

Preservation and Historic Preservation - "identification, evaluation, recordation, documentation, curation, acquisition, protection, management, rehabilitation, restoration, stabilization, maintenance and reconstruction, or any combination of the foregoing activities" (16 USC 470w[8]) of historic properties.

Principal Investigator - an individual who assumes responsibility for conducting or directly supervising a specific archaeological project and who meets the Secretary of the Interior's "Professional Qualifications Standards" (Dickenson 1983:44738-44739; Chapter VII).

Remote Sensing - various means of imaging and mapping that can potentially identify anomalies caused by obtrusive archaeological resources. As used in these guidelines, remote sensing generally refers to land and water-based methods of geophysical survey. However, airborne and satellite-based methods are also used in archaeology.

State Historic Preservation Officer (SHPO) - the individual appointed by the Governor of Maryland to administer the State Historic Preservation Program under the provisions of the National Historic Preservation Act of 1966. SHPO frequently also refers to the office or staff of this individual.

Statewide Preservation Plan - The various statewide comprehensive historic preservation plans, prepared by MHT. MHT is mandated to produce a state historic preservation plan which includes archaeology, pursuant to Section 101(b)(3)(c) of the National Historic Preservation Act, as amended. Regulations require a plan "that provides guidance for effective decision making about historic property preservation throughout the state".

Tribal Historic Preservation Officer (THPO) - an official designated by a federally recognized Indian tribe to direct a program approved by the National Park Service in which the THPO must have assumed some or all of the functions of a State Historic Preservation Officer on tribal lands (Section 101[d][2]).

Undertaking - any project, activity, or program that receives funding, authorization, or permission from a state or federal agency which could result in changes in the character or use of historic properties, if any such properties are located in the area of potential effects (see above). Undertakings are also frequently referred to as projects in these guidelines. For purposes of consultation, see FIGURE 1.

Additional Information

For additional information or assistance concerning the compliance review process or these standards and guidelines, contact MHT's Office of Preservation Services. The MHT Office of Archaeology provides guidance and oversight regarding general issues in Maryland archaeology. Please see the ***MHT Staff Directory*** for current contact information.

II *Identification (Phase I)*

Goal

For Maryland, the goal of identification for compliance projects is to locate archaeological properties that may be eligible for the National Register of Historic Places in an undertaking's area of potential effects. The various activities that comprise identification are grouped together under the designation of Phase I Archaeological Investigation. Phase I studies entail development of research designs, archival and background research, field survey, analysis, and reporting. While Phase I investigations serve to discover or to locate archaeological resources, Phase II and Phase III projects evaluate the significance of the cultural resources and mitigate adverse project effects, respectively (see Chapters III and IV).

Phase IA, IB, etc.

In Maryland, Phase I identification projects include both the assessment of archaeological sensitivity of the project area and field survey. In some states, Phase I archaeological investigations are divided into Phase IA (assessment of archaeological sensitivity through literature review) and Phase IB (field investigations, typically shovel test pit surveys), however Phase "IA" and "IB" are not used in these *Standards and Guidelines* and should not be distinguished in technical reports. For a discussion on Assessments of Archaeological Potential that might be conducted before a Phase I survey, see page 51.

As a rule, Phase I surveys in Maryland involve some form of sampling (for example, surveying in systematically arranged transects) to permit the economical investigation of the undertaking's area of potential effects with a high assurance that significant archaeological resources have not been overlooked. Surveys designed to locate all historic properties in an area of potential effect will help to prevent the delays associated with discovering historic properties during a construction project (36 CFR § 800.11). The use of sampling in Phase I field survey is consistent with the ACHP's admonition for federal agencies to "make a reasonable and good faith effort to identify historic properties... " (36 CFR § 800.4[b] ; see section below entitled "Field Survey - General Considerations").

Research Design

All identification projects should begin with the formulation of an explicit plan or program of archaeological study: a research design. The research design, part of which might take the form of a proposal written in response to a request for proposals, is a framework that describes activities to accomplish the goals of an identification study. Important components of research designs are statements and discussions that justify chosen methods and techniques as the most logical and otherwise suitable means to locate potentially significant archaeological resources. Consultants should ensure that research design discussions include the relevant stakeholders.

The **Objectives** section of a research design should begin with a discussion of why archae-

ological identification is needed for the particular project. First, it is necessary to name the governmental agencies and other parties involved in an undertaking; to describe the nature of the undertaking (e.g., construction of a transmission line with certain access roads) and its area of potential effects (including the area where both the direct results and indirect consequences of a project may occur); and to cite which specific laws, regulations, guidelines, and other requirements have either called for or apply to the project. Maps and other illustrations of the spatial relationships of resources impacted by the proposed undertaking should be consulted and (as necessary) incorporated into the research design, or bid proposal. Based on this information, project archaeologists may establish areas of high, moderate, and low archaeological potential within the project area to ensure that an appropriate level of research will be conducted. Project archaeologists are welcome to consult with MHT's Project Review and Compliance staff regarding the appropriate level of research for terrestrial archeology projects. Maritime Phase I survey projects should always consult with the State Underwater Archaeologist regarding research design.

Specific objectives of a Phase I Archaeological investigation should include:

- ***Delineation and inventorying of all archaeological properties/sites in the area of potential effects, noting if they may be eligible for the National Register of Historic Places;***

- ***Characterization and interpretation of all identified archaeological properties/sites with respect to cultural/temporal periods as listed on the Maryland Inventory - Archaeology Site Form;***

- ***Appraisal of the results of the investigations in light of existing models of settlement patterning;***

- ***If sufficient data are available, evaluation of National Register eligibility;***

- ***Assessment of the undertaking's impacts on the identified archaeological properties/sites; and***

- ***Recommendations concerning the need for additional archaeological work.***

The **Methods and Techniques** portion of a research design should describe the amounts and kinds of archival or background research, field investigations, and analytical studies anticipated to achieve the goals and objectives of the project. Descriptions of general research methods and specific research techniques (e.g. subsurface shovel testing and remote sensing) should be justified to ensure that appropriate and successful strategies are planned for a particular project area's size, accessibility, environmental characteristics, and expected archaeological properties. An explicit discussion of methods and techniques will also help agency reviewers and other archaeologists to judge the quality and effectiveness of the work and permit scientific replication of analyses.

The **Expected Results** section of the research design should discuss the number, size, location, age, and general cultural characteristics of the archaeological resources anticipated in the APE. Thorough background research into the project area and into predictive models of settlement for analogous locations can provide the basis for these expectations. Whenever possible, a preliminary field check should take place to provide familiarity with the

micro-environment(s).

The expected results section should also discuss the general quantity and condition of material culture expected to be recovered during the investigation and provide a plan for the conservation and curation of the recovered artifacts. For more information on conservation and curation planning, see sections 7-10 of *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (Morehouse et al. 2022).

Additional technical information for developing strategies for identification surveys includes the archaeological publications listed in the *Secretary of the Interior's Standards for Identification, Recommended Sources of Technical Information* (Dickenson 1983:44723).

The Maryland Archaeological Synthesis Project

Since the National Historic Preservation Act was passed in 1966, MHT and similar state agencies across the country have had to evaluate the impact of state or federally involved projects on archaeological resources. These evaluations usually result in a survey report or site forms, each often consisting of hundreds of pages of archaeological data. MHT receives approximately 100 new archaeological reports per year. In Maryland, this "gray literature" is stored at the MHT Library; however, MHT, like many other states, is striving to disseminate the project-oriented information in a way that can easily be used by researchers to review on a site-by-site basis.

In 2007, the ***Maryland Archaeological Synthesis Project*** was launched with funding from the MHT Board of Trustees and the Maryland State Highway Administration. The purpose of the project was to begin the process of synthesizing data from the thousands of archaeological projects that occur around the state. The Synthesis Project focuses on sites where extensive work has been carried out beyond identification-level survey and is organized by individual site instead of by project. There are two main parts to each Synthesis entry:

- **Cover Sheets:** a summarization of each survey report that identifies and/or investigates a particular site. It includes the title, author, library locator information, cultural resource management firm who conducted the work, and collections information. It also includes a brief summary of the project justification, goals of the project, other sites examined in the report, and the research potential of the site.
- **Synopsis Reports:** a summarization of all compiled site data. It includes a single site narrative that combines site history, archaeological work summaries, and analyses from all reports available. It also includes a summary sheet that notes site location, site function, diagnostic artifact counts, collection curation information, flotation sample and radiocarbon data (as applicable), and more.

Researchers may access the cover sheet and synopsis reports by searching the Synthesis Project database. Using search parameters like site number, site name, keywords, site type, site function, or filtered by county map or list, researchers can obtain the most pertinent information about sites quickly and efficiently to see if it matches their research needs.

The cover sheets and synopsis reports are available in two forms: Public Access and Professional Access.

Archival and Background Research

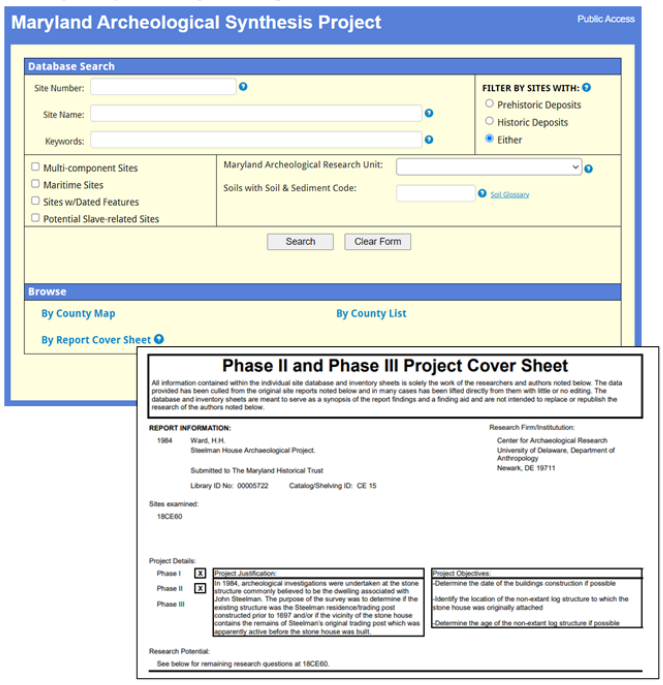
The purpose of archival and background research is to acquire information on a project area's known and potential archaeological properties prior to initiating time-consuming and costly field investigations. Most archival and background studies should be completed and their results assessed **before** fieldwork begins so that the preliminary survey strategies outlined in contract proposals may be refined. The non-field research will help guide the field survey by indicating where any documented National Register eligible archaeological sites are located and where other significant archaeological properties may be found.

Documentary research in libraries, archives, and other facilities can provide both primary and secondary archaeological information. Several of the most basic archival sources

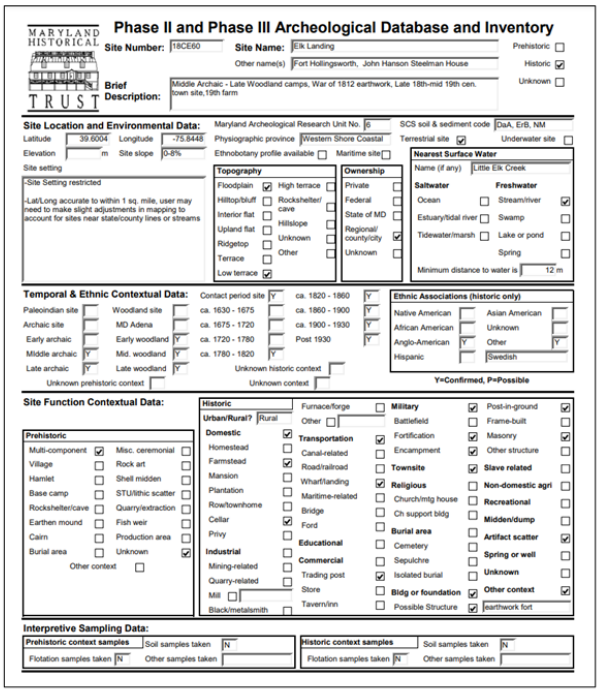
The Public Access version gives much of the same information as the Professional Access version, with two caveats: geographic location and site setting information. To conform with archaeological confidentiality laws, the Public Access version is intentionally vague to protect site locations: latitude and longitude data is only accurate to within 1 square mile of each site. To request an account for Professional Access, users must be a professional archaeologist, agency representative, or other authorized researcher who meets the Secretary of the Interior's Professional Qualification Standards and who currently has a Medusa account.

It should be noted that the information contained in the synopsis reports is solely the work of the researchers and authors noted in the corresponding project cover sheets for each site. The data available in the synopsis reports are extracted directly from the source material, often without editing. **Thus, it is important that the synopsis reports are not cited, but are only used to locate the full site report.**

The Maryland Synthesis Project search portal



A typical Synthesis Project cover sheet



A typical Synthesis Project synopsis report

that describe known archaeological sites and their locations are the Maryland Inventory of Historic Properties, the National Register of Historic Places, and lists of sites for which determinations of National Register eligibility have been made. Published and unpublished reports on previous archaeological investigations in or near the current project area are also essential sources. Much of this information is available online via Medusa, MHT's online database of architectural and archaeological sites and standing structures (***Medusa Login***). Additional information on archaeological sites that have been the subject of Phase II and/or Phase III investigations is available online through the Maryland Archaeological Synthesis Project (***Synthesis Project Login***).

Other documentary materials which can be useful in locating potentially significant archaeological properties, depending on the nature of the undertaking and project tract, include:

- ***Contractors'/developers' maps and planning documents;***
- ***Historic maps and atlases, including early US Geological Survey (USGS) quadrangles;***
- ***Insurance records and maps;***
- ***Publications on local prehistory and history;***
- ***Compilations of environmental data (e.g.. geomorphological studies and the Soil Conservation Service's soil survey books with aerial imagery);***
- ***The USGS Earth Explorer database, including historic aerial imagery;***
- ***Building permits*;**
- ***Publicly available GIS data such as MD iMAP or county planning office GIS portals;***
- ***Tax maps; and***
- ***Ground disturbance records.***

Informant Interviews: Informant interviews are another potential means to obtain data on a project area's archaeological resources. Contacting people who live or work near a study site can yield very specific data on archaeological sites and past land use. Preliminary field visits are necessary to establish a network of local contacts, and meetings with local chapters of the ***Archeological Society of Maryland, Inc.***, and with the ***Council for Maryland Archeology*** can offer the opportunity to discuss an area with a sizable number of individuals. Maryland's State Terrestrial Archaeologist and archaeologists of MHT's Office of Preservation Services can provide the names of contact persons and may in some instances possess additional project-specific archaeological knowledge.

From informants and data sheets of the Maryland Inventory of Historic Properties, it is often possible to determine if collections of archaeological specimens from a project tract exist and where they are located. Avocational archaeologists or repositories like MHT and

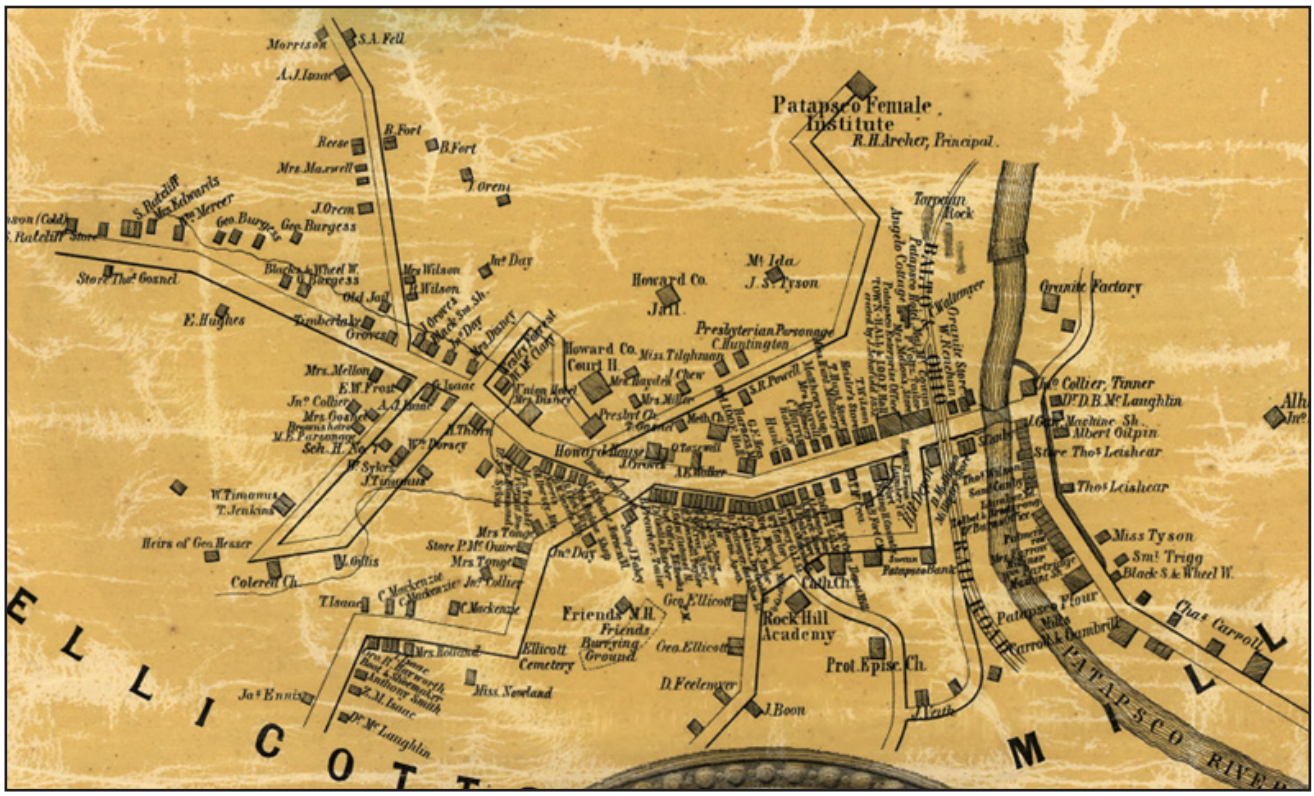


***FIGURE 2** - Documentary Material Example: Martenet's 1860's Map of Howard County provides information on historical settlement in Ellicott Mills (now Ellicott City).*

the MAC Lab may possess these collections. Examination of the collections can provide an investigator with an idea of the kinds and ages of archaeological resources expected in a project area. These studies can also suggest the range of variability of cultural materials present in a locality. Furthermore, by assessing the amount of past collecting of artifacts from a site, one might be better able to judge the integrity of an archaeological property.

Collection studies, informant interviews, and documentary research together assist in predicting the number, location, and nature of archaeological resources in a study area. Additionally, these activities enable the refinement of appropriate historic contexts for the interpretation of new archaeological finds. Fully developed contexts provide the basis for well-reasoned discussions of the potential significance of the resources with respect to important research issues and comparative data from similar archaeological properties.

Field Survey

General Considerations: The ACHP's regulations for the Section 106 review process state that federal agency officials "shall make a reasonable and good faith effort to identify historic properties that may be affected by the undertaking..." (36 CFR § 800.4[b]). In the same manner, archaeologists conducting Phase I surveys for all federal and state compliance projects in Maryland are to conduct their investigations with "a reasonable and good faith effort." This statement means first that some form of sampling should be employed so as to collect an appropriate amount of representative information in the area of potential effects. Secondly, whatever field procedures are followed must be well-justified and sys-

tematically applied. Surveys performed according to a judicious sampling plan will help to reduce project costs while yielding credible information on the distribution of archaeological properties throughout a project tract.

All surveys should be intensive and include a combination of pedestrian (walkover) examinations of the ground surface and subsurface testing. This work should delineate all archaeological sites (both known sites and previously unreported resources) and should record current land-use features. Furthermore, sufficient soil descriptions and/or geomorphological field studies should be conducted to ascertain whether intact archaeological resources might exist in the soils and landforms of a project's area of potential effects. The intensity of sampling (e.g., spacing of transects) must directly relate to the expected sizes of the archaeological properties, the possibilities of spatial patterning of the resources, and the field conditions. Archaeologists considering a phased approach should contact the staff of MHT's Office of Preservation Services as early in the planning process as possible. While sampling of the area of potential effects is generally necessary, surveyors should retain all of the precontact and historic artifacts recovered from the sampled land for analysis and curation. However, see the sampling and discard discussion in Appendix IV for recommendations when discard is warranted, and recall that this document's definition of "artifact" includes only those cultural items which are at least 50 years old. It may be useful, however, to save a modern cultural object if it is critical for the interpretation of an archaeological property's stratigraphy and integrity. While **archaeological monitoring** is sometimes a useful activity when done in consultation with MHT, we generally do not consider monitoring to be a suitable substitute for the identification, evaluation, or treatment of cultural resources.

Pedestrian survey, which in some cases may be carried out simultaneously with subsurface testing, should include the examination of exposed sections of soil for artifacts and features. Even in areas covered with thick vegetation, it may be possible to discern features like trash dumps, wells, cellar holes, foundations, earth mounds, or rock cairns. The differential growth of vegetation, as at sites with ornamental trees and flowers where historic houses once stood, may also signal buried archaeological deposits. Other potential targets of walkover surveys are standing historic structures, which may have associated archaeological resources, and caves and rock shelters. The latter locations (most frequently found in steep terrain) may have been sites of precontact occupation. Permitting is required for all collection from caves/rockshelters (see Chapter VIII). Pedestrian survey design should consider that due to the prevalence of no-till agriculture in Maryland, surface exposures of archaeological material culture may be limited when compared to prior historic pedestrian surveys of moldboard-plowed fields (O'Neal and Lowery 2017). In most cases, modern farming practices no longer provide sufficient artifact exposure, so subsurface testing will be necessary.

Pedestrian surveyors should design field strategies to delineate archaeological properties and to identify cultural affiliation and research potential. For example, if artifact collection by quadrants is proposed for a plowed field, then the sampling units should be small enough to reveal site boundaries and activity areas, but they should not be so overly small (piece-plotting in the extreme case) that the scattering effects of cultivation are ignored and the results provide a false sense of accuracy. Finally, there should always be an accompanying component of subsurface testing. The objectives of this excavation work are to provide: 1) information on the subsurface characteristics (including depth and integrity) of archaeological properties discovered on the exposed surface: and 2) reasonable confir-

mation that no buried archaeological resources are present where none are visible on the ground surface. In most cases the transect interval (whether surface collection or STPs) should not exceed the established max interval of 15 m (see below).

Due to the frequently wooded environments and irregular topography of Maryland, the excavation of shovel test pits (STPs) according to a carefully justified sampling strategy is typically the most cost-effective and rigorous for archaeological surveying. STPs are typically circular holes dug to the width of a shovel blade (ca. 35 cm diameter) and to the depth of subsoil that is devoid of cultural material. In order to lend assurance that the base of a given STP is devoid of cultural material, excavation should continue at least 20 cm below the deepest recovered artifact. Digging by shovel should proceed according to recognizable soil horizons and strata, with each soil or stratum being screened individually through hardware cloth (generally 1/4" mesh) to recover small archaeological materials. Stratigraphic excavation even at the scale of STPs can, in some instances, shed light on the integrity and significance of archaeological properties. Excavators should place artifacts and other cultural items in bags with horizontal and vertical provenience, as well as with other pertinent information. Before backfilling the STPs, field personnel also should systematically record data on the study area's soils and stratigraphy, including depths of strata, content, soil textures (Soil Survey Staff 1975), and soil colors (Munsell Color 1975).

The maximum horizontal test pit interval for Phase I subsurface shovel testing is 15 meters. However, based on the background research, specifically on the expected diameters and spatial patterning of archaeological properties and on any additional information relating to archaeological resource size and visibility, the research design may require intervals less than 15 meters. A small number of close interval radial shovel tests should be excavated around STPs that appear to produce "isolated" cultural materials, in order to look for archaeological resources of a smaller diameter than the STP interval.

When establishing survey grids, field personnel should choose the tools and techniques (tapes, compasses, transits, pacing) appropriate for the task of identifying archaeological properties under given field conditions. Records must be made on how survey grids were established with reference to georeferenced permanent datum coordinates. The datum coordinates can be generated by tying a grid to a survey benchmark with a known coordinate system or by using a sub-meter (or better) GNSS (Global Navigation Satellite System).

Special environmental characteristics of a project area may make modified forms of intensive subsurface surveys more reasonable. For example, in cases where the land has steep slopes, the pedestrian component of the survey is generally reliable for revealing the need for any subsurface investigation. Slopes of ten percent and greater are believed to rarely contain significant archaeological properties (see, for example, Kavanagh [1982]). Furthermore, in areas where significant, deeply buried archaeological deposits may exist, it is necessary to carry out a minimal amount of excavation to a depth below that which is attainable by hand shovel (approximately 1 meter below ground surface). Floodplains, areas covered by colluvium or loess, and bogs may be some of the locations with deep archaeological properties. Auguring may, in these situations, identify cultural strata, and backhoe trenching with limited hand excavation and sieving of soil from exposed column samples may discern artifacts and other cultural materials. The excavation of deep pits by hand or by mechanical means must meet all federal, state, and local statutes for human safety (e.g., OSHA requirements for the shoring of trenches). Prior to commencing surveys in areas that may have deeply-buried archaeological resources, agencies should consult with the

MHT's Office of Preservation Services to determine the amount of deep testing which is appropriate. Also, whenever alternative identification procedures are proposed (e.g., aerial photography, other forms of remote sensing, soil chemistry studies, etc.), consultation with MHT's Office of Preservation Services should precede fieldwork.

Special Considerations in Urban Settings: Since cities generally lack large tracts of undeveloped land which are not covered by either pavement or buildings, archaeological surveys in urban settings commonly take different forms than in rural areas. Survey strategies are directly related to the difficulty and large expense of conducting excavations in soils that are covered by concrete, standing buildings, rubble, or other impervious materials.

Archaeological work in cities can also be costly for its extraordinary logistical problems and disruptions of municipal services. In addition, urban areas have often experienced intensive historic activity spanning several hundred years, with subsequent development building upon earlier episodes of historic occupation. Thus, archaeological properties in urban contexts are frequently characterized by complex and deep stratigraphy and often consist of overlapping deposits representing several time periods of use.

For these reasons, Phase I investigations of urban settings initially entail detailed archival and background research to determine the types, time periods, and possible locations of archaeological resources predicted within the area of potential effects. Chapter V presents a discussion of the goals, objectives, methods, and reporting requirements for an archival study. This background research is also useful for defining the most appropriate testing strategies and sampling plan for the project area.

In urban settings that still retain large expanses of open space (such as park lands or sizable residential tracts) it may be feasible to employ the surface and subsurface testing methods discussed above. However, when it would not be possible to examine the soil of an urban project area except by mechanical excavation (e.g.. backhoe, jack hammer), Phase I field investigations may proceed in the following manner.

A pedestrian field check/disturbance study should occur in conjunction with the archival and background research, to assess the likelihood that significant archaeological properties exist in an area of potential effects. Documentary studies, interviews, and other background research like GIS-based cut and fill analyses should establish whether known or probable archaeological resources are present. During the field check there should be an examination of present land use to further consider how historic and modern building activities may have disturbed or affected the integrity of archaeological properties. The contractor should then produce a report on the results of these Phase I studies and on the potential for significant archaeological properties existing in the area of potential effects. Any excavation would await review of the report by MHT staff and would form part of a new Phase II project (Chapter III). In some instances, the archival study and disturbance assessment may be sufficient to demonstrate that the area of potential effects has a low potential for containing significant archaeological properties and thus eliminate the necessity for undertaking costly field excavations.

Certain other urban settings may already contain a documented high potential for the presence of archaeological properties (based on historical association, previously identified resources, or the undisturbed nature of the project area). In these situations, a cost effective course of action for identification would combine all the archival work and field

checking of Phase I with excavation of Phase II evaluative test units. Systematic test strategies should target the full range of potential resource types based on the results of the archival study. A single report would describe all of the Phase I and II studies, and it would contain clear evaluations of the significance of all identified archaeological resources.

Consultation with the Project Review and Compliance unit of MHT's Office of Preservation Services should precede all stages of urban compliance projects, to determine the most appropriate level of investigation for a given project area. Furthermore, there should be consultation with MHT staff prior to field identification surveys when alternative discovery techniques are considered.

Remote Sensing Surveys: Archaeological sites may be discovered using remote sensing techniques such as metal detecting, LiDAR, magnetic susceptibility, gradiometry/magnetometry, electrical conductivity and resistivity, ground penetrating radar (GPR), and drone-based surveys, among other methods. Remote sensing may be beneficial to guide the locations and configurations of subsurface testing. Typically, remote sensing surveys are applied during Phase I investigations but may be used in all phases of survey.

While remote sensing surveys can have a real time prospecting component, archaeological remote sensing surveys must collect and record data to be analyzed and reported. In order to accurately locate geophysical anomalies, remote sensing surveys must employ a grid that is georectifiable (see above). Interpretations of the anomalies identified by remote sensing surveys should be tentative and conditional. Ground-truthing will be necessary to determine the true nature and distribution of the anomalies identified by remote sensing surveys. For more information on remote sensing see Chapter IX.

Guidelines for Ground Penetrating Radar Surveys

Archaeological GPR surveys must include the collection and recordation of radar data. The recorded individual radargrams must be post-processed and combined to create a 3-dimensional block of data to produce amplitude time-slices, which are horizontal plans that correspond to different depths below the ground surface. "Spray paint" surveys are irreproducible and not acceptable. GPR survey reports should list the GPR system(s) employed, the parallel transect spacing, and the individual radar sample intervals along each transect. Reported methodology should also include the software used for data post-processing and the processing treatments (see Chapter IX).

The parallel transect spacing interval is a critical parameter in GPR surveys. Closer transect spacing generates higher resolution amplitude time-slices, which can identify smaller anomalies. In order to collect GPR data sufficient for identifying archaeological features, GPR surveys on archaeological sites should be conducted at a maximum parallel transect spacing of 50cm. GPR surveys in cemeteries should be conducted at a maximum parallel transect spacing of 25cm in order to minimize the risk of failing to document burial related anomalies such as sub-adult burials or misaligned burials. Transect spacing of 25cm is also suggested on archaeological sites where primarily small anomalies are expected like small postmolds associated with precontact structures.

Analysis

Analyses of archaeological resources identified through Phase I investigations should be geared at a minimum towards qualitative and quantitative description, as well as recommendations about the need for further field study. Analyses requiring greater expenditures of effort, such as radiocarbon dating and residue analyses, would be more appropriate during Phase II evaluation and Phase III data recovery projects when archaeological significance and significant archaeological properties are being examined (see below). The preservation of significant archaeological properties is, after all, the goal of both federal and state historic preservation laws.

One of the primary analytical tasks should be the classification of all artifacts and features discovered. Analytical procedures must be explicit to permit the confirmation of results by

Summary Table Examples

Tool assemblage	Locus I	Locus II
Biface Fragments	6	5
Endscrapers	11	16
Sidescrapers	9	4
Uniface Fragments	8	8
Utilized and Edge Retouched Flakes	22	46
	0	3
	0	2
ols	6	0
	74	**84**

Time Period	*Ware Type*	*Temper*	*Ceramic Count*
Early Woodland	Accokeek Ware	Sand/Gravel Tempered	74
	Popes Creek	Sand/Gravel Tempered	8
Middle Woodland	Mockley Ware	Shell Tempered	39
Middle/Late Woodland	Unid	Shell Tempered	5
Late Woodland	Potomac Creek Ware	S T	
	Townsend/Rappahannock	S T	
Woodland	Unid	S T	
Total Ceramics:			

Radiocarbon Dating Sample No.	Context	Feature Type	Material Dated	Radiocarbon Age	1σ Error	Calibrated Date (BC/AD) 2σ Range*
044409	Feature 1	Pit Feature	*Carya spp.* Nutshell	3806	23	2340-2143 BC
044410	Feature 2	Hearth	*Carya spp.* Nutshell	3837	26	2454-2200 BC
044411	Feature 3	Pit Feature	*Carya spp.* Nutshell	3994	22	2573-2467 BC
044412	Feature 4	Circular Soil Stain	*Carya spp.* Nutshell	3899	22	2465-2298 BC
044413	Feature 6	Possible Hearth	*Carya spp.* Nutshell	524	18	AD 1400-1435
044414	Feature 9	Hearth	*Carya spp.* Nutshell	363	18	AD 1458-1631
044415	Feature 10	Large Pit Feature	*Carya spp.* nutshell	3788	24	2292-2140 BC
	* Dates calibrated via OxCal 4.4 (Bronk Ramsey 2009) using IntCal20 (Reimer et al. 2020).					

other researchers. Investigators should conduct their identifications of archaeological materials using the best current standards of professional knowledge and with reference to professional publications of comparative samples. Another important step is the cultural and temporal characterization of the archaeological resources with respect to historic contexts appropriate for archaeological sites in Maryland (see Appendix V), as well as ***prehistoric contexts of Jefferson Patterson Park's (JPPM) Diagnostic Artifacts in Maryland***. Examinations of the individual archaeological materials should also involve the interpretation of the larger archaeological property in terms of cultural behavior and site function or use.

Tables should be created for each archaeological site (or loci within sites) identified during the survey to summarize the distributions of significant artifact categories and support site interpretations and recommendations. Tables should highlight the materials, func-

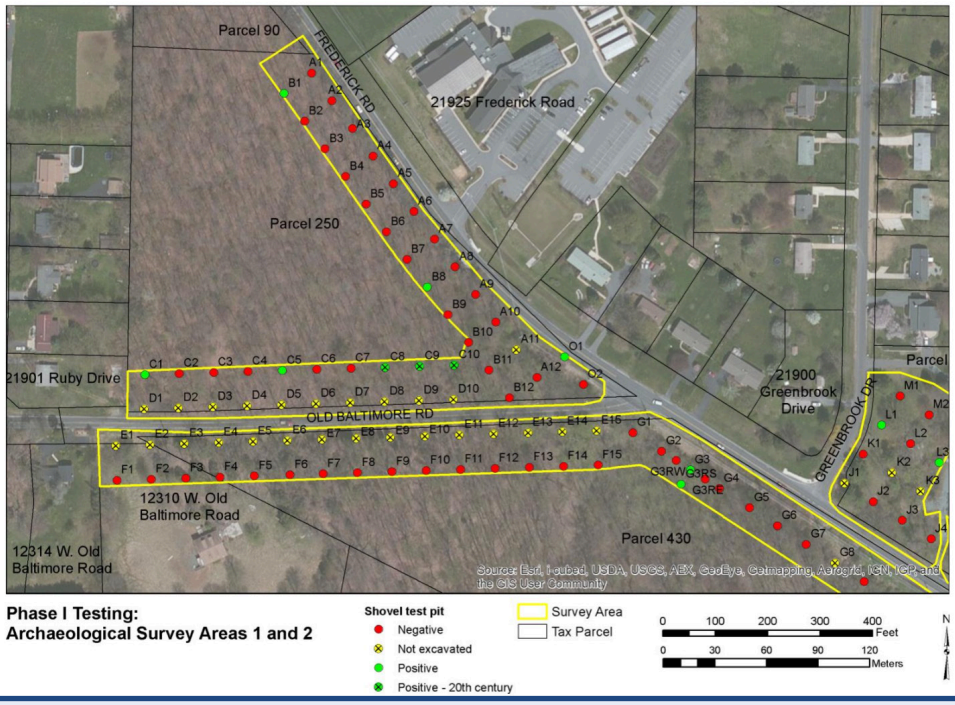
Phase I Mapping Standards

Given the importance of context and locational information to archaeology, site maps tied to a geospatial datum or other landscape feature that the site grid was linked to should be included in the Phase I technical report and all subsequent Phase II and III reports (See Chapter VII for further guidance). GIS software based maps are encouraged. Maps must be produced at a scale that places the project area and archaeological sites in local context. All figures must exhibit clarity and utility – providing clear, legible, and useful information that cannot be readily transmitted in text format.

All maps should be labeled with a title, **which should include the Maryland Inventory archaeological site number(s), if sites are present**. All maps should also include a **legend** for symbols, a **north arrow** or compass for orientation, and a **scale bar**.

The following items should be displayed via maps:

- Area of potential effects/ Project impact areas;
- Prior survey coverage area;
- Archaeologically sensitive areas;
- Precise locations of test pits and sampling units;
- Distributions of relevant artifact types by count;
- When appropriate, georeferenced historic maps/aerials covering the project area;
- Positive test pits and excavation units and the locations of relevant landscape or cultural surface features and artifacts;
- Archaeological site boundaries, both newly recorded sites and previously documented sites in the vicinity of the project area.



Above: An example map meeting all appropriate criteria (Comer et al. 2015)

tional classes, and stylistic types of artifacts recovered at each site. Necessary tables include a table of diagnostic artifact types by count with temporal affiliations listed, a table summarizing the functional classes of artifacts in the assemblage by count, and a table summarizing the features identified including feature function and temporal association. For examples of the types of categories to include in the summary tables, see the ***Maryland Archaeological Synthesis Project*** summary sheets. **NOTE: A printout of the full artifact catalog is not a substitute for these types of summary tables.**

Supplementary analytical activities should, when possible, provide information on site significance and integrity. In this regard, one must judge whether the quantity and quality of the observed archaeological resources indicate that the archaeological property might meet the eligibility criteria for the National Register of Historic Places (see Chapter III). Researchers, for example, should employ the results from their sample survey - whenever possible - to estimate the frequencies of different classes of artifacts and features for the entire archaeological property. This estimate could serve an important role in comparisons with other known sites and in deciding on the need for further work. The examination of natural and cultural formation processes of the archaeological record can also offer insights on site integrity, and therefore on significance. As an illustration, one should study the temporal homogeneity of archaeological materials according to individual strata or other provenience units. Even at the Phase I level, the detection of a stratified site suggests good site integrity and therefore increased potential for significance.

Reporting

Following the analysis of archaeological resources, researchers must prepare complete draft and final reports on all of the Phase I activities. Chapter VII contains standards and guidelines for these reports, copies of which must be submitted to MHT's Office of Preservation Services. Your report should be accompanied by the correspondence from MHT (or other agency - SHA, FEMA, local government, etc.) that recommended or required the archaeological investigations (see page 67) and the Mandatory Report Checklist discussed in Chapter VII. Additionally, Chapter VI and the associated Technical Update referenced discuss the requirements for processing and curation of the resulting collections (including artifacts and associated records).

III Evaluation (Phase II)

Goal

The goal of evaluation for compliance projects is to determine if an archaeological property identified in an undertaking 's area of potential effects is eligible for inclusion in the National Register of Historic Places (for state and federal projects). In Maryland, the various activities that comprise evaluation are grouped together under the designation of Phase II Archaeological Investigation. Phase II studies entail development of research designs, archival and background research, field studies, analysis, and reporting.

Research Designs

As with identification studies, all evaluation projects should start with a research design. General aspects of research designs appear in Chapter II. More specific comments on research strategies for evaluation studies follow.

The objectives of Phase II archaeological investigation include:

- ***defining the horizontal and vertical limits of the archaeological property;***
- ***interpreting the archaeological resource in terms of the activities, functions, time span, and historic contexts it represents;***
- ***investigating research questions that can provide information on the property's local or regional significance;***
- ***decisively evaluating the eligibility of the property for the National Register, as appropriate, and according to the proper criteria (36 CFR § 60.4 and COMAR 34.04.05.07, respectively);***
- ***determining the impact of the proposed undertaking on the archaeological property with reference to the federal Criteria of Effect and Adverse Effect (36 CFR § 800. 9) and/or in consultation with MHT (MD Code § 5A-325.) for federal and state projects, respectively; and***
- ***assessing the need for additional archaeological treatment of the property.***

The **Methods and Techniques** portion of a research design should justify the proposed research strategies. These strategies should be crafted to investigate the smallest sample of the property necessary to meet the outlined research objectives. Extant research reports (e.g., Phase I investigations, journal articles, comprehensive site plans) and other readily accessible documents are examples of the sources for development of a section on **Expected Results**. This portion of the research design should discuss the quantity, age, condition, and other general characteristics of the archaeological materials and features anticipated in the study.

Additional **technical information** for developing strategies for archaeological evaluation projects includes the publications listed in the *Secretary of the Interior's Guidelines for Evaluation*.

Archival and Background Research

The purpose of Phase II archival and background research is to supplement the existing information on a previously identified archaeological property and to determine the resource's significance and eligibility for the National Register of Historic Places. Investigators should carry out documentary research, informant interviews, and collection studies, as appropriate, to achieve these objectives. In addition to the sources noted in Chapter II, materials useful for the more intensive Phase II studies include:

- ***publications on the nature and significance of the general archaeological property type;***
- ***the Archives of Maryland Online;***
- ***early lithographs and photographs;***
- ***court records;***
- ***land patent and deed records (Note: most Maryland land records are available online through mdlandrec.net and plats.msa.maryland.gov);***
- ***real property records;***
- ***ordinances and resolutions;***
- ***transportation records (e.g., ship manifests for a port);***
- ***historic maps or early aerial photographs of the site;***
- ***wills and probate inventories; and***
- ***census data.***

While most of the above items pertain to historical archaeology, Phase II background research on certain precontact resources may (and typically should) entail consultation with soil scientists and geomorphologists on site formation processes. Re-examinations of the chronological and stratigraphic relationships of existing artifact collections might also provide new insights on a given site's integrity and significance. Finally, the various components of Phase II archival and background research should lead to refinement of the historic contexts particular to the investigated archaeological resource.

Field Studies

Phase II studies require the investigation of adequate portions of archaeological properties to evaluate the significance of the resources. However, the investigated areas of a given property should be as small as possible while still accommodating the attainment of the research goals. Besides reducing project time and costs, small samples prevent the unnecessary excavation of significant archaeological resources, which might be preserved *in situ* (Dickenson 1983:44724). The practice of limiting sample size below the level which would compromise resource integrity will also ensure that the proper review agency (Advisory Council on Historic Preservation or SHPO) is afforded its legally mandated opportunity to comment on governmental undertakings that may affect historic properties. In this connection, while the emphasis of Phase II field studies needs to be on archaeological resources within areas of potential effects, investigators also should establish the total horizontal and vertical extent of the resources, whenever possible. The determination of archaeologi-

cal boundaries, even if they extend outside of the precise limits of an undertaking, will provide more accurate information on resource size and can be to the undertaking agency's advantage. For example, in the context of resource treatment, an agency might preserve archaeological site areas outside the area of potential effects in lieu of conducting further excavations within the area of potential effects. **NOTE: It is not the intention of these Guidelines to suggest that Phase II field studies should extend beyond the area of potential effects off of the lands that are under the ownership, control, or jurisdiction of an agency in a given undertaking.**

Due to the diversity of archaeological properties and the different constraints of undertakings, the precise amounts and kinds of Phase II field studies need to be determined on a case-by-case basis. Nevertheless, all archaeological evaluation projects must include excavation as a major component of field sampling. In site settings that are conducive (e.g., open settings with limited obstructions), remote sensing surveys (see Chapter IX) are an effective strategy to quickly and accurately locate buried archaeological features, artifacts, and important cultural strata, which can then be investigated via excavations. In deeply plowed agricultural fields, systematic walkovers of sites and intensive, replicated surface collecting can be useful techniques for the establishment of site boundaries, the estimation of quantities of archaeological materials, and the determination of where to place larger excavation units. As with Phase I surveys, the surface examination of sites should proceed only if at least 50 percent of the resource area has exposed soil and generally only after a washing rain. **In most cases, no till agriculture and other modern farming practices no longer provide sufficient artifact exposure, so subsurface testing will be necessary.**

Generally, the excavation of systematically placed transects of close-interval shovel test pits (or, in some cases, auger holes) can determine the limits of an archaeological property relatively quickly (see Chankoff 1978). To accurately determine horizontal site boundaries, close-interval STPs (10 meters or less) should be excavated until at least two consecutive negative test pits have been encountered at the sampling interval (including all radials). This intensive shovel testing may also locate concentrations of artifacts and features for more detailed examination.

The next step in a multi-stage Phase II investigation is to use the information generated by remote sensing, surface collection, and/or the excavation of test pits to decide which arrangement of larger excavation units would most efficiently provide for the evaluation of resource significance and the study of related research issues (see above). Also, sufficient geomorphological field studies should be conducted (with a specialist, if necessary) to interpret the site formation processes associated with the archaeological resources.

Individual test units should measure at least 1 x 1 m to 2 x 2 m (or their imperial equivalents) depending on site size and expectations of artifact density and feature preservation. There should be an adequate number of these units to ensure the sufficient sampling of an archaeological property and its contents to determine the resource's eligibility for the National Register. The cost-effective positioning of test units demands that archaeologists carefully consider available data on intra-site patterning before choosing one or more forms of a sampling regime. In cases where initial site investigations have demonstrated that archaeological deposits are or may be present at a considerable depth, a minimal amount of deep testing (with safety precautions) is necessary to evaluate the significance of the buried resource. Mechanical excavation (e.g., backhoe, skid steer loader, hydraulic excavator) may accompany hand digging in these situations, and it is highly recommended

that archaeologists discuss deep testing and other alternative strategies with the archaeological staff of MHT's Office of Preservation Services prior to fieldwork.

The excavation of test units should normally continue until the excavator encounters subsoil that is devoid of cultural material. In order to lend assurance that the base of a test unit is devoid of cultural material, excavation should continue at least 20 cm below the deepest recovered artifact in the subsoil or until the C-horizon substratum is encountered. Digging by shovel and trowel should proceed according to recognizable soil horizons and strata, with each soil or stratum being screened individually through hardware cloth (generally 1/4" mesh) to recover small archaeological materials. The plowzone can be excavated as a single level regardless of thickness. Soil strata below the plowzone that exceed 10 cm in thickness should typically be subdivided into 10 cm arbitrary levels.

Mapping and photographing of the excavations and the archaeological finds should supplement the systematic recording of notes on field activities. Excavators should place artifacts and other cultural items in bags with horizontal and vertical provenience, as well as with other pertinent information (date of recovery, excavators initials, etc.). Excavation strategies should enable the retrieval of specialized data through such practices as retaining soil samples, flotation samples, or the use of fine mesh screening. Before backfilling the test units, field personnel also should document the stratigraphy including depths of strata, content, soil textures (Soil Survey Staff 1975), and soil colors (Munsell Color 1975). Finally, all Phase II fieldwork should be conducted on a grid system, which is either tied to a permanent local environmental feature (e.g., concrete and metal datum point, standing building) or to GPS coordinates produced using a high-precision GNSS with centimeter-level accuracy (ideally less than 10cm of error). This practice will allow later researchers to relocate the test areas.

Analysis

Analytical studies conducted as part of Phase II investigations should be geared toward the evaluation of an archaeological property's eligibility for the National Register. This work must entail 1) the interpretation of site activities, functions, time span, and historic contexts; and 2) the study of research questions dealing with the resource's local or regional significance. Initial analytical activities should be the identification and classification of all artifacts and features according to explicit procedures and using the best current standards of archaeological knowledge. **Report authors should effectively employ the use of summary tables of artifacts, as well as bar charts or other illustrations to present research findings** (see Chapter II sidebar examples and FIGURE 3). Again, a printout of the full artifact catalog as an appendix is not a substitute for illustrative tables and graphs advancing one's analytical conclusions.

More detailed analyses at the Phase II level should include, whenever possible, the dating of a sample of archaeological components from good contexts with chronometric techniques (e.g., radiocarbon, dendrochronology, thermoluminescence, etc.). In the absence of adequate specimens for these procedures, one should date artifacts by comparison with previously dated, standard classes in combination with relative dating techniques. To examine site activities and functions, archaeologists should use appropriate techniques such as the analyses of artifact morphology, use-wear, residues, spatial patterning, and raw material sources. Interpretive power will, of course, be largely dependent on other comparative, his-

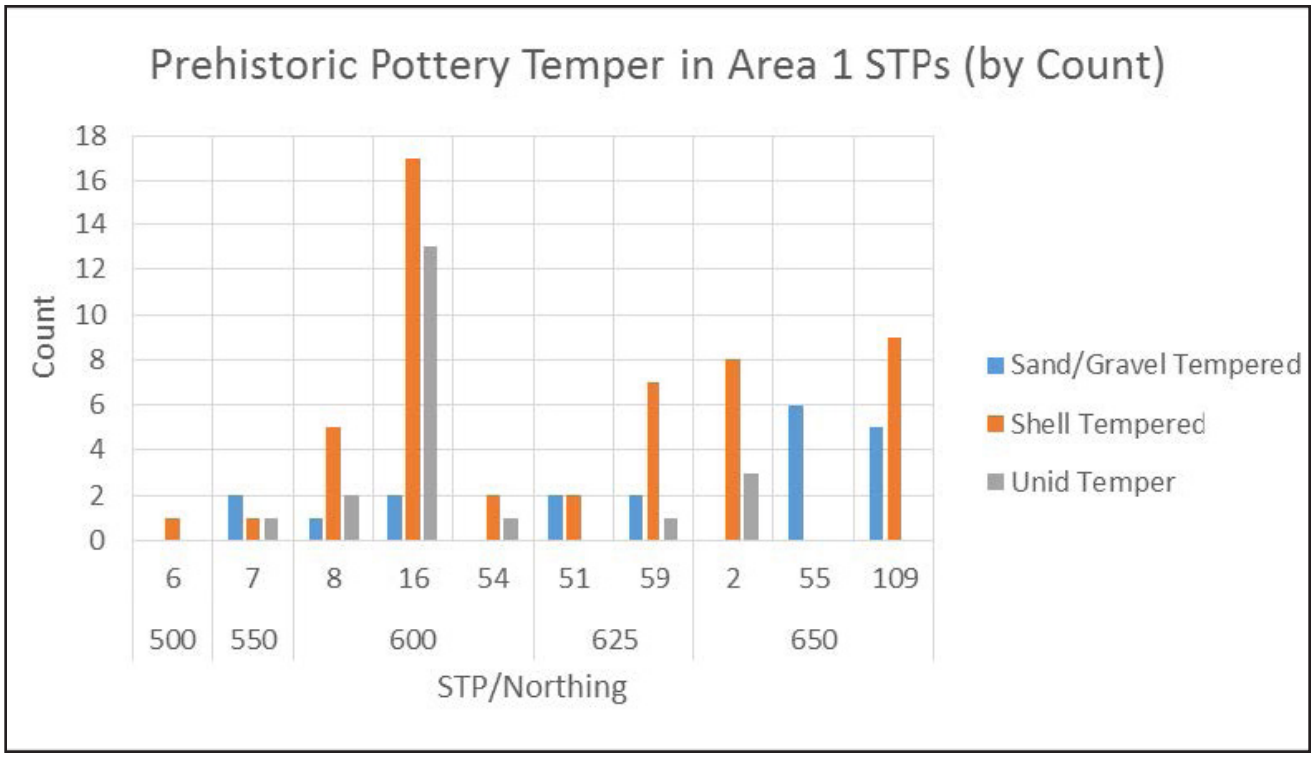


FIGURE 3 *- Analytical Example: A Comparison of Different Precontact Pottery Tempers in all Area 1 STPs at 18AN881 (Sperling et al. 2017: Figure 68).*

torical, ethnographic, and experimental archaeological studies. Additionally, the flotation of soil samples is important for identifying micro-flora and fauna and for examining the spatial patterns of minute archaeological materials (e.g., micro-debitage). While obviously not all soils from a Phase II project can be floated, archaeologists should give careful consideration to how and when to collect flotation samples during the project design phase.

Project archaeologists should develop, on a case-by-case basis, a program of specialized analyses for the refinement of historic contexts and the investigation of particular research questions dealing with local and regional site significance. For the examination of resource significance (and integrity), however, some general analytical activities should include:

1) detailed soil and taphonomic studies;
2) stratigraphic comparisons;
3) estimating artifact and feature frequency for the archaeological property as a whole;
4) cross-mending or refitting of artifacts and minimum vessel analysis, when possible; and
5) comparisons of the subject property with other known resources with similar contexts.

The final components of Phase II analyses are less mechanical and include the formal evaluation of significance of a subject archaeological property and the determination of project effect. Assessments of significance are considerations of all the available data and interpretations of the archaeological resource with respect to the National Register Criteria for Evaluation (36 CFR § 60.4):

> "The quality of significance in American...archaeology...is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting,

materials, workmanship, feeling, and association and...

A) that are associated with events that have made a significant contribution to the broad patterns of our history; or

B) that are associated with the lives of persons significant in our past; or

C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) that have yielded, or may be likely to yield, information important in prehistory or history."

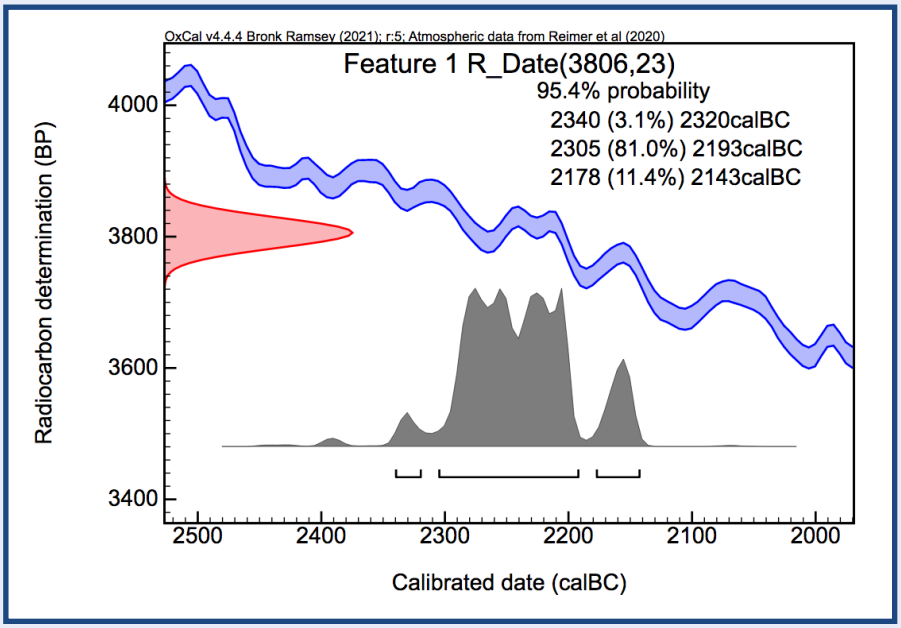
While those archaeological resources that are significant most frequently meet Criterion D (information potential), it is necessary for evaluators to examine all four criteria and appropriate criteria considerations. Evaluation should also include consideration of above-ground features (buildings and structures, standing ruins, and landscape features) and must consider whether a site might contribute to an existing or potential NR district. An example of an archaeological property in Maryland which meets several National Register criteria is the Simpsonville Stone Ruins (l8HO80), a district with a concentration of late eighteenth through early twentieth century mill-related features. The archaeological remains of this village reflect the importance of mills in the economic development of Howard County (Criterion A); include structures that embody the earliest development of mill technology (Criterion C); and demonstrate the capacity to yield important information on the agricultural, architectural, cultural, and economic themes in the State Plan (Criterion D). Additional information on the evaluation of National Register eligibility is found in 36 CFR § 60.4 and NPS (2020). Some of the numerous other sources on the evaluation of archaeological significance are publications by Barnes et al. (1980), Butler (1987), Dunnell (1984). Glassow (1977, 1985), Hardesty and Little (2009), King (1985), Lees and Noble (1990), Leone and Potter (1992), Moratto and Kelly (1978) , Raab and Klinger (1979), Schiffer and Gumerman (1977), Sharrock and Grayson (1979), and Tainter and Lucas (I983).

It is unnecessary to complete official nomination forms for the National Register as part of Phase II compliance projects. The recommendation regarding an archaeological property's eligibility for the register is generally sufficient. However, when an archaeological property is found to be eligible for the National Register, one does need to determine the effect of the given project (undertaking) on the significant resource. The ACHP has described the criteria of effect and of adverse effect at 36 CFR § 800.9. When considering project effect, archaeologists should discuss with their clients and involved agencies possibilities of eliminating or reducing impacts (e.g., through project redesign to avoid sites).

Reporting

Following the analysis of archaeological resources, researchers must prepare complete draft and final reports on all of the Phase II activities. Chapter VII below contains standards and guidelines for these reports, copies of which must be submitted to MHT's Office of Preservation Services along with a Mandatory Report Checklist. Additionally, Chapter VI and the *Technical Update* it references discuss the requirements for processing and curation of the resulting collections (including artifacts and associated records).

Radiocarbon Dating



The best materials to radiocarbon date are **short-lived or annual plant remains**, like seeds, nutshells, and twigs, from a secure archaeological context. Due to the *old wood effect*, dating wood charcoal is only recommended if short-lived or annual plant remains are not present. Additionally, field archaeologists should be careful not to combine charcoal from throughout a stratum or feature in order to obtain enough material for a usable sample. Doing so produces unreliable results. When dating shells, animal bones, or cooking residues, marine or freshwater reservoir effects must be considered and the appropriate calibration curves applied.

The basic radiocarbon data that ***MUST*** be reported are 1) the radiocarbon lab number, 2) the sample material type and 3) the radiocarbon age in radiocarbon years before present (RCYBP) with the standard measurement precision of ±1σ. If also including calibrated dates, then calibrated dates should be indicated as cal BP, cal BC/AD, or cal BCE/CE. The calibrated date should be reported with its measurement precision as either ±1σ (68%) or ±2σ (95%). The calibration curve used to calculate the date should also be reported. Calibrated radiocarbon dates should ***ALWAYS*** be reported as an age range, rather than a mean and standard error (or even worse, the center of the calibration intercept). In addition to in-text discussions of radiocarbon dates, it is also standard practice to report dates in a table format such as in the example below, especially when multiple dates are obtained or compared. Original C-14 lab reports should always be included as appendices to the larger project report for reference.

DirectAMS Code (D-AMS)	Context	Material	Radiocarbon Age (RCYBP)	1σ Error	Calibrated Date (BC/AD) 2σ Range
044409	Feature 1	*Carya spp.* Nutshell	3806	23	2340-2143 BC
044410	Feature 2	*Carya spp.* Nutshell	3837	26	2454-2200 BC
044411	Feature 3	*Carya spp.* Nutshell	3994	22	2573-2467 BC
044412	Feature 4	*Carya spp.* Nutshell	3899	22	2465-2298 BC
044413	Feature 6	*Carya spp.* Nutshell	524	18	AD 1400-1435
044414	Feature 9	*Carya spp.* Nutshell	363	18	AD 1458-1631
044415	Feature 10	*Carya spp.* nutshell	3788	24	2292-2140 BC

Dates calibrated via OxCal14.4 (Bronk Ramsey 2009) using IntCal20 (Reimer et al. 2020).

Old Wood Effect: *error introduced into radiocarbon dating when utilizing wood or charcoal from long-lived tree species that might predate the use of the wood as fuel or construction materials by centuries.*

IV *Treatment (Phase III)*

Goal

The goal of treatment for compliance projects is to avoid, minimize, or mitigate an undertaking's adverse effects on an archaeological property listed in or determined eligible for inclusion in the National Register of Historic Places. Additionally, treatment objectives may incorporate the promotion and enhancement of archaeological properties through education and interpretation. Adverse effects may include the destruction or substantial alteration of a significant archaeological property or the property's transfer out of federal/state ownership without protective restrictions. Treatment measures may entail preservation in place, recovery of important data, destruction without recovery of the significant archaeological property(s), or a combination of those measures. Other innovative treatment measures may include nominating a site to the National Register of Historic Places, developing an historic preservation plan, or implementing an archaeological resource training or interpretation program. In Maryland, the various activities that comprise recovery are grouped together under the designation Phase III Archaeological Investigation/Data Recovery.

Process

The specific treatment measures selected for a given undertaking are negotiated between the pertinent agency(s), MHT, the Advisory Council on Historic Preservation (if the project is subject to Section 106), and other involved parties (such as the project sponsor, applicant, and property owner), as appropriate. The involved federal or state agency is ultimately responsible for determining an undertaking's treatment measures. MHT and the ACHP fill an advisory role in the consultation process. Often the negotiation process concludes with the consulting parties executing a formal Memorandum of Agreement (MOA) for the undertaking (pursuant to 36 CFR §§ 800.5 & 800.6). The MOA includes stipulations specifying the agreed-upon treatment measures. Execution of the MOA demonstrates that the agency has provided MHT and the ACHP (for Section 106) with an opportunity to comment and has taken into account the undertaking's effects on historic properties.

The agency should not proceed with implementing the treatment measures until the consultation process is complete and the MOA is signed, if applicable. Commencement of treatment in advance of review completion may foreclose MHT's or the ACHP's opportunity to comment on the undertaking's effects.

Treatment measures are decided on a case-by-case basis with stakeholders. In determining appropriate treatments for a given historic property, the consulting parties must thoroughly weigh the property's research value and characteristics, which make it eligible for the National Register against the goals of the undertaking itself and other pertinent societal needs. The consulting parties must carefully consider the standards and principles contained in the sources of technical information listed on the next page in reaching their treatment decision(s).

Sources of Technical Information

Additional guidance and technical information on treatment measures and the development of agreements may be found in the following sources:

- *Section 106 Archaeology Guidance* (ACHP 2009)
- *Guidance on Agreement Documents* (ACHP 2015)
- *The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs (Section 110)* (NPS 1998)
- *Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation* (NPS 2003)
- *Secretary of the Interior's Archeological Documentation Guidelines* (NPS 2020)
- *The Archeological Sites Protection and Preservation Notebook* (U.S. Army Corps of Engineers 1992)
- *Advisory Council on Historic Preservation Policy Statement on Regarding Treatment of Burial Sites, Human Remains and Funerary Objects* (ACHP 2023)

It is essential for agencies to evaluate a project's effects on historic properties early in project planning when the widest range of project alternatives is open. Early consideration and planning will allow adequate time to effectively evaluate all treatment measures, conclude consultation, and implement the selected treatments well in advance of construction.

Preservation in Place

Generally, the most desirable treatment option for archaeological sites is preservation in place. Preserving the widest range of archaeological properties will ensure the survivability of these non-renewable resources for future generations to research, interpret, and appreciate. It is impossible to predict what information will be considered valuable in the future or what new techniques will be available to retrieve and analyze data. When practical, preservation in place is the preferred treatment, and it is often the most cost-effective measure.

Preservation may be achieved in several ways: avoidance, protection, and acquisition of protective easements. Preservation treatments should incorporate measures to protect the archaeological property from natural deterioration, vandalism, and other potential impacts, as appropriate, and include mechanisms to ensure its preservation in perpetuity (as feasible, given an agency's ownership, jurisdiction, or control of the archaeological property). Generally, sites slated for preservation should not be extensively excavated, but only receive limited testing as necessary to determine the property's National Register eligibility and site characteristics.

The following sources, in addition to the US Army Corps of Engineers' notebook listed above, contain further specific guidance regarding site avoidance, stabilization, and protection measures:

- *Filter Fabric : A Technique for Short-term Site Stabilization*. (Thorne 1988)

- *Intentional Site Burial; A Technique to Protect Against Natural or Mechanical Loss*. (Thorne 1989)

- *Revegetation: The Soft Approach to Archaeological Site Stabilization*. (Thorne 1990)

- *Site Stabilization Information Sources*. (Thorne 1991)

Site Avoidance

One form of preservation in place is avoidance. It is often feasible to avoid impacting archaeological properties through redesign of a project. It may be possible to reroute a proposed road or utility corridor alignment to bypass an archaeological site. Projects may be redesigned to maintain archaeological properties within protected open spaces (such as a wooded buffer, median, or recreational area). Changes in construction techniques may also achieve site avoidance, such as redesigning a shore erosion control project to entail fill and vegetative planting instead of bank grading and structural improvements. FIGURE 4 illustrates how a Late Archaic short-term resource procurement site was avoided and preserved in place during a stream restoration project.

In certain instances, it may be feasible to bury an archaeological property using filter cloth and clean fill. For example, sites may be buried beneath the construction limits of a new parking lot or interchange. However, site burial methods should include exercising care to limit potential compaction and prevent changes in soil chemistry and structure. In addition, burial practices should include measures to provide potential access to the site for future research. For instance, installing a permanent datum or reference points in the site vicinity will facilitate the site's relocation for future study.

Protection

Site protection and stabilization efforts may be employed to enable preservation in place by shielding the resource from future damage inflicted through natural and human forces. Protective measures may be temporary during project construction, or may encompass permanent treatments. Such measures may include fencing, routing of construction activities and staging areas to prevent inadvertent disturbance, explicit resource protection measures in contractor specifications, berms, site stabilization efforts to prevent erosion or deterioration of exposed features and elements, vegetative planting to screen soil exposure, signage, and routine law enforcement patrols or other types of monitoring to deter vandalism.

Easements/Covenants

Although avoidance and protection enable site preservation in place, these measures do

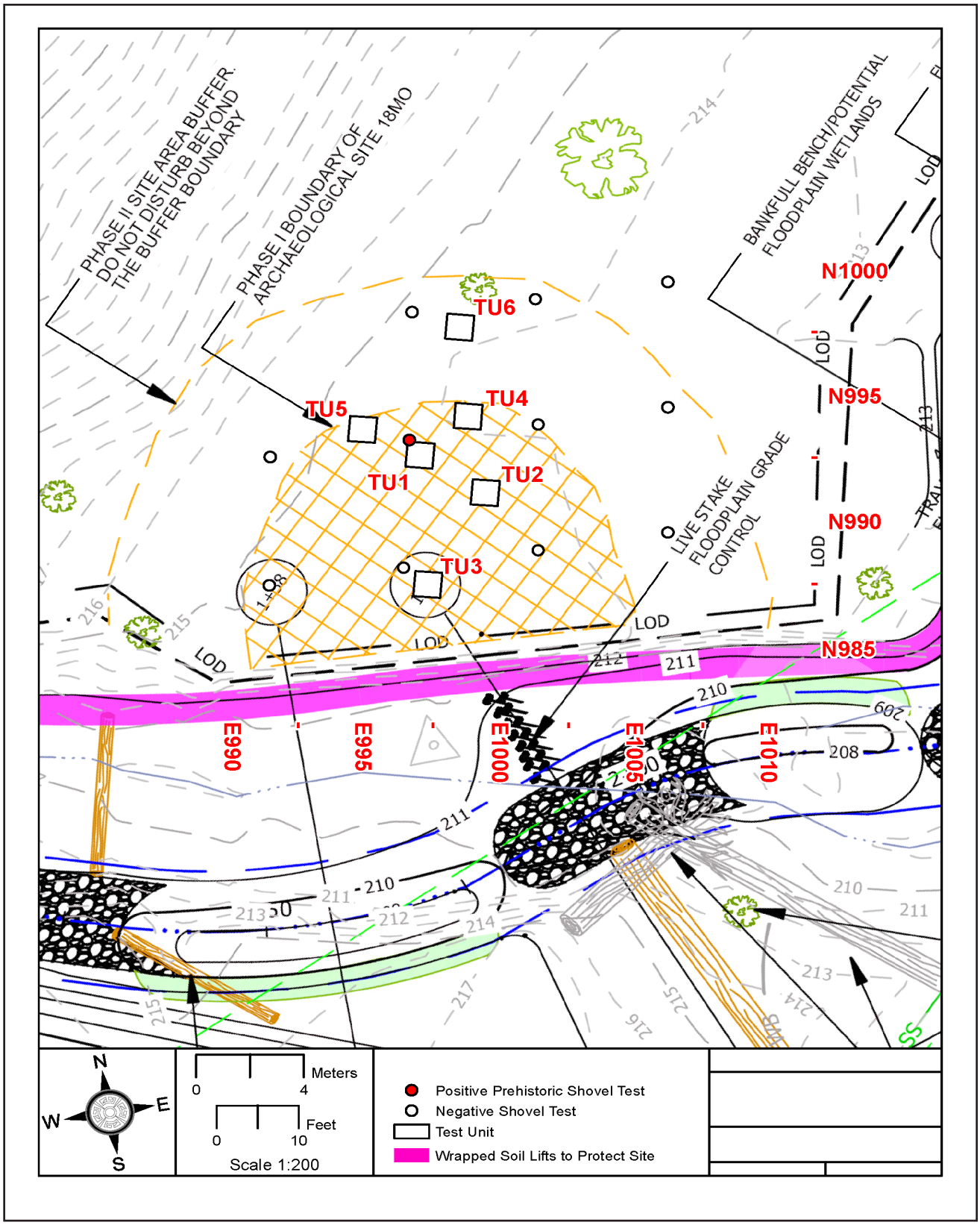


FIGURE 4 *- Preservation through site avoidance at a Late Archaic resource procurement site in Montgomery County, MD (courtesy of NAVFAC Washington and NSA Bethesda, Hornum and West 2022: 19).*

not guarantee the long-term and perpetual safety of the resource. An easement is a legal instrument designed to protect and preserve a historic property without conveying or transferring ownership of the property. MHT currently requires term (i.e. time-limited) easements under its financial incentive programs, but most gift easements initiated by the property owner are designated as "in perpetuity"; meaning that their terms pass from one property owner to the next and do not expire. Perpetual (gift) easements offer the strongest protection for archaeological sites. Such protection cannot be found on a permanent basis in any other programs, such as National Register listing or compliance.

Easements as a treatment measure are most frequently employed when a historic property is transferred out of federal or state ownership and therefore no longer protected by the provisions of federal and state laws. A property that is transferred with appropriate easement/covenant language will be afforded protection and proper care in perpetuity. MHT has an active easement program and currently holds easements on hundreds of properties encompassing thousands of acres throughout Maryland. Under easement terms, the landowner agrees to give up rights to develop most or all of the property and agrees to perform a minimum level of maintenance to the historic property. As the easement holder, MHT agrees to monitor the property to ensure compliance with the terms of the easement. Each easement is negotiated between MHT and the landowner/donor and is tailored to suit the specific needs and characteristics of the given historic property. For donations of gift easements, the property owner/donor may be eligible for certain federal income tax, estate, inheritance, gift, and property tax incentives.

For additional information on the easement program or copies of MHT's standard easement, contact MHT's Office of Preservation Services (***MHT Staff Directory***).

Owner Requests for Archaeological Site Protection Under State Law

Significant archaeological sites on private property can enjoy all the protections afforded to state-owned sites through an important provision of Maryland's historic preservation law, pursuant to MD State Finance and Procurement Code § 5A-345. For the state to grant this request, two requirements must be met:

1) the owner must petition MHT in writing to apply the provisions of state law relating to the protection of historic properties on state land or in caves to that portion of the owner's land containing the site; and

2) MHT must determine that the site is eligible for listing in the National Register of Historic Properties and warrants such protection.

Once these requirements are met, the site enjoys all of the protections that any site on state property or in a cave would be afforded.

The most important protections include:

- ***A site cannot be disturbed or excavated without a Terrestrial Archaeology Permit approved by MHT.***

- ***Only qualified persons may conduct archaeological excavations at the site.***

• Persons convicted of illegally disturbing or destroying the site can be subject to fines up to $1,000 and imprisonment for a term of up to 30 days for each day a violation continues.

• Illegally obtained artifacts can be appropriated by the state and may be returned to the rightful owner.

• Because the land is protected in the same manner as state-owned land, the owner has the full assistance of state law enforcement and other authorities in protecting sites and in prosecuting looters or other violators.

It is important to note that the owner of any site protected through the owner request mechanism of state law is not restricted or prevented in any way from personally developing or using the land, unlike easement protections. The owner is free to carry out activities that may affect the site and they do not need to obtain an archaeological permit to do so. This may be considered an advantage to the owner. However, the owner will not realize the potential tax benefits that generally accrue from the donation of a preservation easement.

For further information regarding the owner request procedures, contact MHT's Office of Archaeology (***MHT Staff Directory - see Chief Archaeologist***).

Other preservation institutions may offer similar site protection benefits. Transferring a property to one of these private entities can ensure perpetual care and protection to the site, and may include monetary compensation or tax benefits to landowners. Landowners should be sure to conduct their own research into organizations, incentives, and restrictions prior to committing to any long-term agreements.

Data Recovery

When in-place preservation is not feasible, the adverse effects to archaeological properties generally may be mitigated by recovering the property's valuable cultural information. **The purpose of data recovery is to retrieve and analyze the maximum amount of information from an archaeological property necessary to address important research topics.** Data Recovery *(Phase III Archaeological Investigation)* is accomplished through detailed archaeological excavation, recordation, background research, analyses, and reporting, performed in accordance with a well-defined and justified data recovery plan.

Data recovery should also contribute to broader historic preservation issues, such as developing and refining historic preservation plans or predictive models, applying and testing of state-of-the-art methods, and addressing professionally established research topics and priorities.

Data recovery involves a substantial commitment of time and funds and should be firmly based on sound background data, planning, and a valid research design. Data recovery must be preceded by appropriate background research, identification, and evaluation (usually accomplished during Phase I and II investigations), in order to understand the property's significant characteristics and data expectations. Efficient and cost effective measures should be employed to maximize retrieval of the data necessary to achieve the

Phase III Data Recovery plans should typically conform to the following:

• Excavations should be based upon an appropriate sampling unit for recording spatial data. Beneath the plowzone, the maximum individual unit size should be equal to or less than a 5 x 5 foot or 1 x 1 meter square sample unit, no matter how large the blocks based upon this sample unit ultimately become.

• If soil conditions are favorable, then at least one fourth of the excavated soil from non-features should be passed through 1/8" mesh hardware cloth to recover small archaeological materials.

• The soil from identified cultural features should be processed by flotation and/or water screening to generate materials to answer research questions.

• Precontact features should be radiocarbon dated, if datable carbon is available (See page 32).

• Soil science and geomorphology investigations should be conducted to help understand the natural processes that have affected a site.

• Archaeobotanical and zooarchaeological analyses should be undertaken whenever botanical and faunal materials are recovered.

• Residue analyses (protein analyses, starch grain analyses, phytolith analyses), geochemical analyses, and micro-wear analyses should be undertaken whenever suitable artifacts are recovered.

desired goals, yet minimize costs. The consulting parties determine the extent of recovery efforts on a case-by-case basis. Data recovery must be conducted in accordance with a comprehensive research design/data recovery plan, reviewed by MHT, the Advisory Council, and other consulting and interested parties, as appropriate. **Completion of an approved data recovery plan generally fulfills an agency's compliance responsibilities for an undertaking, unless unexpected discoveries occur during construction or broader agreement documents include requirements for additional work**.

All data recovery efforts must be guided by a thorough Research Design/Data Recovery Plan for the retrieval of significant information. The Advisory Council (for Section 106 projects) reviews substantive contents of the plan to ensure that the proposed research questions are viable and answerable based on the site's data expectations, the methods are appropriate, and the amount and areas proposed for investigation are reasonable for the given archaeological property and undertaking. **MHT may also request peer review of data recovery plans through the Maryland Advisory Committee on Archaeology.** This gubernatorially-appointed committee advises and assists the MHT Office of Archaeology and reviews policies, plans, rules, and regulations concerned with archaeological matters. The committee is established by Article 83B. § 5-624, of the Annotated Code of Maryland.

The general components of research designs appear in Chapters II and III. Although the research design establishes a framework for the data recovery efforts, it must also include an element of flexibility to allow modifications to the testing and analytical strategies based on field and research results. More specific comments on research strategies for data recovery efforts follow.

The objectives of Phase III archaeological investigations must include:

- basic description of the archaeological property under study and the characteristics which make it eligible for the National Register;

- maximum retrieval of important data relevant to the defined research questions from the archaeological property;

- testing and addressing explicitly stated pertinent hypotheses and research questions that provide valuable information on the property's local or regional significance, with valid justification of the hypotheses' and questions' importance and relevance;

- determining the property's characteristics and variability, including inter- and intra-site patterning; and

- public education/interpretation of the data recovery results.

The **Methods and Techniques** section of the plan should justify the research strategies planned to retrieve the maximum amount of data necessary to meet the study objectives. This section should also address methods to be used in background research, fieldwork, analyses, data management, and dissemination of results. Methods and Techniques should include a schedule and a justification of the proposed methodology's relevance to the research questions. Furthermore, the section should describe proposed treatment and disposition of the recovered materials and records and provide evidence that a qualified repository has agreed to curate the collection. Finally, it should discuss the proposed methods for informing the interested public about the project, making the results of the research available to the public, and involving the interested public in the data recovery, if feasible. If human remains or associated grave goods are expected during recovery, the plan should include provisions for obtaining necessary permits and for consultation with relevant Indian Tribes, descendants, or other interested parties, as required under federal, state, and local laws regarding the treatment and final disposition of materials. For additional information or guidance regarding human remains' issues, see Chapter IX or contact MHT's Office of Archaeology (***MHT Staff Directory - see Chief Archaeologist***).

Expected Results should rely heavily upon previous research reports (Phase I and II investigations) and other readily available documents, in order to discuss the quantity, age, condition, and other general characteristics of the archaeological materials and features anticipated in the study. The anticipated results must be applicable to the proposed research questions and hypotheses.

In addition to the above elements, the plan should also discuss provisions for regular status reports, meetings, and site visits to keep agency managers, MHT, and other interested parties informed as work progresses.

Additional technical information for developing archaeological data recovery strategies is available from the sources listed above.

Archival and Background Research

For Phase III investigations, the main purpose of **Archival and Background Research** is to augment information on a previously identified archaeological property in order to ad-

dress the desired research questions/hypotheses. Research should focus on summarizing previous work on the resource, analyzing existing collections from the property, refining the proposed research questions/hypotheses, and clarifying the methodologies necessary to address those research issues. As appropriate, investigators should conduct documentary research, informant interviews, and collection studies to achieve the desired study objectives utilizing the sources listed in Chapters I and II and other materials.

Field Studies

In order to achieve the goal of maximum data retrieval, **Phase III fieldwork strategies** generally employ excavation of a substantial portion or sample of the archaeological property. However, ***total*** excavation of the property is generally not appropriate or advisable, except in extraordinary circumstances. The precise amount and type of Phase III archaeological and ancillary field studies must be determined on a case-by-case basis based on the nature of the archaeological property under study, the geomorphological characteristics of the project location, the research questions, and the undertaking itself. There are no minimum sample sizes applicable to data recovery. If the undertaking will not totally destroy the archaeological resource, field recovery should focus primarily on the site areas slated for impact. However, limited sampling outside the impact area may be necessary for accurate site interpretation and analyses. Studies outside the area of potential effects may only be feasible if the property under examination falls within the ownership, jurisdiction, or control of the involved agency for a given undertaking. A well-reasoned sampling strategy will maximize data retrieval and minimize costs.

As part of the field study, a permanent datum and grid should be established to facilitate future research at the site. Fieldwork strategies generally utilize intensive excavation of close interval shovel test pits and test units, as described in Chapters I and II, and accompanying recordation and data retrieval techniques. Test unit excavations often focus on opening large block areas in order to expose and examine activity areas, architecture, and patterns of site use. FIGURE 5 illustrates the testing strategy of Phase III excavation blocks at the Jackson Homestead site (18MO609). In some cases, use of mechanical equipment (Gradall, backhoe, etc.) is acceptable and advisable to remove an overburden of deposits (such as modern fill, plowzone, or non-artifact bearing alluvial soils) above desired test levels. However, heavy equipment should only be employed following adequate manual sampling of the deposits slated for mechanical removal. Use of mechanical equipment is decided on a case-by-case basis, taking into account site characteristics. When mechanical equipment is utilized, it must be closely supervised by a qualified archaeologist with the authority to stop the mechanical excavation, in order to ensure that archaeological resources are not inadvertently disturbed. Heavy equipment should only be used in dry and stable ground conditions, to prevent destruction of underlying archaeological deposits.

Phase III fieldwork may also contain a formal recordation component for archaeological properties which contain substantial structural or architectural remains (such as foundations, earthworks, ruins, industrial complexes). During the negotiation process, the consulting parties agree on who will determine the level and kind of recordation documentation necessary for the project. Generally, the parties agree that the agency will contact the Historic American Building Survey/Historic American Engineering Record (HABS/HAER) Division of the National Park Service (for federal projects) or MHT's Office of Research, Survey and Registration (for state projects) to determine the recordation efforts appropriate for the resource involved.

FIGURE 5 *- Phase III excavation blocks at 18MO609, the Jackson Homestead (Furgerson et al. 2011: Figure 90).*

Documentation may include recording significant historical information, architectural plans and features, photogrammetry, engineering details, landscape elements, and acquiring significant oral historical information related to the historic property. Furthermore, the documentation results are deposited in a permanent repository such as the Library of Congress or the Maryland State Archives. Figure 6 represents a plan view drawing of structural remains associated with the Newtown Manor House at 18ST16 in St. Mary's County. For further technical information on recordation refer to the *Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation* (Dickenson 1983: 44730- 44734).

Analysis

Analysis is an integral component of Phase III investigations and is essential for interpreting the fieldwork results and fulfilling data recovery goals. Phase III analytical studies should be directed towards maximum retrieval of information from excavated materials in order to address defined research questions. This work must entail 1) the interpretation of site activities, functions, time span, and historic contexts; and 2) the study of the research questions/hypotheses addressing the resource's local, regional, or national significance. Initial analytical activities should involve the identification and classification of all artifacts and features according to explicit procedures and using the best current standards of professional knowledge. More detailed specialized analyses at the Phase III level should include the items discussed in the sidebar on page 39, as appropriate to the resource un-

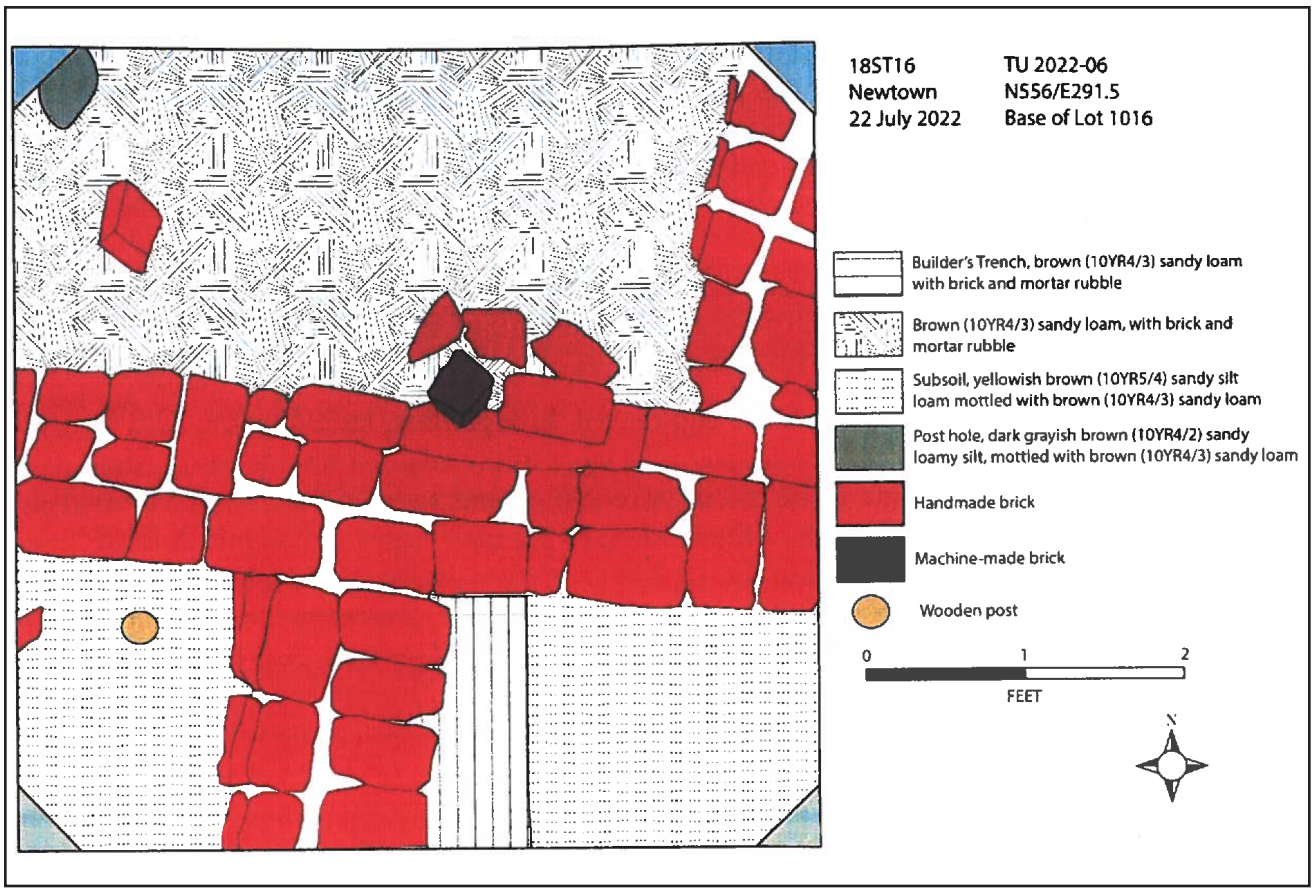


***FIGURE 6** - Plan view of TU 2022-06 brick foundations, base of Stratum 5 (Masur and Lenik 2023: 213).*

der study. Phase III analyses should also integrate the newly acquired data with the results of previous Phase I and II investigations, in order to reliably interpret the site as a whole.

Public Education/Interpretation

Phase III investigations must include measures to inform the general public and interested parties about the results of data recovery efforts. Since Phase III investigations essentially mitigate adverse effects to a significant archaeological property and are often undertaken at considerable public expense, **the public should receive tangible evidence of the research results**. Chapter IX presents a more detailed discussion of public interpretation efforts. The appropriate public education program for a given project should be developed in consultation with MHT.

Reporting

Following the analysis of archaeological resources, researchers must prepare complete **draft and final reports** on all of the Phase III activities. Chapter VII below contains standards and guidelines for these reports, copies of which must be submitted to MHT's Office of Preservation Services (along with the Mandatory Report Checklist) for review. Additionally, Chapter VI and the *Technical Update* it references discuss the requirements for processing and curation of the resulting collections (including artifacts and associated records).

Acceptance of Loss

In rare instances, preservation in place or recovery may not constitute viable treatment

options for a given undertaking or archaeological property. An undertaking which entails life-threatening or serious health and safety issues may be required to meet overriding public needs which supersede the project's preservation value(s). Also, if archaeological testing demonstrates that a significant archaeological property does not have further data which may be used to address valuable research questions, then recovery is not an appropriate treatment option or justifiable expense.

Acceptance of loss is a serious decision and must be carefully considered by all of the consulting parties. The parties should exhaustively consider all possible research and interpretive values the property may possess, thoroughly evaluate all feasible treatment measures, and seek the views of outside experts in reaching a conclusion. The decision for destruction without recovery must be well justified. If acceptance of loss is the selected option, the parties should consider implementing alternative treatment measures to mitigate the destruction of the resource.

Other Treatment Measures

Although preservation and recovery are the most common treatment measures employed to mitigate adverse effects on archaeological properties, MHT encourages and welcomes innovative solutions to historic preservation problems, if they achieve mitigation goals. Such solutions may be incorporated with more traditional treatment measures or employed alone and may be used to mitigate "acceptance of loss" situations. Alternative treatment measures should be thoroughly considered and discussed with MHT and the Advisory Council (for federal projects) prior to implementation.

Examples of alternative treatment options include:

- Development of an historic preservation plan/cultural resource management plan for a specific property, facility, or geographic region (See Chapter V).

- Development, testing, and refinement of a predictive model for archaeological site locations of a particular time period, type, or geographic region.

- Initiating cultural resource preservation, planning, education, or interpretive programs for agency staff or the general public.

- Acquiring a perpetual historic preservation easement on a significant archaeological property to compensate for acceptance of loss of a similar site type.

- Preparing a National Register nomination on an individual historic property, district, or a multiple resource nomination.

- Synthesizing existing archaeological data pertaining to a particular geographic region, time period, or resource type.

Planning for Unexpected Discoveries

Although completion of a data recovery program or other treatment measure performed pursuant to an MOA fulfills an agency's historic preservation responsibilities, it is advisable to develop a plan for addressing unexpected discoveries that may arise during construction. Construction may encounter human remains or expose significant features that

An Example of Creative Mitigation for an 18th Century Farmstead

In 2017, AECOM conducted cultural resources investigations at the Brumbaugh-Kendle-Grove Farmstead and archaeological site 18WA496 in accordance with the terms of a Memorandum of Agreement (MOA) between the Federal Aviation Administration, Washington County, and MHT as part of an expansion project for the Hagerstown Airport. The investigations included archaeological survey and excavation, geophysical survey, architectural history survey and recordation, and contextual historical research relating to the development of the Brumbaugh-Kendle-Grove Farmstead. This farmstead was first settled by Jacob Brumbaugh just a few years after his arrival in Philadelphia from Germany in 1750. Architectural research suggested initial construction of the homestead in the Flurküchenhaus (translated corridor-kitchen house) style. Flurküchenhaus represents a Germanic building tradition from the colonial era that quickly gave way to more English styles of construction. The investigations ultimately resulted in the identification of three separate building phases and 106 historical features including structural foundations, cisterns, pathways, a privy, and landscape features dating from the mid-18th century to present-day. Feature and artifact analysis allowed archaeologists to explore what life was like for those who lived on the farm and how the farm functioned within the larger community – enabling the development of broader interpretations associated with the household economy, cultivation, and the adoption of innovative farming techniques. Beyond the architectural survey and recordation activities, and the archaeological data recovery, the mitigation for this project also included the salvage of architectural materials from the standing structures, the development of a series of web pages hosted on Washington County's website detailing the site's history and the results of the investigations, and the production of artistic renderings of the mid 18th-century log dwelling.

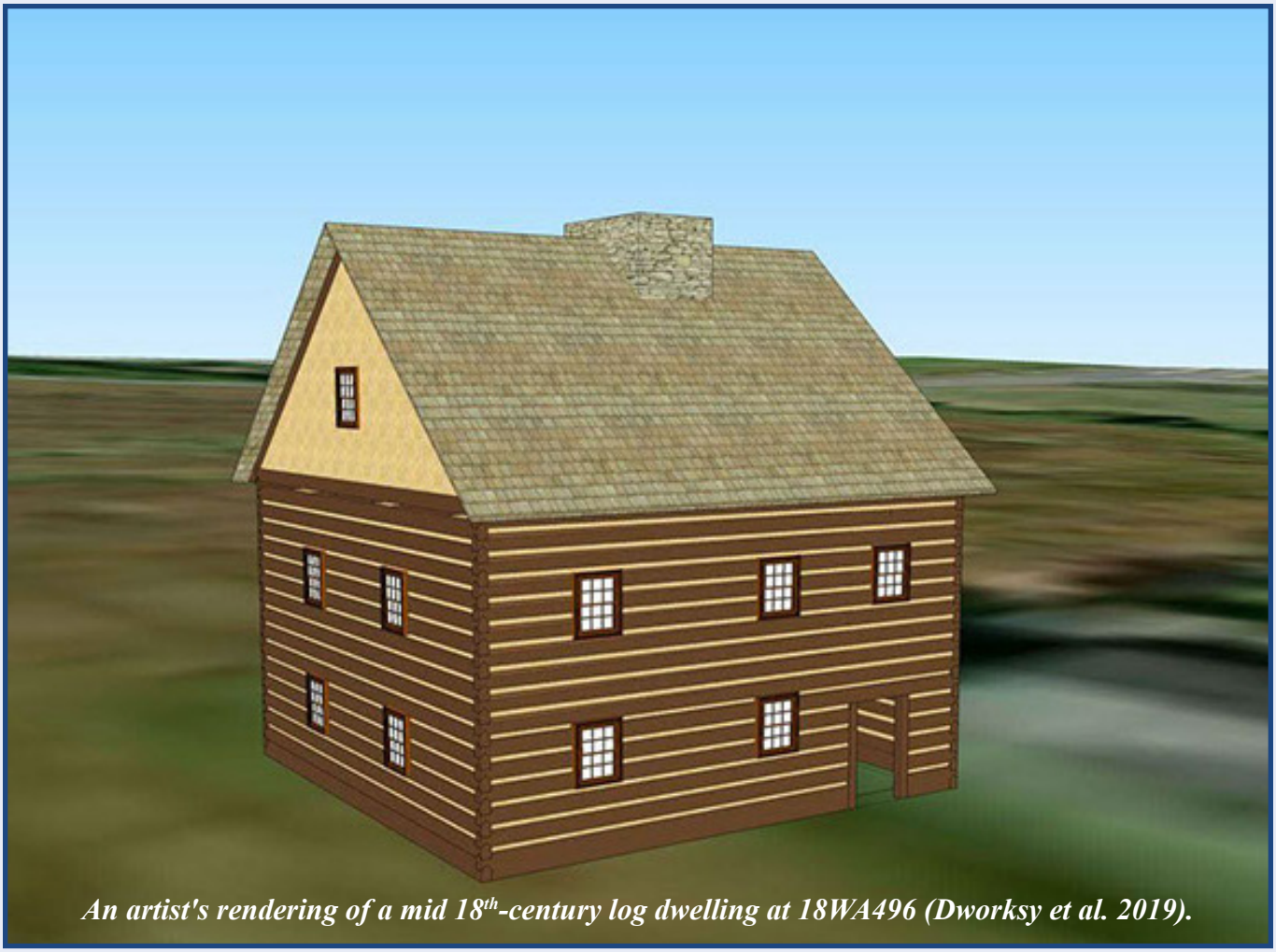
For more information see:

Dworksy, Joel G., Ingrid Wuebber, Brian Albright, Elisabeth LaVigne, Jeremy Koch, Matthew Harris, Carolyn Horlacher, Meta Janowitz, Teagan Schweitzer, and Madelaine Penney
2019 *Phase I–III Archaeological Investigations, Brumbaugh-Kendle-Grove Farmstead (18WA496), Washington County, Maryland*. AECOM, Burlington, NJ. Report on file at MHT, Crownsville.

were not included in the data recovery program or were inaccessible for recovery. The discovery plan may be included as a stipulation of the MOA or a component of a data recovery program. Having an approved plan in place enables the agency to proceed with the undertaking in a discovery situation by following the plan actions and avoiding potential delays. The Advisory Council's regulations (36 CFR § 800.11) include provisions for considering properties discovered during project implementation.

Discovery plans generally include provisions for promptly considering the unanticipated discovery of human remains and significant archaeological properties discovered during construction. The plan may incorporate professional archaeological monitoring during project ground disturbing activities with associated reporting, recording, and recovery of major features or artifacts uncovered where practical. **However, monitoring does not substitute for proper identification, evaluation, and treatment of archaeological properties during project planning.** The plan may also include provisions for expedited consultation with MHT to determine an appropriate course of action for the discovered resource.

In the absence of an approved discovery plan, an agency must provide the Advisory Council (for federal projects) and MHT (for state projects) with an opportunity to



An artist's rendering of a mid 18th-century log dwelling at 18WA496 (Dworksy et al. 2019).

comment when a previously unidentified property that may be eligible for inclusion in the National Register is discovered during project implementation.

Federal and state historic preservation laws do not require the agency to stop **ALL** work on the undertaking during discovery situations. However, the agency should make a good faith effort to avoid or minimize harm to the historic property (e.g. the resource being immediately impacted) until it has completed consultation or implementation of the discovery plan provisions.

If human remains are discovered during construction, those resources warrant exceptional care and consideration. See Chapter IX for a more detailed discussion regarding the treatment of human remains.

For discovery situations occurring on MHT grant, loan, or easement projects, the project sponsor or property owner should contact BOTH the Office of Preservation Services and their grant/program monitor immediately for appropriate guidance on how to proceed. Construction should not continue in the area of the discovery until MHT agrees to the resumption of work.

V *Site Registration and Other Cultural Resource Investigations*

Introduction

Phase I, II, and III archaeological investigations are the most frequently undertaken types of archaeological study in Maryland. Survey and reporting guidelines for these strategies are outlined in Chapters II through IV. However, a critical task must be completed prior to submission of the final report: the registration and updating of all newly identified and re-examined archaeological sites in the Maryland Inventory of Historic Properties. This process usually begins in consultation with MHT's Archaeological Registrar, who assigns new site numbers and oversees the process outlined in this chapter.

It should be noted that not all identified archaeological sites will be investigated with the traditional survey strategies outlined in the preceding chapters. Other types of cultural resource investigations exist which may be better suited to a particular project or archaeological resource. These other types of investigations include:

- archival studies;
- assessments of archaeological potential;
- cultural resources management plans or historic preservation plans; and
- academic research.

Additionally, properties subject to MHT grants, loans, and easements may have different or additional requirements that must be met in order to remain in good standing. Prior to initiating an alternative method of investigation, the study sponsor should consult with MHT for guidance on the appropriateness of the proposed investigation and methodology. This chapter provides more information on these types of investigations.

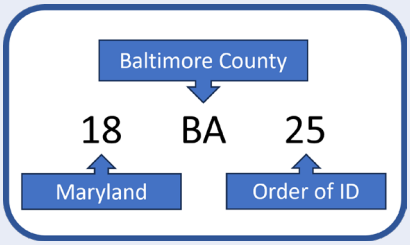
Site Registration

As the SHPO for Maryland, MHT compiles and maintains the Maryland Inventory of Historic Properties, under the authority of Article 83B, § 5-615, of the Annotated Code of Maryland. The Maryland Inventory is a broad-based catalogue of information on districts, sites, buildings, structures, and objects of known or potential value to the prehistory, history, terrestrial and underwater archaeology, architecture, engineering, and culture of Maryland. It is broadly divided into two sections: standing structures and archaeological sites. As of 2026, the Maryland Inventory includes over 48,000 architectural properties, and 15,000 archaeological sites. It is not an all-inclusive list but represents a record of all historic properties recorded with MHT to date. MHT adds numerous new historic properties to the Inventory each year.

There are separate Maryland Inventory forms and official number designations for the architectural and archaeological resources. All newly identified archaeological properties

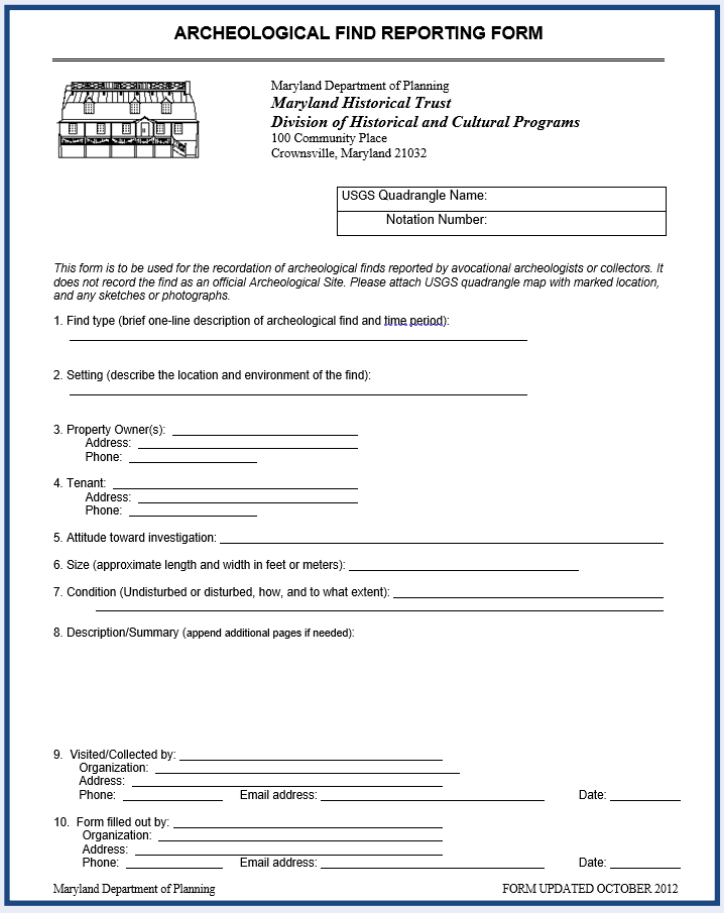
Assignment of Maryland Inventory (Archaeology) Numbers

All newly inventoried archaeological sites will receive a unique archaeological site number. Archaeological site numbers consist of three distinct parts: a one-or-two digit number relating to the state, two letters that indicate the county, and a number representing the order in which the site was identified. This system is called the Smithsonian Trinomial. For example, Site18BA25: 18 refers to Maryland (the 18th state when alphabetically listed), BA refers to the county (Baltimore County), and 25 represents the 25th site recorded in the county.



For an archaeological resource which does not qualify for official site designation, the Trust issues both Quad File and X-numbers.

Quad File numbers are assigned to a broad range of archaeological resources and finds which have not been investigated by a professional, but warrant notation. These may include locations visited by avocational artifact collectors, isolated finds, and locations where a resource is depicted on historic maps. Quad File numbers are assigned by the MHT Archaeological Registrar. **To assign a Quad File number, the Archaeological Registrar must receive, at minimum, a note regarding the resource and its location.** In addition, a submittal form is available online entitled *Archaeological Find Reporting Form*. This form as well as photographs are recommended, but not required.



ARCHEOLOGICAL FIND REPORTING FORM

Maryland Department of Planning
Maryland Historical Trust
Division of Historical and Cultural Programs
100 Community Place
Crownsville, Maryland 21032

USGS Quadrangle Name:
Notation Number:

This form is to be used for the recordation of archeological finds reported by avocational archeologists or collectors. It does not record the find as an official Archeological Site. Please attach USGS quadrangle map with marked location, and any sketches or photographs.

1. Find type (brief one-line description of archeological find and time period):

2. Setting (describe the location and environment of the find):

3. Property Owner(s): _____
   Address: _____
   Phone: _____

4. Tenant: _____
   Address: _____
   Phone: _____

5. Attitude toward investigation: _____

6. Size (approximate length and width in feet or meters): _____

7. Condition (Undisturbed or disturbed, how, and to what extent): _____

8. Description/Summary (append additional pages if needed):

9. Visited/Collected by: _____
   Organization: _____
   Address: _____
   Phone: _____ Email address: _____ Date: _____

10. Form filled out by: _____
    Organization: _____
    Address: _____
    Phone: _____ Email address: _____ Date: _____

Maryland Department of Planning FORM UPDATED OCTOBER 2012

X-numbers are assigned by the Maryland Archaeological Conservation Laboratory to artifacts submitted for curation, which are not associated with an inventoried site but can stand alone as valuable for research, education, or exhibit. An X-number can be assigned to a single artifact, or to a group of artifacts from one project. In the latter case, lot numbers can be assigned to individual specimens as appropriate. Provenience information for X-numbered lots is to be documented in project reports or catalogs. X-numbers are represented as a trinomial, just like a site number, but with an X included after the two-letter county designation; for example, 18BAX54. **To obtain an X-number, please contact the MAC Lab curation staff.** Decisions regarding whether or not to obtain an X-number should be made in consultation with the MAC Lab curation staff and the MHT archaeologists reviewing the project.

must be recorded on Maryland Inventory (Archaeology) forms and submitted to MHT for number assignment and entry into the Inventory. **MHT does not issue new site numbers prior to submission of a completed Maryland Inventory (Archaeology) form.** The Archaeological Registrar generally issues new site numbers within 30 days after receiving complete inventory documentation. Subsequent research on a previously identified archaeological resource requires completion and submittal of a new site form, with the "Check if update" box filled in or otherwise marked in the upper right corner of Page 1.

Archaeological sites are generally defined by a concentration of artifacts or features, or a combination thereof, which are likely to denote a cultural resource. To establish a boundary for archaeological sites manifested exclusively by artifacts, the recovery of a minimum of three items is generally needed, related either temporally or functionally and located within a spatially restricted area (a 300-square-foot area is suggested). However, even that definition is subjective, and dependent on rarity of a find, site integrity, and sampling method. Please contact the Archaeological Registrar for further guidance with respect to a specific site. Isolated finds, by contrast, are locations where a single artifact has been recovered with no apparent evidence of nearby features or associated artifact deposits. Important isolated finds are typically assigned a Quad File number (see sidebar above) rather than a site number. Again, consultation with the Archaeological Registrar is necessary.

Each site will require completion of the Basic Data Form. Other appropriate continuation forms may include:

- Prehistoric Data Form
- Historic Data Form
- Shipwreck Data Form

Blank forms that are not applicable to the site may be deleted from the submittal. To obtain a copy of MHT's current Maryland Inventory (Archaeology) form and instructions for filling it out, please visit the MHT website's ***Forms and Guidelines section*** and download 'Instructions for Completing the Maryland Inventory Archaeology Site Form' and the 'Maryland Inventory Archaeology Site Form'. This form currently downloads as a Microsoft Word document, but long-term plans include an online submittal process. Relevant maps and other attachments may either be embedded into the Word document or sent as separate .jpeg or .pdf documents. GIS files of site boundaries are greatly appreciated, if available . In addition, MHT appreciates submittal of Phase I survey area GIS files to the Archaeological Registrar, if available (See Chapter VIII discussing GIS data for more detail).

While there is general consensus about what constitutes an archaeological site, occasionally cases arise which must be evaluated on an individual basis, taking into consideration the context of the resource (e.g., low density sites, recent vintage resources, questions about site limits). MHT's Archaeological Registrar will provide guidance in making a decision as to what constitutes a site and which resources warrant a site number.

Archival Studies

Whether undertaking a phased archaeological study or a long-term management plan, an archival study should always be part of the methodology when investigating cultural re-

sources. An archival study focuses on the investigation of original materials and records housed in an institution or with an individual, family, or organization. Archival material can come in many different forms: manuscripts, photographs, letters, audio/video, diaries, artifacts, and more. These materials are original sources of information, unlike secondary sources that select, collate, and/or modify original sources.

A cursory examination of digitally available archival material may be practical before planning a visit to an archive. However, while digitization efforts have intensified over the last several years, it is still the case that many archival materials are only available for in-person visits to a repository.

Archival institutions can include:

- Government archives, such as the Maryland State Archives or the National Archives and Records Administration;
- University archives, such as the University of Maryland Archives;
- Museums, such as the Maryland Center for History and Culture;
- Historical societies, including state and local repositories; or
- Religious, corporate, or special collections.

This is a non-exhaustive list of resources that may be available for researchers. Depending on the research topic, it may be prudent for researchers to look outside the state of Maryland at other repositories. A more in-depth, but still incomplete, list of archive repositories

FIGURE 7: *The Maryland State Archives (SLOWKING4, GFDL 1.2, via Wikimedia Commons)*

is available in the *Guidelines* Appendices.

Although each archival study is unique and may require different materials or repository considerations, archival study reports should include the following:

- Description of the methods and theories utilized for conducting research;
- Description of the materials investigated;
- Discussion and analysis of the findings, to include a chronological narrative if applicable; and
- Conclusions from the findings and recommendations for further work.

Additionally, researchers should be familiar with copyright rules and archive restrictions prior to publication of an archival study. When completed thoroughly and accurately, archival studies are a helpful tool for archaeologists when preparing for or adding substance to any cultural resource investigation.

Confidentiality of Site Location Data

To protect archaeological resources, it has long been the policy of MHT to limit disclosure of the location of archaeological sites. Access to site location data is and should be restricted to professional archaeologists and those working under their direct supervision, with an exception for property owners, for sites on their property. We consider site location information sensitive, and our policy is to only share it with individuals who meet the **Secretary of the Interior's Minimum Professional Qualifications for Archaeology**. Proxy access for those working directly with an archaeologist may be arranged when (1) the proxy access is arranged by the requesting qualified archaeologist in advance, and (2) use of the information is to be by, or under the direct supervision of, the requesting qualified archaeologist. Legislative support for this position can be found in both the Public Information Act (State Government Article §§10-611 through 10-630) and the Maryland Historical Trust Act (particularly State Finance and Procurement Title 5A-323(c)).

Any public-facing documents submitted to MHT must not have specific locational information regarding archaeological sites. For examples of acceptable location descriptions, see Chapter VII.

Assessments of Archaeological Potential

For certain projects, an Assessment of Archaeological Potential (AOP) may be conducted prior to committing to a full Phase I archaeological survey to determine the necessity or extent of further archaeological work. **An Assessment of Archaeological Potential (AOP) is a research-based evaluation of the likelihood that as-**

yet unidentified archaeological sites might be present within a subject property.

The goal of an AOP is to locate, inventory, and predict the location of precontact and historic archaeological properties within a given area of potential effects, through the study of relevant archival documents, maps, and other sources. They also provide recommendations for additional actions necessary to complete a project's identification and evaluation efforts.

AOPs are similar to environmental and transportation studies, as they are most helpful during the project planning and review phases of development. They must be conducted in the planning stage of any project *before* any drafting, construction, or earthmoving in order to establish the need to avoid archaeological resources; this will save both money and time for property owners and developers.

These types of investigations are also especially helpful for large-scale projects in preparation for a full Phase I (see Chapter II) to narrow down the area of interest. Examples of large-scale projects that may benefit from an AOP include:

- A major transportation project which involves multiple alternates covering extensive acreage;
- A large-scale undertaking whose area of potential effects encompasses a broad expanse of land or water (ex. development or utility project);
- An undertaking which will entail multiple years of planning and will examine many potential alternates (e.g. wind farms); or
- Projects in urban areas (such as Baltimore, Frederick, Annapolis) that may need to take into consideration older deposits sealed under modern levels.

It is important to note that AOPs may not be used in lieu of formal consultation, and they should not be completed prior to coordination with the appropriate federal and/or state agencies. See Chapter I for more information on historic preservation consultation and when it should be initiated.

To fulfill the goals as stated above, AOPs should, at a minimum, address the following objectives:

- Identify inventoried sites in the study area, both archaeological and architectural;
- Describe the area's environmental characteristics and conditions;
- Describe the depth and extent of any ground disturbance in the study area (note – plowing is *not* considered disturbance);
- Discuss the project's potential effects on historic properties along with a description of recommended identification, evaluation, and treatment measures; and
- Provide justifiable recommendations on the nature and extent of further work (such as Phase I or II work).

AOPs may make use of archival studies to narrow the area of interest and bolster recommendations for future work (see above for more guidance), and a site visit to the area of

interest may be helpful for archaeologists to assess current conditions. However, neither in-depth research nor extensive fieldwork is appropriate for an AOP. Overall, AOPs provide a cost-effective method for initial identification and evaluation of archaeological resources in a project's area of potential effects. They are a proactive tool that, when used in conjunction with other studies, can aid the design and review process for preservation planning.

Historic Preservation Plans/Cultural Resource Management Plans

Agencies with the responsibility of managing large land areas or administrating historic resources may benefit from the development of historic preservation plans, also referred to as cultural resource management plans (HPP/CRMP). An HPP/CRMP is a proactive tool that aggregates information about the historic and cultural nature of a *subject area* in order to plan for its future use and protect resources.

In this section, *subject area* is an all-encompassing term that refers to the focus of the HPP/CRMP, which could be an individual property or group of properties, both contiguous or dispersed, or a project area.

HPP/CRMPs may be appropriate for subject areas such as:

- Counties, cities, and towns;
- Parks and natural resource management areas;
- Historic properties; and
- Multi-property resources with a single manager.

These plans provide an overview of a subject area's cultural and historical background, describe inventoried historic properties and predicted resources, identify short- and long-term goals for preservation, and present working management recommendations for future treatment and use. The HPP/CRMP should be used as a reference source to plan for development, guide rehabilitation and repair projects, prioritize use and maintenance of historic resources, and integrate other previously conducted reports and surveys.

The content and form of an HPP/CRMP will vary depending upon the nature of the managing agency, subject area size and location, and historic resources involved. Investigators should be clear on the precise objectives of a particular HPP/CRMP in advance of study initiation in order to use the most appropriate methods and analysis. To develop an effective plan, it is essential that the investigators have a working knowledge and understanding not only of the subject area's historic properties, but also of the managing agency's mission, programs, and processes. For example, many federal agencies have CRMPs, which are developed following federal regulations. The scope of work for a CRMP under a federal agency may differ from the guidance as outlined in this section. It is the responsibility of the investigator to work with the managing agency to ensure compliance with regulations.

Prior archaeological and architectural investigations also greatly enhance an HPP/CRMP's usefulness for future planning and compliance decisions. The degree of prior investigation will influence the focus and research strategy for a given plan. However, it may be impractical and cost-prohibitive to undertake such full-scale investigations prior to plan development. In these instances, assessments of archaeological potential may provide enough

evidence to reasonably argue for management areas (see above for more guidance).

When planning to undertake an HPP/CRMP, it may be prudent to involve other interested parties, both inside and outside of the agency, especially if they will be impacted by the outcomes of the HPP/CRMP. For example, a county government may wish to produce an HPP/CRMP for historic resources under their care or ownership. In addition to the historic preservation planner or cultural resource manager, other interested parties that may benefit from involvement in the planning process may include the offices of permitting, current planning and zoning, or capital improvements. Public participation in the creation and implementation of the HPP/CRMP is also pivotal to its success. In addition to open public forums, specific citizen groups that may be solicited for input include but are not limited to:

- Local historical societies and friends groups;
- Indigenous and descendant groups;
- Local advocacy groups and non-profits; and
- Developers and land-use organizations.

It is important to note that an HPP/CRMP is different than a master plan, in that the focus should be on issues that may impact a subject area's historic or cultural resources, not on the broad management of the subject area. However, plans may still integrate other information, such as planning policies and ordinances, maintenance needs, transportation, educational strategies, and environmental considerations, as they relate to a subject area's historical and cultural resources.

At minimum, an HPP/CRMP should include the following:

- Introductory information, including current use of the subject area, why the plan is being completed and those involved, summary of methods, and an executive summary of the report;
- Historical overview, which should be as detailed as possible about the subject area and address historic contexts of the surrounding area;
- Historic structure reports, to minimally include existing conditions and recommendations for repair, rehabilitation, and maintenance;
- Archaeological evaluation, to minimally include any known sites and potential for sites (see AOP section); and
- Maintenance plan to identify short- and long-term maintenance issues and goals, task assignments and staff, inspection/monitoring plan.

An HPP/CRMP should be seen as a "go-to" document, cited often and updated in response to changes within the subject area. Some examples of updates include:

- Condition assessments;
- Land acquisitions or losses;
- Staff positions and responsibilities;

- Goal or mission realignments;
- Policy or legislative changes; and
- Further survey efforts.

Overall, HPP/CRMPs can be useful tools for management agencies when conducted thoroughly and accurately. They must balance the abilities and needs of the agency with those of the historical and cultural resources, provide attainable management solutions, and be cited often by the agency.

Academic Research

MHT does not desire nor intend to direct and oversee the research of academic archaeologists and other scholars conducting archaeological investigations outside the scope of applicable federal and state historic preservation statutes or grant funding requirements (see below). However, MHT strongly encourages academic and independent researchers to follow applicable sections of these *Standards and Guidelines* to ensure consistency throughout the state. Doing so will ensure consistency in the way that archaeological data are collected, reported, and used by others, and will lead to better synthesis of archaeological data throughout the state. As MHT is the state repository for archaeological investigations and makes archaeological information available to researchers and professionals through the Maryland Inventory, we request that investigators:

- Record archaeological properties and updates on standard Maryland Inventory (Archaeology) forms and submit completed forms to MHT; and
- Provide MHT with copies of research reports, articles, or other publications for the MHT library.

Sharing these forms and publications with the MHT library will ensure that they can be accessed by researchers, allowing for better protection, historic preservation planning, and interpretation of sites.

The MHT Library contains valuable reference sources and materials for individuals conducting research on archaeology, history, and related topics in the Middle Atlantic Region. Researchers are welcome and encouraged to use these facilities. A cursory search on Medusa and our MHT Library search engine can often provide researchers enough information to formulate a plan to make the best use of time at our facility and library. To coordinate a visit, please contact the MHT Library staff.

MHT and MHAA Grant and Loan Funded Projects

The Maryland Historical Trust (through its MHT Historic Preservation Capital Grants and Loans and the African American Heritage Preservation Program) and the Maryland Heritage Areas Authority provide funding for archaeological investigations. Eligibility of archaeological activities varies per program, and applicants for grant or loan funding should contact program staff to discuss their proposed project scope. If ground disturbing activities, including new construction, construction of site improvements, or construction of an addition, are part of a project scope, archaeological investigations may be required by

FIGURE 8: *Common MHT Funding Opportunities and Programs*

MHT, and an applicant, in consultation with program staff, may wish to include those costs in the grant or loan application. Grant and loan recipients are responsible for understanding the requirements laid out in the grant agreement and in the program's grant manual.

Additional coordination with MHT Project Review and Compliance staff or MHT Easement Program staff, along with the grant monitor, will be needed once a project involving archaeology or ground disturbing activities receives notice of funding.

Generally speaking, MHT will require conformance to the standards and reporting requirements outlined in these guidelines. Requirements may include historic preservation consultation pursuant to federal and/or state laws, geophysical survey requirements, ground-disturbing archaeological and underwater survey standards, or permitting requirements. **Close coordination will ensure that the appropriate level of effort is attained for a given project.** Additional information regarding properties subject to an MHT easement is in the following section.

Projects on MHT Historic Preservation Easement Properties

For properties under easement to MHT, archaeological investigations may be required for ground-disturbing activities. Although the terms and coverage of individual easements may vary, the easement terms require easement property owners to obtain prior approval from the Director of MHT for changes or alterations to the property, which includes any ground disturbance. While the land around a given historic property may not be an identified archaeological site, it stands to reason that there is typically archaeological potential at any historic property. Adherence to these *Standards and Guidelines* will normally be required by the Director when archaeological provisions are in place in the easement and ground disturbing work is being proposed. In addition, MHT generally applies the Secretary of the Interior's *Standards for Rehabilitation* (36 CFR 68) in its reviews of work at easement properties. Standard #8 states that archaeological resources, "...will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken."

Easement property owners are responsible for ensuring that they understand the terms of their easement and contact MHT Easement Program staff whenever work is anticipated at the property. Property owners and project planners are encouraged to hire a consulting archaeologist and coordinate with MHT's Easement Program staff at an early stage to ensure that they are appropriately considering the impacts of ground disturbing activities to archaeological resources and budgeting accordingly.

VI *Curation of Collections*

Summary

Every archaeological investigation generates a collection. At a minimum, the collection will consist of archaeological documentation such as field notes, excavation records, maps, photographs, and a report. When artifacts are recovered and retained, the investigation's resulting collection is comprised of both records and artifacts that must be managed together. Artifacts and records require professional processing and curation to ensure that they are organized and understandable, stable for long-term preservation, and accessible for ongoing research and interpretation. Archaeological collections should be deposited in a qualified repository which will safeguard and permanently curate the collection in accordance with current professional standards. Where and how each collection will be curated will be dependent on who owns the collection (typically the landowner), and which laws and regulations apply.

Regulations

In 1990, the Department of the Interior - National Park Service issued federal curation regulations, entitled "Curation of Federally-Owned and Administered Archeological Collections" (36 CFR § 79). The federal regulations establish definitions, standards, guidelines, and procedures which federal agencies are required to follow to preserve archaeological collections. The regulations presented in 36 CFR § 79 must be followed for federal compliance projects, as appropriate. Although the regulations are legally applicable only to federal agencies and programs, they offer pertinent guidance that may be applied to the treatment of all archaeological collections.

The regulations also present detailed standards to determine whether a repository has the capability to provide adequate long-term curatorial services. Required factors include appropriate physical facilities, temperature and humidity controls, security, controlled access, fire protection and suppression, records maintenance and storage, routine inspection, and qualified staff (36 CFR § 79.9). Collections generated by federal agencies and programs must be curated by an appropriate repository. In addition to considering a repository's professional qualifications, the federal standards offer further guidance on how to select a suitable repository for a collection. In general, it is advisable to curate a collection in a repository which is located in the same state where the collection originated, and which maintains other collections from the same site, project area, or broader geographic region. Collections should not be subdivided and stored in multiple locations, unless such storage is warranted due to conservation, research, exhibit, or other legitimate purposes. Finally, artifacts and their associated records should be curated at the same repository to sustain the collection 's integrity and research value (36 CFR § 79.6[b]).

The disposition of an archaeological project's artifact and records collection should be decided prior to initiation of fieldwork and in consultation with the collection owner and the MHT. The MAC Lab at Jefferson Patterson Park and Museum is designated as a repository for artifacts and associated records generated by professional archaeologists as the result of compliance projects required by government-mandated laws and regulations. The

MAC Lab may also accept archaeological collections from the State of Maryland that were collected by private collectors or avocational archaeologists. The acceptance of these collections is subject to approval in accordance with MHT's Archaeological Collections Policy.

Technical Update No. 1

MHT's curation and conservation standards are presented in detail in *Technical Update No. 1 of the Standards and Guidelines for Archaeological Survey and Excavation in Maryland: Collections and Conservation Standards* and must be followed for all collections to be curated by the MAC Lab. MHT also strongly recommends adherence to these requirements for all archaeological collections generated in Maryland to standardize curation practices, ensure professionally acceptable treatment of archaeological materials, and facilitate the availability of collections and documentation for future research.

These standards outline procedures for cleaning, labeling, cataloging, packaging, sampling and discard, and conservation of artifacts and the preparation of associated documentation, both paper and digital. The goal of curation standards is to ensure that all archaeological collections generated by professional or avocational archaeologists in Maryland contain enough information to be usable (i.e. each photo has a description, the field records are organized, etc.), and they receive appropriate processing, packaging, documentation, and curation. The treatment of records and artifacts in accordance with these standards will help ensure that the collection has research value and is prepared with long-term preservation and accessibility in mind.

Adherence to the curation standards is the responsibility of all participants in an archaeological investigation, not just the lab managers. The generation of the collection begins with the launch of the project, so ensuring that a collection meets standards is the responsibility of everyone, from those writing the research design and setting the budget to each field tech making a record as they dig.

Collection Ownership

All collections must have clear ownership documentation. Initially, collections are the property of the landowner (typically), and for most archaeological investigations generating collections that will end up in a repository like the MAC Lab, ownership transfer documentation is needed. For collections from private property, a **Deed of Gift** signed by the property owner donating the collection to MHT is required. For collections from state-owned property, a **Letter of Transfer** on state agency letterhead and signed by the appropriate authority is required. For the transfer of federal collections to the MAC Lab, an agreement for curatorial services is needed and requires coordination with the MAC Lab's Federal Curator. In these cases, the collection remains federal property.

Situations may arise where a property owner requests to keep the material remains recovered from the owner's private property. Under these circumstances, the archaeologist should strongly encourage the owner to donate the collection to a suitable repository by explaining the ethical reasons for appropriate curation and by providing information on incentives for such a donation (tax benefits, recognition, ensuring accessibility for future generations). A repository may be willing to accept the entire collection and then loan selected items back to the property owner for display or study purposes, in accordance

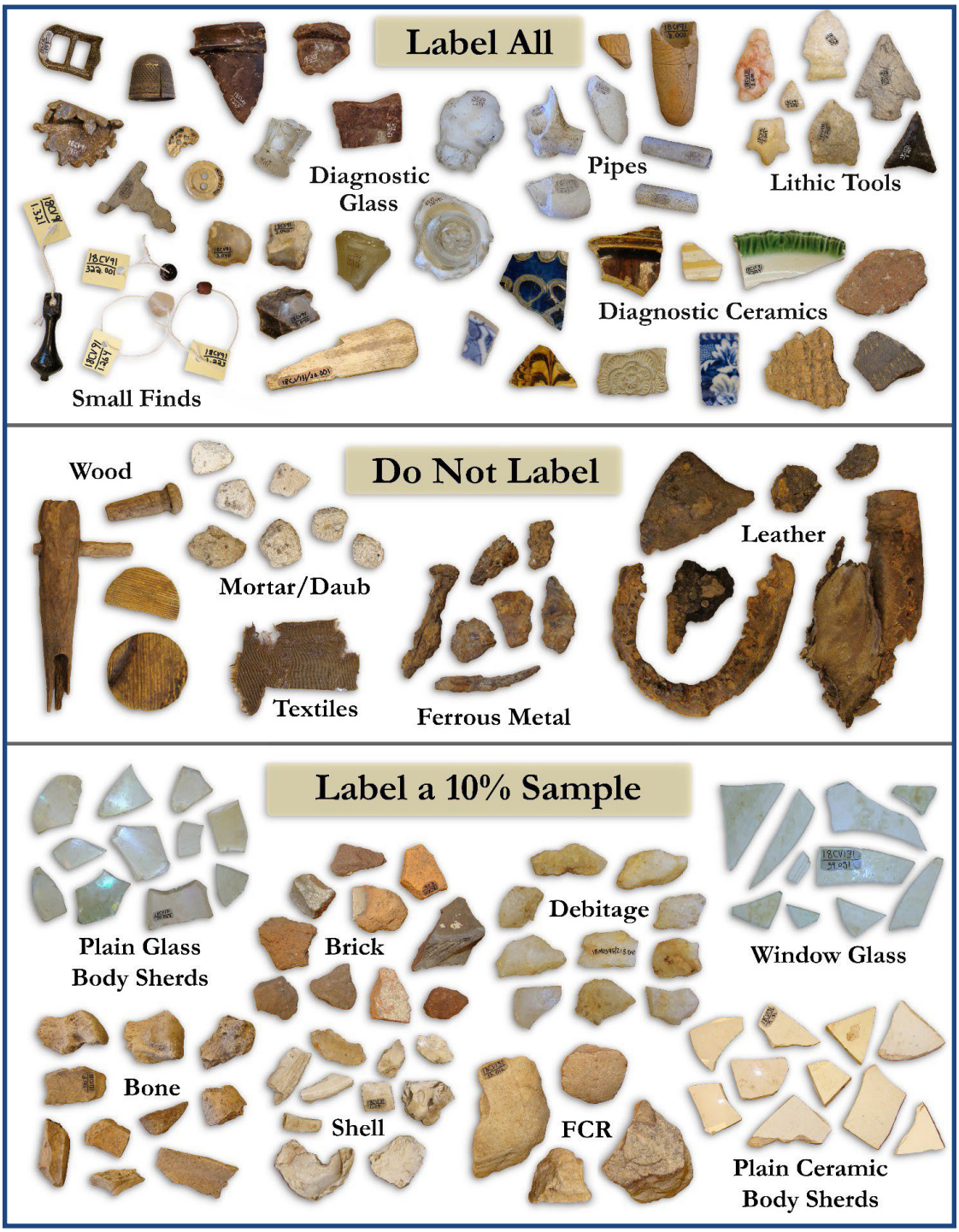


FIGURE 9: *Detailed sample page (Examples of what to label and what not to label) from Technical Update No. 1 of the Standards and Guidelines (Morehouse et al. 2022: 7).*

with the MHT's Archaeological Collections Policy. If a property owner insists on retaining possession of the artifacts recovered from private property, the artifacts must be returned to the owner, along with a copy of the associated records.

Prior to transferring a collection to the private property owner, the collection should still

be processed in accordance with the MHT's curation standards. In addition, the artifacts should be thoroughly recorded, including photographs and drawings of diagnostic artifacts, as well as other artifacts critical to the interpretation of the archaeological resources. The resulting documentation should be incorporated into any associated records, all of which should be deposited in a suitable repository along with detailed information on the location of the artifact finds. Finally, the archaeologist should provide the owner with written curatorial recommendations on how to store and handle the collection to avoid or minimize damage and deterioration of the collection, along with information on appropriate repositories where the collection may be donated in the future.

State agencies, cultural resource management firms, or individuals considering donating their collections to MHT should contact the MAC Lab's State Curator. For the transfer of federal collections to the MAC Lab for curation, contact the MAC Lab's Federal Curator.

All new collections slated for curation at the MAC Lab must meet MHT's curation standards prior to acceptance. The MAC Lab may refuse to accept any new collections that fail to meet these standards. The MAC Lab also reserves the right to waive all or portions of these standards for extraordinary circumstances. For example - exceptional collections generated by nonprofessionals or from emergency salvage excavations.

For more detailed guidance about curation of collections, please see:

Morehouse, Rebecca, Sara Rivers-Cofield, and Nichole Doub
2022 *Technical Update No. 1 of the Standards and Guidelines for Archaeological Survey and Excavation in Maryland: Collections and Conservation Standards.* Maryland Archaeological Conservation Laboratory. Report on file at the Maryland Historical Trust, Crownsville.

NOTE: The document listed above is also provided as Appendix IV.

VII *Reports and Documentation*

Summary

Written reports are essential and required components for all archaeological investigations, and these documents need to contain specific kinds of information to allow agency personnel (at the SHPO, at the governmental agency involved in the undertaking, and at the ACHP) to make informed decisions regarding the identification and treatment of significant sites. **The submittal of reports that are missing key information may cause project delays.** For this reason, MHT accepts only complete reports – not management summaries - for review. This chapter specifies the essential components of compliance reports and will also serve as a useful reference for technical reports that are produced for research that is conducted outside of the compliance field.

Project Report Submittal

In an effort to eliminate confusion and unnecessary delays, consultants should discuss with their employing agencies and/or other clients which party will submit both draft and final reports (with cover letters) to MHT's Project Review and Compliance Unit for review. Consultants should refer to the most current ***Society for American Archaeology (SAA) Style Guide*** for technical questions of style, while supplementary guidance on the citation of historical records is available in the latest publication instructions for *Historical Archaeology*. The ACHP's course, "Section 106 Essentials" is also recommended for enhancing one's understanding of the principles of the Section 106 review process and the preparation of compliance documents. Consultants are also encouraged to regularly examine recent final reports that have been accessioned into MHT's Library to review the level of work and documentation that is appropriate and acceptable for compliance projects in Maryland.

In an effort to augment the quality of archaeology conducted as a result of compliance with state regulations, MHT may request the peer review of data recovery plans and draft data recovery reports. For this reason, MHT should be provided with two copies of Phase III proposals (budgetary information not required) and draft Phase III reports. For Phase I and Phase II reports, it is sufficient to send MHT ***single*** copies of draft and final documents.

Addressing agency comments and revising draft reports is essential to producing complete and thorough reports that contribute to the identification, evaluation, preservation, and interpretation of archaeological resources in Maryland. To limit the need for revisions and **prevent unnecessary project delays**, Appendix I provides a checklist for the compilation of complete reports. The checklist includes the most critical items that should be included in all reports. **Please note that, following the 2026 update to the *Standards and Guidelines,* a copy of this checklist must be filled out and submitted (along with a cover letter) with every draft report. MHT's review of a draft report will not begin until a complete report with a checklist is submitted.**

Draft reports submitted to MHT for review must consist of a bound, 8 ½ x 11-inch typed copy and a digital PDF file of the report. Figures may be larger in size for clarity, if they can be folded to fit in the bound report as pages or inserts. In order to facilitate the storage of

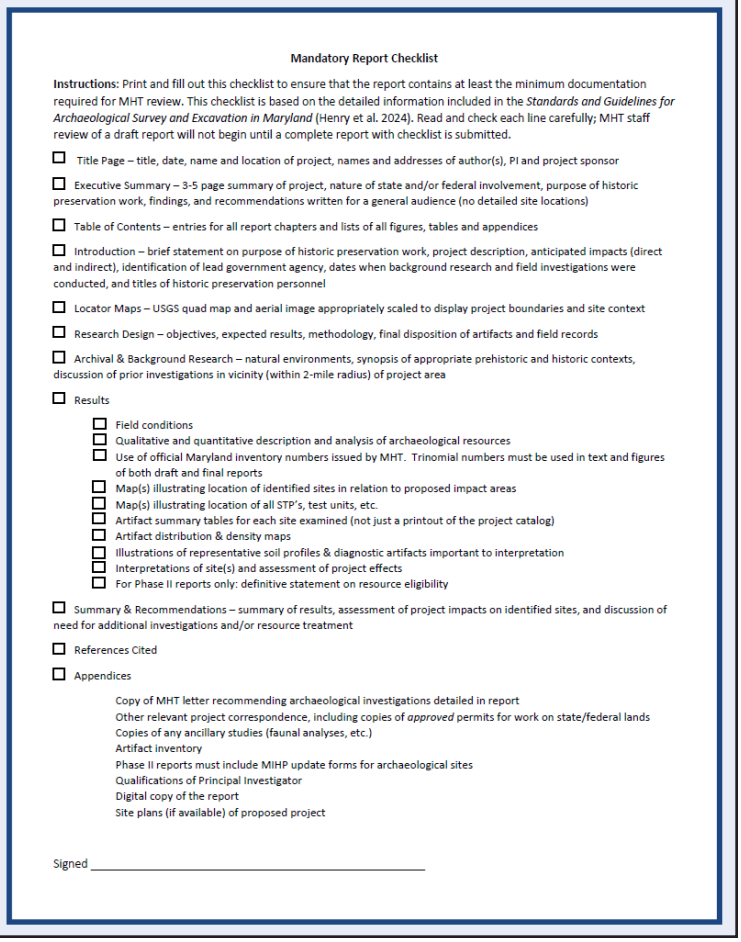
the reports in MHT's Library, consultants must prepare final reports that are single-spaced and double-sided.

Due to the SHPO's workload, the review of a draft report and a response with comments and recommendations may take up to 30 days from the receipt of the document. Authors of reports will need to address all SHPO comments and prepare final, revised documents for re-submittal to MHT.

In addition to sending copies to MHT's Project Review and Compliance Unit, a copy of all final compliance reports should be sent to both the Jefferson Patterson Park & Museum (JPPM) Research Library and the Maryland State Highway Administration's (SHA's) Cultural Resources Section. Wider dissemination of the results of archaeological investigations is, of course, an important professional responsibility. It is therefore strongly recommended that consultants also provide copies of their final reports to other appropriate repositories, including relevant local government archaeology programs (for example, the Cultural Resources Division in Anne Arundel County's Office of Planning and Zoning).

Mandatory Report Checklist

MHT is now requiring the use of a Mandatory Report Checklist. The checklist can be found in Appendix I of these *Standards and Guidelines*. ALL reports must now be submitted with a completed Mandatory Report Checklist that can be included with the cover letter that customarily accompanies each report. The Checklist is based on the detailed information that is presented in Section VII of the *Standards and Guidelines* and is intended to serve as an aid to the consultant(s) preparing a report to help ensure that each report contains the documentation required for MHT review. If a draft report is missing any of the key elements listed on the Checklist, MHT staff may be unable to complete their review and provide informed recommendations to the relevant state and/or federal agencies. Under such circumstances, MHT must notify the relevant parties regarding the incomplete report and request that a complete document be re-submitted as soon as possible. The submittal of incomplete reports can lead to unnecessary and avoidable delays and expenditures. The diligent use of the Mandatory Report Checklist, however, will help to preclude such delays and expenditures. Before sending a report in to MHT for review, a consultant must be sure to read and check each line of the Checklist very carefully, as **MHT's review of a draft report will not begin until a complete report with a Checklist is submitted.**



Mandatory Report Checklist

Instructions: Print and fill out this checklist to ensure that the report contains at least the minimum documentation required for MHT review. This checklist is based on the detailed information included in the *Standards and Guidelines for Archaeological Survey and Excavation in Maryland* (Henry et al. 2024). Read and check each line carefully; MHT staff review of a draft report will not begin until a complete report with checklist is submitted.

☐ Title Page – title, date, name and location of project, names and addresses of author(s), PI and project sponsor

☐ Executive Summary – 3-5 page summary of project, nature of state and/or federal involvement, purpose of historic preservation work, findings, and recommendations written for a general audience (no detailed site locations)

☐ Table of Contents – entries for all report chapters and lists of all figures, tables and appendices

☐ Introduction – brief statement on purpose of historic preservation work, project description, anticipated impacts (direct and indirect), identification of lead government agency, dates when background research and field investigations were conducted, and titles of historic preservation personnel

☐ Locator Maps – USGS quad map and aerial image appropriately scaled to display project boundaries and site context

☐ Research Design – objectives, expected results, methodology, final disposition of artifacts and field records

☐ Archival & Background Research – natural environments, synopsis of appropriate prehistoric and historic contexts, discussion of prior investigations in vicinity (within 2-mile radius) of project area

☐ Results

- ☐ Field conditions
- ☐ Qualitative and quantitative description and analysis of archaeological resources
- ☐ Use of official Maryland inventory numbers issued by MHT. Trinomial numbers must be used in text and figures of both draft and final reports
- ☐ Map(s) illustrating location of identified sites in relation to proposed impact areas
- ☐ Map(s) illustrating location of all STP's, test units, etc.
- ☐ Artifact summary tables for each site examined (not just a printout of the project catalog)
- ☐ Artifact distribution & density maps
- ☐ Illustrations of representative soil profiles & diagnostic artifacts important to interpretation
- ☐ Interpretations of site(s) and assessment of project effects
- ☐ For Phase II reports only: definitive statement on resource eligibility

☐ Summary & Recommendations – summary of results, assessment of project impacts on identified sites, and discussion of need for additional investigations and/or resource treatment

☐ References Cited

☐ Appendices

Copy of MHT letter recommending archaeological investigations detailed in report
Other relevant project correspondence, including copies of *approved* permits for work on state/federal lands
Copies of any ancillary studies (faunal analyses, etc.)
Artifact inventory
Phase II reports must include MIHP update forms for archaeological sites
Qualifications of Principal Investigator
Digital copy of the report
Site plans (if available) of proposed project

Signed _____

Elements of an Informative Report

- See Checklist - Appendix I (and sidebar above)

1. Title Page

i. Report Title - must include the project name and location (including county), as well as a designation of the phase of work – Phase I, Phase II, or Phase III. For example: *A Phase I Archaeological Survey of the Adventureland Subdivision Property, Somewhere County, Maryland*
ii. Clear designation of report's author(s) with complete mailing address
iii. Clear designation of project's principal investigator with complete mailing address
iv. Clear designation of lead government agency (U.S. Army Corps of Engineers, MD Department of Natural Resources, etc.) with complete mailing address
v. Date of current version of report

2. Executive Summary for Public Consumption

i. A 3-5 page summary that includes the purpose of the archaeological investigations, a project description, the nature of the state and/or federal government involvement, and the general location of the undertaking, as well as the study's findings and recommendations. (See sidebar below)

3. Table of Contents

i. Entries for all report chapters and heading/subheadings
ii. Lists of figures (one list for all forms of illustrations - line drawings, maps, photographs, etc.), tables, and appendices
iii. Page numbers for all entries

4. Introduction

i. Brief statement on the purpose of the archaeological investigations
ii. Identification of the lead government agency and description of the proposed undertaking with its anticipated direct and indirect impacts
iii. Identification of specific law calling for the historic preservation work (Section 106 of the NHPA, the MHT Act, etc.)
iv. Locator maps

- Appropriately scaled USGS quad map and aerial image illustrating boundaries of project area and area of potential effects (APE) as determined by governmental agency
- Copy of the Maryland Archeological Research Units map with project location depicted. MARU boundaries are available in Medusa.

v. Acres examined
vi. Names and titles of historic preservation personnel

5. Results of Archival and Background Research

i. Discussion of factors relevant to consideration of historic property potential, integrity and significance, including past and present natural environments and past and present land use
ii. Synopsis of precontact and historic contexts with appropriate level of detail
iii. Discussions of prior investigations in vicinity (within a 2-mile radius) of project area – including a table of inventoried archaeological sites. A figure should illustrate the locations of inventoried archaeological resources only if they are within or adjacent to the current APE

iv. Modification (if needed) of proposed methodology for field and laboratory investigations, based on the review of these factors

6. Research Design

i. Detailed statement of objectives, including applicability of the work to regional research questions
ii. Description and justification of the methods and techniques chosen for archival and background research, field studies, and laboratory analysis
iii. Expected results
iv. Final disposition of artifacts and field records

7. Results of Field and Laboratory Investigations

i. Field conditions and constraints
ii. Qualitative and quantitative description and analysis of identified archaeological resources – using official Maryland Inventory of Historic Properties numbers issued by MHT's Office of Research Survey and Registration. The trinomial numbers must be used in the text and figures of both draft and final reports
iii. Map(s) illustrating locations of identified sites in relation to the boundaries of the APE and proposed impact areas
iv. Map(s) illustrating locations of survey transects, surface collection quadrants, test pits and test units, as well as artifact distribution/density maps and permanent datum points
v. Illustrations of representative soil profiles and diagnostic artifacts important to the interpretation of a site
vi. Site summary tables of artifacts, presenting significant artifact categories and supporting site interpretations and recommendations (see sidebar below)
vii. Interpretations of site(s) and assessment of project effects
viii. For Phase II reports only – report must provide definitive statement on National Register eligibility for each evaluated site

8. Summary and Recommendations

i. Summary of results
ii. Assessment of impact of governmental undertaking on identified sites
iii. Discussion of need for additional investigations and/or resource treatment
iv. Discussion of study's public interpretation measures, if applicable

9. References Cited - list all references according to the SAA Style Guide format

10. Appendices

i. Copy of MHT letter recommending archaeological investigations detailed in report (see sidebar)
ii. Other relevant project correspondence, including permits for work on state or federal lands
iii. Scope of work or proposal, if appropriate
iv. Copies of any ancillary studies (faunal analyses, etc.)
v. Artifact inventory
vi. Phase II reports must include Maryland Inventory update forms for archaeology
vii. Qualifications of Principal Investigator(s) - maximum length of 2 pages per individual – demonstrating that individual meets National Park Service requirements
viii. Site plans (if available) of proposed project
ix. Digital copy of report (as a CD "sleeve" or contact MHT for the best format and method for upload)

Special Considerations for Phase I and Phase II Reports

While the more general requirements for compliance reports have been outlined in the previous section of these *Standards and Guidelines*, this section highlights several of the most essential elements of compliance reports for both Phase I identification surveys and Phase II evaluative studies.

Phase I Reports: Phase I survey reports should begin with clear statements on the goals and objectives of the project. Since consultants often work in different states and varied jurisdictions where identification surveys are referred to by different names, it is essential that researchers working in Maryland define the level of survey being performed. As noted elsewhere in these *Standards and Guidelines* (see Chapter II), Phase I archaeological surveys in Maryland include both the assessment of an area's archaeological sensitivity ***and*** field survey. In some states, these two components are divided into Phase IA and Phase IB, but no such division is made in the state of Maryland. Additionally, it is insufficient to simply note that a "Phase I survey" was conducted; one must also briefly describe the purpose of the survey and the type of governmental undertaking that is proposed. Each report must also identify the governmental agency that is responsible for considering the project's potential impacts on historic properties, as well as the particular historic preservation law mandating the archaeological investigations.

In addition to the project's research design, reports must contain other substantive sections, including one that describes the types of archaeological resources that are likely to occur within the study area. Such discussions should incorporate ***relevant*** information on current and past environments and land use as well as information (and an accompanying table) on archaeological resources previously recorded within and in the vicinity of the project area.

The section on research methods and techniques must be explicit and carefully justified. For example, it is insufficient to simply describe the kinds of sampling strategies employed, the spacing of transects, and the analytical procedures used. The report must clearly indicate ***why*** these particular research methods and techniques were considered the best and most appropriate for the investigation – relating them to archaeological expectations and research questions.

Sections dealing with results and recommendations must incorporate official Maryland Inventory (Archaeology) site numbers issued by MHT's Office of Research, Survey and Registration. As noted in the Mandatory Report Checklist, the trinomial inventory numbers must be used in the text and figures of both draft and final reports (please see Chapter V for detailed information on consulting with MHT's Archaeological Registrar to acquire site numbers for newly identified sites). **If a draft report does not include the appropriate Maryland Inventory numbers, MHT staff will be unable to complete their review and provide informed determinations to the relevant state and/or federal agencies. Under such circumstances, MHT will notify the relevant parties regarding the incomplete report and request that a complete document be re-submitted as soon as possible.** Failure to incorporate the appropriate Maryland Inventory site numbers in a report can lead to unnecessary and avoidable delays and expenditures.

Sections of Phase I reports detailing the results and recommendations of the survey must also include maps that clearly depict the boundaries of the project area, the boundaries of

the area of potential effects, the position of survey transects and test pits, and the locations of all identified resources in relation to the proposed impact areas.

And finally, Phase I reports should conclude with recommendations regarding site integrity and significance (if possible), as well as a recommendation either for additional (Phase II) investigations of identified sites or the termination of study in the context of project

New Report Requirement: Executive Summary for Public Release

The inclusion of a 3-5 page executive summary (rather than a 1 page abstract) at the beginning of each report is a significant change from the 1994 *Standards and Guidelines*. Similar to the earlier abstract, the executive summary should still provide a clear explanation of the **purpose** of the archaeological investigations, a brief **description of the project** that has led to the investigations (residential subdivision, bridge replacement, transmission line, etc.), and the nature of the **state and/or federal government involvement** precipitating the investigations (U.S. Army Corps of Engineers permit, FCC license, improvements on state lands, etc.). Executive summaries should include the **GENERAL location** of the project area, as well as a synopsis of the investigation's **findings and recommendations**.

The lengthier summary will allow for a more detailed synopsis – the purpose of which is to provide an informative but concise 3–5-page document that can easily be **shared with the public upon request**. The summaries will also be an additional tool that can be used to help populate MHT's Archaeological Synthesis database – a searchable database that synthesizes data from the thousands of excavations that have been conducted in Maryland and must be continuously updated as new studies are completed and new reports are submitted to MHT. As public documents, the digital executive summary file provided to MHT must meet or exceed Web Content Accessibility Guidelines (WCAG) 2.1, Level AA, which most word processor and document design programs can support.

Because these executive summaries may be shared with the public, they must **NOT** include any references to specific site location information. Archaeological site location information is protected by state law (much like Maryland's Rare, Threatened, and Endangered Species) and is generally restricted to individuals who meet the Secretary of the Interior's *Professional Qualification Standards for Archeology*.

MHT receives regular requests for archaeological survey report information from property owners, concerned citizens, local historic preservation commissions, etc., and the inclusion of more detailed Executive Summaries will enable MHT to respond to such requests more quickly and effectively – providing the public with the information they need to have a voice and constructively contribute to the historic preservation review process.

Example of Appropriate General Site Location Information for Executive Summary	Example of Detailed Site Location Information for "Results" Section of Report
"...Site 18ANXXXX has been identified as a prehistoric shell midden located along a low terrace overlooking Rock Creek and the Patapsco River..."	"... Located in the northern portion of Waterfront Park, site 18ANXXXX has been identified as a prehistoric shell midden. The site overlooks both Rock Creek and the Patapsco River and extends along two bluffs that are separated by a tidal pond. The bluff to the east is located at the end of Rivendell Lane and the bluff to the west is located at the end of Hogsmeade Way..."

Site Location Comparison - Executive Summary vs. Results Section

impacts and potential effects.

Phase II Reports: As with Phase I reports, documents describing Phase II evaluative investigations must begin with a statement of the purpose of the work. It is insufficient to simply note that a "Phase II study" was conducted. One must also briefly describe the purpose of the study and the type of governmental undertaking that is proposed. Each Phase II report must also identify the governmental agency that is responsible for considering the project's potential impacts on historic properties, as well as the particular historic preservation law mandating the archaeological investigations.

In addition to the project's research design, Phase II reports must contain other substantive sections, including one that describes the types of archaeological resources that occur in the area of potential effects organized by cultural/temporal periods. Discussion should incorporate information on current and past environments and land use that may be im-

New Report Requirement: Inclusion of Correspondence Recommending the Investigations

The Appendices of each report must include a copy of the letter, memorandum, or email correspondence from MHT (or other agency - SHA, FEMA, local government, etc.) that recommended or required the archaeological investigations that are detailed in the report. Inclusion of the relevant correspondence will demonstrate that the consultant has, in fact, been provided with a copy of the correspondence and is well-informed about the purpose and level of work that has been recommended or requested.

While the 1994 *Standards and Guidelines* encouraged consultants to include "relevant project correspondence" in their draft and final reports, MHT continued to receive the occasional report detailing the results of a survey that did not demonstrate a sufficient level of work or meet the purpose of the recommended investigations. One draft report, for example, revealed that the Phase I survey had focused solely on areas having a high potential for precontact resources. MHT had also specifically recommended a cemetery delineation and additional survey work in the vicinity of a 19th century farmstead, but the Principal Investigator had never requested a copy of MHT's detailed recommendations from their client. Conversely, survey reports have also been unnecessarily submitted to MHT several months (or even years) after the Project Review and Compliance Unit had recommended that NO cultural resources investigations were necessary for a particular project given the nature of the undertaking, results of survey work on adjacent properties, and/or evidence of past disturbance within the project area.

As with the submittal of incomplete reports, the development of a scope of work or the commencement of archeological survey work without the benefit of being informed of MHT's specific comments/recommendations for the work can lead to unnecessary and avoidable delays and expenditures. Requiring the inclusion of the correspondence from MHT (or other agencies) will help to ensure that the Principal Investigator has had access to this important information, which will, in turn, help to preclude such delays and expenditures.

portant to evaluations of resource significance and integrity. The description of research methods and techniques must be explicit and carefully justified. Project maps must show the locations of all excavation units and other field investigations, while other maps must clearly depict the boundaries of archaeological sites, the distribution of artifacts and other cultural materials, site features, and the undertaking's APE. Drawings of ***representative*** soil profiles must show the vertical limits of archaeological components.

Concluding chapters of Phase II reports must contain a detailed discussion of resource integrity and typically must also include a definitive statement on significance and the National Register eligibility for each individual site that has been investigated and evaluated in its entirety. The discussion should include a summary of 1) information provided by each identified archaeological resource; 2) future information potential with respect to the estimated quantity of data and the ability to address specific research questions; and 3) comparisons of each resource with other local and regional resources from similar historic contexts. There must also be a definitive statement on resource eligibility with an explicit designation of National Register evaluative criteria, as well as a consideration of the project's effects and the need for either site avoidance or further site treatment (Phase III data recovery).

If an archaeological site cannot be evaluated in its entirety because the principal investigator can gain access only to a portion of the site or because part of the site is located outside of the APE or permit area, the purpose of the investigation should be adjusted to simply assess whether archaeological deposits (associated with the larger site) exhibiting integrity and research potential are located within the APE. The Phase II report, however, should ***not*** include a statement or recommendation of eligibility of the site, as MHT cannot concur with a statement of eligibility that is based only on a limited investigation ***of a portion*** of a site. Similarly, we cannot determine a portion of a site to be ineligible or eligible when the remainder of the site has not been evaluated as part of the Phase II investigation.

VIII *Archaeology Under Water*

Introduction

Federal and state laws protect submerged historic and archaeological resources located in Maryland state waters, which include 1) tidal waters up to the mean high tide line and three miles from the coastline, and 2) non-tidal waters within the boundaries of the state that were navigable under the laws of the United States as of April 28, 1788 up to the ordinary high-water mark. Maryland state waters also include waters along the Virginia shoreline of the Potomac River to mean low water. In a general sense, MHT regulates and manages all precontact and historic cultural remains in, partially in, or submerged beneath state waters. MHT's Maryland Maritime Archaeology Program (MMAP) is responsible for administration of the Submerged Archaeological Historic Property Act (MD Code § 5A-340-341) and its implementing regulations which detail the state's program for archaeological permits related to submerged archaeological historic property. MMAP oversees permitting for archaeological work in Maryland state waters.

Archaeological investigations in Maryland state waters conducted pursuant to federal and state historic preservation laws follow the same phased approach of Phase I (Identification), Phase II (Evaluation), and Phase III (Treatment) as archaeological investigations on land, and the guidance provided throughout the present document equally applies with a few additional requirements outlined below.

Qualifications and Personnel

With few exceptions, investigations of submerged archaeological historic property should be planned and directly overseen by archaeologists that both meet the Secretary of the Interior's *Professional Qualifications Standards for Archeology* and can demonstrate knowledge and experience working in a comparable setting using methods, tools, and techniques similar to those necessary to execute any proposed research design.

Investigations of submerged archaeological historic property can be complex and often involve activities which require oversight by multiple specialists. It is not uncommon for teams to include archaeologists with different specializations who work with a Principal Investigator to plan and oversee particular aspects of fieldwork and data interpretation. This is common when fieldwork requires geological sampling, electronic remote sensing, architectural documentation of watercraft or other maritime structures, and/or when expected findings include materials representing varied cultural and historical contexts.

In addition, investigations involving artifact recovery should include, as part of the field team, an archaeologist or conservator with training and experience in the treatment of wet and water-logged archaeological objects. This individual should assist with excavation of fragile archaeological objects and oversee in-situ and post-recovery artifact stabilization, packaging, and transportation. Artifacts should be conserved by professionals with training and experience in the treatment of wet and water-logged archaeological objects and appropriately curated.

Permits

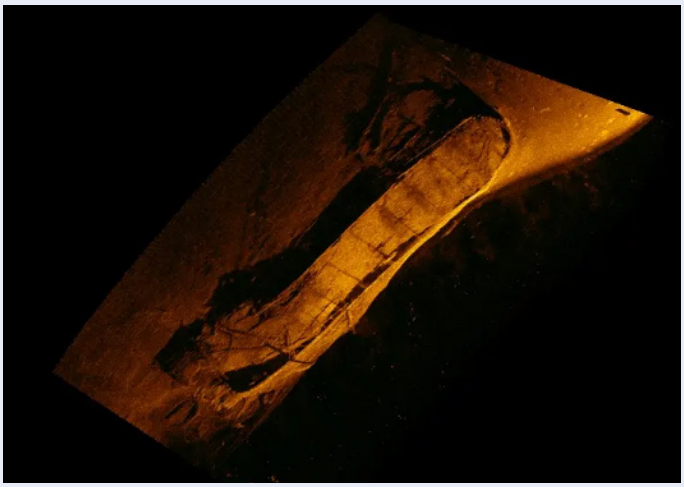
Requirements, procedures, and applications for archaeological permits related to submerged archaeological historic property differ from those related to terrestrial archaeology. Archaeological permits are required for any work which involves excavation, defined as the process of moving, removing, or disturbing bottom sediments to expose submerged archaeological historic property (COMAR 34.04.03.02). This includes probing and subsurface sampling which are occasionally conducted during ground-truthing of electronic remote sensing anomalies to complete Phase I - Identification.

There are two types of permits related to submerged archaeological historic property: Intensive Survey Permits and Data Recovery Permits.

Intensive Survey means a field and archival investigation of an area designed to gather and identify fully information about submerged archaeological historic properties sufficient to evaluate them against National Register criteria of significance within specific historical contexts and may include data collection, test excavation, data recovery, and artifact recovery on a limited basis (COMAR 34.04.03.02). **Intensive Survey Permits are required for some Phase I - Identification and most Phase II - Evaluations.**

Phase I (Identification) and Intensive Survey Permits

The goal of Phase I (Identification) for all compliance projects is to locate archaeological properties that may be eligible for the National Register of Historic Places, in an undertaking's area of potential effects (see Chapter II, p. 13). For work conducted in Maryland state waters, Phase I work almost always involves use of electronic remote sensing tools including side scan sonar, magnetometer, and sub-bottom profiler systems as part of an initial reconnaissance survey effort. It is often unclear if sonar contacts, magnetic anomalies, or sub-bottom reflectors recorded by these tools represent archaeological properties and/or areas of archaeological interest. As such, additional electronic remote sensing using different settings and data acquisition parameters and/or additional instruments, and inspection and sampling by diving archaeologists, by remote operated vehicles (ROVs), or by other means, are required to ascertain their nature. In certain cases, limited sediment removal and/or probing also is required to determine the horizontal and vertical extents of archaeological properties at the Phase I level to develop appropriate avoidance plans or to plan Phase II work. **In the event that sediment removal, sampling, or probing is needed to complete a Phase I study, an Intensive Survey permit is required.**



Side Scan Sonar Image of a Canal Boat on the Susquehanna River

Data recovery means a systematic study carried out in accordance with a research plan, which may include data collection, excavation, and artifact recovery (COMAR 34.04.03.02). **Data Recovery Permits are required for these activities which are often part of Phase III (Treatment).**

Digital copies of regulations, permit applications, and instructions are available upon request from the State Underwater Archaeologist. Permit application fees typically are waived for studies initiated pursuant to federal and state historic preservation laws, and for work associated with higher education and not-for-profit research.

Research Designs

Research designs are plans which describe and justify goals, methods, and techniques of a proposed archaeological study and describe its anticipated outcome. All phases of investigations, (I, II, and III), focusing on submerged archaeological historic property and conducted pursuant to federal and state historic preservation laws, as well as all archaeological permit applications, require research designs. MHT should be afforded a reasonable opportunity to comment on all research designs related to proposed work in state waters developed to assist in compliance with federal and state historic preservation laws. MHT requests submission of a complete research design at least 30 days prior to the planned commencement of fieldwork to allow ample time for review and refinement as needed. Early coordination is encouraged. Research designs should follow both the requirements outlined in Chapters II-III and those specified for research plans in COMAR 34.04.03.04. Additional requirements specific to research designs related to investigations of submerged archaeological historic property are presented below.

- **Personnel**

The Principal Investigator and the persons supervising field and laboratory activities should be identified with their specific responsibilities clearly stated. All supervisory roles should be filled by personnel with applicable training and experience. Short-form resumes (no longer than 3 pages in length) for each team member or specialist which demonstrate suitability for assigned duties should be included in an appendix.

- **Objectives**

The Objectives section should include a clear description of project goals related to *Identification, Evaluation, Treatment,* or *Research*, a discussion of why the proposed work is needed and/or important, and a timetable including the estimated duration of fieldwork and tasks necessary for project completion. Government agencies and other parties participating in or requesting the work should be named and their involvement described. Federal, state, or local laws, regulations, orders, licenses, or permits relevant to the project and how the proposed work will comply fully with related requirements should be detailed.

- **Background**

The Background section should focus on the immediate vicinity of the project area or the estimated or previously determined Area of Potential Effects (APE). **Lengthy general overviews of geology, archaeology, and history of Maryland and the Mid-Atlantic are not necessary or recommended.** It should review existing literature and include limited research and presentation of these topics that will support discussion of anticipated archaeological property and material types, ages, and conditions. This informa-

tion should be used to inform and justify proposed methods, techniques, and tools, and anticipate results.

Maps depicting locations of known archaeological, Maryland Inventory, and National Register properties, topography and bathymetry, structures, and other relevant information should be included. In the case of studies initiated to assist government agencies in compliance with federal and state historic preservation laws, maps also should include:

1) areas marked where ground disturbance, such as grading, dredging, or construction, etc., is expected or proposed;
2) access routes and staging areas;
3) federal and/or state permit or jurisdictional limits; and
4) property boundaries; and an estimated or previously determined APE.

- **Methods and Techniques**

The Methods and Techniques section should include descriptions and justifications of proposed methods, techniques, and tools for desktop and archival research; survey and testing; evaluation; excavation; artifact recovery, stabilization, storage, and transport; artifact and data inventory; documentation; specialized analyses; and data interpretation, presentation, and dissemination. All should be specific to the project area's size, accessibility, environmental characteristics, and the expected types of archaeological properties and materials.

If the proposed work involves use of specialized electronic instruments, an equipment list including specifications, anticipated settings, and relevant data acquisition parameters should be included. In the case of electronic remote sensing tools, these settings and data acquisition parameters typically include sampling rate, frequency, range, transect (line) spacing and transect orientation. The specific criteria applied by archaeologists during reviews of electronic remote sensing data to identify anomalies or contacts potentially representing submerged archaeological historic properties or areas with such potential should be clearly described and justified.

Technical recommendations for side scan sonar, magnetometer, and sub-bottom profiler data collection and presentation when used as part of Phase I appear in Appendix III. Researchers are encouraged to submit well-justified variations from these recommendations for consideration and potential concurrence prior to the commencement of fieldwork. Recommendations related to ground-truthing contacts and anomalies as well as other Phase I (Identification) methods, Phase II (Evaluation), and Phase III (Treatment) are provided on a case-by-case basis in response to permit applications and research designs submitted for review.

If Phase II or Phase III investigations involve recording of watercraft or maritime structures, work will seldom rely on traditional photography or electronic remote sensing alone. Rather, it will involve a combination of traditional architectural documentation and additional data collection via computer vision photogrammetry, and/or laser scanning to create measured drawings which meet HABS/HAER standards and guidelines. Information relevant to traditional architectural documentation and illustration of watercraft can be found in:

Anderson, Richard
2004 *Guidelines for Recording Historic Ships. Historic American Buildings Survey/Historic American Engineering Record*. 3rd Edition. National Park Service. Washington, DC.

Lipke, Paul, Peter Spectre and Benjamin A. Fuller (editors)
1993 *Boats: A Manual for Their Documentation*. American Association for State and Local History. Nashville, TN.

Steffy, Richard
1994 *Wooden Ship Building and the Interpretation of Shipwrecks*. Texas A&M University Press. College Station, TX.

- **Expected Results**

The Expected Results section should discuss the number, size, location, burial conditions/depths, age, type and identity, methods and materials of construction, and the condition of the archaeological resources anticipated in the APE based on the information presented in the Background and Methods and Techniques sections. The section also should declare the quantities, types, and composition of archaeological objects and samples expected to be recovered along with details related to their field stabilization, handling/transport, conservation, and curation.

Site Registration and Reporting

All work conducted pursuant to federal and state historic preservation laws, and research conducted under an Intensive Survey or Data Recovery permit, must follow the guidance provided in Chapters V and VII related to site registration and reporting, as appropriate. Additional details are provided in Appendix III, and additional guidance will be provided by the State Underwater Archaeologist for projects related to Phase II (Evaluation), Phase III (Treatment), and Intensive Survey and Data Recovery Permits on a case-by-case basis.

Data Submission and Archiving

MHT may require submission of pertinent archival, archaeological, and other research data for studies conducted under an archaeological permit, work cited in support of an archaeological permit application, or to assist in the completion of a historic preservation review conducted in accordance with federal or state historic preservation laws (COMAR 34.04.03.04). This often includes raw and processed electronic remote sensing data in native file formats and post-processed exported formats, as well as submission of inventories in tabular form. Specific required data types and formats for Phase I (Identification) efforts using electronic remote sensing tools appear in Appendix III.

IX *Important Considerations*

Summary

This chapter provides expanded discussions on several topics mentioned in earlier chapters and applicable to archaeological investigations in Maryland. These topics include discussion of legislation and permits for archaeological work, MHT's library and data guidance, recommendations for the treatment of human remains, alternative survey and documentation techniques, and public outreach considerations.

Legislation and Permits

As archaeological resources are finite resources, the state maintains legislation that ensures the safety, survivability, and appropriate investigation of archaeological resources on lands or waters owned or controlled by Maryland. This legislation aims to prevent unauthorized and unprofessional excavation of archaeological resources, as well as prevent destruction and vandalism to sites. As archaeological investigation is a destructive science, another primary goal is to ensure that appropriate methods are utilized, and contextual information is recorded. As such, archaeological investigations conducted on federal or state-owned property require a permit. Project sponsors should obtain any necessary permits **before** initiating archaeological investigations on federal or state-owned land. For more information on the federal permit process, please consult with the federal land manager of the area where you propose to work.

In Maryland, there are two types of permits that may be obtained depending on the type of project: a terrestrial archaeology permit or an underwater archaeology permit.

- **Terrestrial Archaeology Permit**

In accordance with the Annotated Code of Maryland § 5A-342, a terrestrial archaeology permit is required prior to conducting any ground disturbing activity that may affect archaeological resources on state-owned or state-controlled land, **in any cave or rockshelter**, and on certain designated private property. Circumstances where this may apply include but are not limited to survey, excavation, coring/probing, and construction. Maryland law also pro-

Terrestrial Permit Items to Double-Check

The most common items that cause a terrestrial archaeology permit to be returned as incomplete are:

1) Failing to include signatures to fulfill **Item 15: the signature of the applicant** and **Item 16: Concurrence of state agency administering land for which permit is requested.**

2) Not initialing the lower right corner of the Special Conditions page.

3) Qualifications statements (resume/vita) must be limited to no more than 2 pages.

vides penalties for violations of § 5A-342, which include the potential for imprisonment not exceeding 30 days or a fine not exceeding $1,000 or both. **Each day on which a violation occurs is a separate violation.** MHT may also reject future terrestrial archaeology permit applications submitted by individuals or firms with a history of failing to obtain the requisite permits or a history of failing to fulfill permit conditions including producing final reports and submitting archaeological specimens for permanent curation. Work conducted on private property does not require a permit, but does require property owner permission. All property owners are encouraged to have any projects on their property meet the standards as noted below.

In order to obtain a permit, work must be conducted:

1) by qualified individuals associated with a museum, institution of higher learning, or other scientific or historic organizations;

2) according to a well-designed research plan;

3) in a manner that ensures that a final report is produced and that the objects and materials collected during excavation are properly safeguarded and preserved (typically this entails curation at the MAC Lab);

4) for the benefit of the citizens of Maryland; and

5) with close coordination with the land-managing entity.

To obtain a terrestrial archaeology permit, researchers must contact the State Terrestrial Archaeologist.

- **Underwater Archaeology Permit**

An underwater archaeology permit may be required for activities taking place in state waters. In Maryland, state waters include tidal waters up to the mean high tide line and three miles from the coastline, and non-tidal waters within the boundaries of the state that were navigable under the laws of the United States as of April 28, 1788, up to the ordinary high water mark. Generally speaking, MHT regulates and manages all precontact and historic cultural remains in, partially in, or submerged beneath state waters.

A permit is **not** required to inspect, study, explore, photograph, measure, record, conduct a reconnaissance survey, or otherwise use and enjoy a submerged archaeological historic property if the use or activity **does not**:

1) involve excavation, destruction, or substantive injury of the historic property or its immediate environment;

2) endanger other persons or property; or

3) violate other regulations or provisions of federal, state, or local law.

Any other activities may require a permit to be obtained. **These types of activities might include dredging, excavation, and/or magnet fishing**. Permits will only be granted to those meeting the Secretary of the Interior's Professional Qualifications Standards with experience in underwater undertakings.

To obtain an underwater archaeology permit, researchers must contact the State Underwater Archaeologist. Additionally, Md. Code Ann., State Fin. & Proc. § 5A-340-341 and Md. Code Regs. 34.04.03 should be consulted for the number and nature of the supporting documents required to attach to the permit application. For more information on Underwater Archaeology Permits and Underwater Archaeology considerations in general, see Chapter VIII.

In the cases of both terrestrial and underwater archaeology, permits may be contingent upon submitting reports and other documentation to MHT upon completion of the work.

Maryland Historical Trust Library and Data Considerations

MHT Library: The MHT Library is the state's principal repository for information about Maryland's architectural, archaeological, and cultural resources. The library holds over 5,000 books and journals, as well as architectural and archaeological survey reports, historical contexts, quad files, vertical files, architectural drawings, slides and photographs, and oral histories. The library is open to researchers only during specific times, so researchers must consult the MHT website for open hours and contact the librarian to make an appointment. The librarian is available for reference assistance and consultation for research on Maryland history, historic preservation, historic properties, and archaeology. Consultations with the MHT Librarian may be scheduled by email or phone.

Additionally, the MHT Library hosts an Online Library Catalog which may be used by researchers. The online catalog contains records of books, journals, site-specific reports, historic maps, historic structure reports, preservation plans, and architectural drawings available to researchers. Duplicate copies of many reports, books, and especially artifact guides are also available in the JPPM Research Library for archaeologists working with collections.

It should be noted that all material relating to Maryland's archaeological sites is accessible only to qualified researchers who have a valid Medusa account. Researchers requiring access to material related to archaeological sites must be approved for a Medusa account (or proxy account if working with a qualified Principal Investigator) before requesting an appointment.

Submission of Reports and Forms: When submitting reports, forms, or other data to the Maryland Historical Trust, it is important to ensure that you are sending the correct information in the proper format.

Unless otherwise specified by consultation or grant requirements, researchers can send one physical copy and one digital copy of archaeological reports to the Archaeological Registrar at MHT (see address below). The digital copy can be sent through email as a .PDF file; if the size of the file is too large to send through email, researchers may send a flash drive or CD with the file on it (which will be kept by MHT for retention) or contact the Archaeological Registrar about online file transfer options.

When submitting an Maryland Inventory (Archaeology) site form, it must first be submitted to the Archaeological Registrar in order to receive a site number (see Chapter V for

more information). The preferred method of submittal is as a Microsoft Word document, emailed to the Archaeological Registrar. The USGS quadrangle map, the sketch map, soil profiles, and any photographs you choose to include may either be pasted into the document itself or sent as separate email attachments.

If the file is too large to email, it is recommended that the graphics be sent separately. Large numbers of site forms or files of unusual size are requested on a CD or flash drive for MHT retention. To inquire about other forms of digital submission, please contact the Archaeological Registrar (***MHT Staff Directory***). If digital submittal is not possible, the form may be printed and mailed to:

Archaeological Registrar
Maryland Historical Trust
Maryland Department of Planning
100 Community Place
Crownsville, MD 20132

Submission of GIS Data: Submitting GIS data with archaeological site forms and surveys greatly improves the speed and accuracy of documenting these sites in the inventory. The GIS data is also used for research and analysis purposes. GIS files are not required when submitting forms or reports, but it is highly recommended if the files are already in existence.

GIS files need to be submitted in a format that is compatible with the state GIS system. The current standard for files being accepted is either an ESRI shapefile or file geodatabase. The file format may change over time so please coordinate with MHT staff to send the most current accepted format.

Files should be named to correspond to what documents are being submitted (i.e. site name or project name). If submitting multiple documents, the GIS attribute data should clearly indicate which polygon is related to which document being submitted. The file naming convention for multiple forms should be the project name and consultant name.

GIS data needs to be submitted in either State Plane 1983 Meters coordinate system or the coordinate systems should be documented for use in our GIS system. Coordinate system standards will change over time so please check with MHT staff on current standards.

Federal Geographic Data Committee (FGDC) compliant metadata must be included with all submitted GIS data. This must include the originator of the data, how it was collected, the date, and coordinate system used for collection.

Cemeteries and Human Remains

Cemeteries as a cultural resource often require special consideration because of the variety of elements that may be encountered in the field. In addition to the subsurface nature of the graves, cemeteries may have above ground resources associated with them as well, including but not limited to grave markers, mausoleums, columbaria, walls, signs, walkways, roads, and gardens. Alternatively, graves may have no markers associated with them at all. This may be the case for precontact and Native American burials, cemeteries for enslaved individuals, or those that have had markers removed. As such, the archaeological

***FIGURE 10** - A view of the eroding Anchor of Hope Cemetery on Hooper's Island, Dorchester County.*

investigation or treatment of any human remains and burial sites must be undertaken with sensitivity and in full compliance with applicable federal and state law.

- **Consultation**

In an effort to protect cemeteries and burial grounds, the Real Property article of the Maryland Code requires consultation with the Maryland Historical Trust regarding physical changes within historic cemeteries. Section 14-121, to which this provision refers, defines "burial site" as:

> "any natural or prepared physical location, whether originally located below, on, or above the surface of the earth into which human remains or associated funerary objects are deposited as a part of a death rite or ceremony of any culture, religion, or group."

The code specifically notes that the resource must have been in existence for 50 years or more, or that the majority of those interred in the cemetery have been interred for more than 50 years. In the case that the cemetery is modern, the State of Maryland Office of Cemetery Oversight is the agency in charge of registration, permitting, and other management tasks.

Under these provisions, the owner of a covered burial site is required to consult with MHT before altering one or more of the following: (1) grave markers, (2) human remains, or (3) the environment surrounding the burial site. Consultation may be initiated by submitting a Cemetery Consultation Form that is conveniently located on the MHT website. The advice provided by the Maryland Historical Trust is non-binding for the owner of the burial site.

The statute outlines that it will be the owner of the cemetery (or the land that encompasses it) who consults with MHT. Where the property at issue has no known owner, however, MHT will offer non-binding guidance about the proper treatment of markers and other aspects of the burial site in an effort to further the statute's preservation goal.

Please be advised, however, that **MHT cannot waive the applicable statutory provisions or authorize or condone a trespass,** so it is important that you have made every effort to identify the owner of the property and obtain the owner's permission before entering onto the property at issue.

- **Survey and Documentation**

In general, MHT does not encourage the excavation of human remains, unless those remains are imminently threatened by natural or human forces, or unless those resources have outstanding research potential. Cemeteries and burials should be located, recorded, and evaluated when discovered incidentally during archeological investigations.

The nature of the cemeteries or burials will determine which MHT form the researcher should record site information on. If the resource only has a subsurface component or there is concern that the location of the graves should only be available to professionals or property owners, then a Maryland Inventory of Historic Properties (Archaeology) form should be submitted. If the resource is a known cemetery with obtrusive aboveground components, then a Maryland Inventory of Historic Properties (Architecture) form should be submitted.

Phase I and II archaeological survey efforts should utilize non-destructive techniques to determine boundaries, age, cultural affiliation, and significance of the cemetery/burial. Such techniques may include extensive background and historical research, informant interviews, thorough visual examination, careful (and limited) probing by professionals, ground penetrating radar, or other scientifically well-established and appropriate remote sensing techniques.

The use of dowsing rods or similar methods are not considered reliable techniques for identifying graves. The US Geological Survey has determined that scientific evaluations indicate that dowsing is a pseudoscience and that further testing of dowsing would be a misuse of public funds (Ellis 1917; USGS 1977). In regard to dowsing for human remains, the Federal Bureau of Investigation states that using the unreliable and unsubstantiated search method of dowsing has detrimental effects on investigations, including unnecessary financial expenditures, time and other resource costs, and false hope among investigators and loved ones (Easter and Christensen 2022). **As such, MHT does not consider this to be an appropriate method for identifying graves and will not consider such work viable.**

The use of specially trained "decomposition dogs" or "cadaver dogs" can be a supplemental technique for cemetery location and delineation. However, additional controlled studies are needed to understand the range of variation and effectiveness of trained dogs. **Until such studies have been peer reviewed, published, and widely accepted by the scientific community, MHT recommends that cadaver dog surveys be coupled with GPR, other remote sensing techniques, visual examination, or probing to ensure that false positive "hits" are not artificially creating "cemeteries" where there are none.**

A Phase II site evaluation should examine the significance of the cemetery/burial place applying the National Register criteria. Generally, cemeteries and burial places are not considered eligible for the National Register (36 CFR § 60.4). However, cemeteries/burial places may be eligible if they are integral parts of a larger historic district or site; if they derive primary significance from graves of persons of transcendent importance, age, association with historic events, or distinctive design features; or if their principal significance is their ability to yield important information. For further guidance on assessing the significance of cemeteries, see the National Park Service's *National Register Bulletin 41, Guidelines for Evaluating and Registering Cemeteries and Burial Places*.

If identification and evaluation efforts determine that a cemetery or burial is not eligible for the National Register, the project sponsor/agency should comply with appropriate federal and Maryland law in further treatment of the resource.

Excavation of cemeteries and burials is only appropriate for Phase III investigations. If excavation is deemed necessary, it must occur in full compliance with applicable federal and state law and following appropriate consultation with all relevant parties.

- **Consultation with Descendant Communities**

MHT encourages consultation with descendant and ancestral communities, and in some cases, it may be required by state or federal law (see Chapter I on Consultation), or in accordance with programmatic agreements or other applicable guidance.

In circumstances where Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony are located on federal or tribal land, the **Native American Graves and Repatriation Act (NAGPRA)** will be applicable. Additionally, if the remains or associated objects come into the custody of an entity considered to be a "museum" under the definition of NAGPRA, consultation with federally recognized tribes must occur. To learn more about the responsibilities and procedures mandated by NAGPRA, consult the Department of Interior ruling (43 CFR 10).

MHT encourages consultation with culturally affiliated groups when a burial is encountered in Maryland. Cultural affiliation is a relationship of shared group identity or culture that can reasonably be traced historically or prehistorically between a present-day community and an identifiable earlier community. For assistance with identifying potential descendant communities, seek advice from the ***Governor's Office of Community Initiatives (GOCI) Ethnic Commissions***. There are seven Ethnic Commissions:

- Maryland Commission on Indian Affairs
- Governor's Commission on African Affairs
- Governor's Commission on Asian Pacific American Affairs
- Governor's Commission on Caribbean Affairs
- Governor's Commission on Hispanic Affairs
- Governor's Commission on Middle Eastern American Affairs
- Governor's Commission on South Asian American Affairs

Additionally, the Maryland Commission on African American History and Culture (MCAAHC), now an independent agency outside of GOCI, is committed to discovering, documenting, preserving, collecting, and promoting Maryland's African American heritage. The Commission also provides technical assistance to institutions and groups with

similar objectives. In 2022, a joint effort by the MCAAHC and MHT concluded with a report on historic African American cemeteries and the threats faced by these resources. The report also outlines ways in which MCAAHC can work with the descendants of those interred in African American cemeteries and burial grounds.

- **Unanticipated Discoveries**

If human remains are discovered during construction or similar projects, all work should halt in the vicinity of the discovery until the appropriate authorities have been notified. Occasionally human remains are encountered in the field by hikers, hunters, boaters, and other outdoor enthusiasts, who likely have no understanding of the laws related to human burials. Regardless of the mechanism of discovery, the Maryland State Police, State's Attorney for the county, and the Maryland Historical Trust should all be contacted when human remains are discovered. For compliance projects, work may not continue until the relevant parties have agreed upon a course of action. Likewise, it is generally a best practice not to publicize or widely distribute information about the discovery. **Members of the public may need to be made aware that under Maryland burial law (MD Code Ann. § 10-402), the removal of human remains without authority (from the State's Attorney) is strictly prohibited.**

If human remains are unexpectedly discovered in a previously generated archaeological collection, please contact MHT for consultation. MHT will assist in determining whether the remains are recent enough that they could potentially have law enforcement significance. If so, then the State's Attorney's Office for the relevant jurisdiction should be contacted to determine whether the remains are relevant to a criminal investigation, bear evidence of a prosecutable crime, or have other value to the State Medical Examiner's Office. If the remains are determined to not have historic, forensic, or medical significance, then the collection owner should proceed with the disposition of the remains by either 1) repatriating ethnic remains to the state commission associated with that ethnic group, or 2) determining a final disposition for the remains in accordance with Maryland Law (See Md. Code Ann., Health-General § 5-514).

Geophysical Survey and Alternative Documentation Techniques

The archaeological field has advanced through the years to now include tactics that do not cause ground disturbance through survey. Many of these techniques are now cost-effective, easy to use, faster, and can help narrow down an area of interest more precisely than traditional shovel test pit excavation. **The list below is not exhaustive of all techniques and as time progresses, newer technology may be introduced to aid in archaeological survey.**

- **Magnetic Susceptibility Survey and Earth Conductivity Survey**

Magnetic susceptibility survey measures the degree to which soils become magnetized in response to an applied magnetic field. It detects changes in the magnetic properties of soil to identify areas of interest for further study. It is especially helpful for identifying where soil has been disturbed, where burning has occurred, and where organic materials are incorporated. Magnetic susceptibility survey is good for rapid data collection and large area coverage and can be deployed in wooded areas. It is also easy to learn, which makes it an ideal tool for volunteers to utilize under professional guidance. Because the results are presented as "hot spots" instead of exact feature size, shape, or depth, ground

truthing is necessary to determine if the anomaly is cultural in nature.

When used as a prospecting survey (i.e. as areal survey to search for anomalous soils), topsoil measurements of magnetic susceptibility should be spaced no more than 10 meters apart in transects also spaced no more than 10 meters apart (David, Linford, and Linford 2008: 4). Tighter intervals may be appropriate depending on survey goals.

An earth conductivity survey measures the ability of the soil to conduct an electric current. This is accomplished by using an electromagnetic induction meter, which will create an electromagnetic signal and measure how well the signal is conducted by the soil. Unlike an electrical resistivity survey (discussed below), there is no connection to the ground. Two coils are instead placed near ground surface, one that broadcasts the signal and one that receives the signal from the conductive material below the surface. When carrying out conductivity surveys, archaeologists should consider the spacing between the two coils and the natural conductivity of the soils expected at the site (Clay 2006). Conductivity surveys are good for rapid data collection in areas that are not easily surveyed by other means, such as wooded areas and tall grass.

When reporting magnetic susceptibility survey results, researchers should include the following information in addition to other required components of a report (see Ch VII):

1) Qualifications of the surveyor;
2) Summary of collection strategy, including (as applicable)
    - Site environmental setting, weather, soils, & other factors that may impact results
    - Magnetic Susceptibility/Earth Conductivity Meter make and model
    - Sampling frequency
    - Interval length between readings and/or transect spacing
    - Equipment settings
    - Distance between coils;
3) Raw data results; and
4) Data processing software or interpolation methodology, results, & interpretation

- **Electrical Resistivity Survey**

An electrical resistivity survey measures the variations in electrical resistance in the ground. By placing electrodes in the ground to pass an electric current between, archaeologists can then measure the resulting voltage to determine resistivity. When done correctly, the values can be interpreted to determine the depth, shape, and character of any subsurface anomalies that may be of archaeological interest. When conducting resistivity surveys, archaeologists should consider the interval between electrodes, as this is a key factor in determining the depth surveyed and the resolution of the data (Johnson 2006).

When reporting resistivity survey results, researchers should include the following information in addition to other required components of a report (see Ch VII):

1) Qualifications of the surveyor;
2) Summary of collection strategy, including (as applicable)
    - Site environmental setting, weather, soils, & other factors that may impact results
    - Instrument make and model
    - Interval between electrodes;
3) Data processing software or interpolation methodology, results, & interpretation

- **Gradiometry/Magnetometry**

Gradiometer survey measures local variations in the natural magnetic field by using two mounted sensors (magnetometers) and measuring the gradient between them. This type of survey can detect anomalous patterns that can indicate the presence of metallic artifacts, features containing soils with slightly elevated magnetic oxides, and features like walls, roads, and ditches below the soil surface. Gradiometer survey is best conducted in open fields. Because the results do not identify the type of feature or disturbance, ground truthing is generally necessary to determine if the anomaly is cultural in nature.

Gradiometer and magnetometer survey parameters are most often dictated by the limitations of the specific type of equipment used. For this reason, reporting both the equipment and the data collection methodology is important. All data interpolation maps produced by such surveys should be tied to either permanent datums or high-precision (sub-meter accurate) GPS coordinates. Strict care should be exercised during the establishment of survey grids to avoid interference from modern metals (pin flags, metallic tapes, survey pins, etc.).

When reporting gradiometer/magnetometry survey results, researchers should include the following information in addition to other required components of a report (see Ch VII):

1) Qualifications of the surveyor;
2) Summary of collection strategy, including (as applicable)
    - Site environmental setting, weather, soils, & other factors that may impact results
    - Gradiometer make and model
    - Equipment settings (instrument resolution/sensitivity, sampling interval within transects, bi-directional vs. unidirectional data collection, GPS data stream, etc.)
    - Survey transect/block size;
3) Data processing methodology, results, and interpretations

- **Ground Penetrating Radar**

Ground-penetrating radar (GPR) is a non-invasive technique in which the machine emits electromagnetic pulses into the ground. The machine then measures the amount of energy that is reflected back and the time it takes to reach the surface. By doing this, the GPR is able to provide high-resolution imagery and depth information for features below the surface. The results will identify the depth, size, and shape of the feature or disturbance. However, ground truthing is necessary to determine if the anomaly is cultural in nature.

While archaeological GPR surveys can have a real time prospecting component, they must record data to be post-processed, analyzed, and reported. "Spray Can" surveys are not acceptable under these standards. In most cases, GPR survey blocks should be tied either to a permanent survey datum or high-precision (sub-meter accurate) GPS coordinates and typically measure no more than 50 X 50 m in size with data collected unidirectionally. While transect spacing will depend on survey goals, MHT recommends intervals of no more than 50 cm for identifying historic resources and no more than 25 cm for both identifying prehistoric/precontact resources and during cemetery delineations unless supported by equipment and software that can accept real time data streams from a GPS unit with sub-centimeter accuracy. Case-by-case variances to these recommendations may be considered and project-specific coordination is encouraged to ensure successful project completion and allow continued refinement and innovation of survey methods. For additional survey recommendations, see Chapter II: Identification (Phase I).

When reporting GPR survey results, researchers should include the following information in addition to other required components of a report (see Ch VII):

1) Qualifications of the surveyor;
2) Summary of collection strategy, including (as applicable)
    - Site environmental setting, weather, soils, & other factors that may impact results
    - GPR make and model
    - Equipment settings and calibration procedures
    - Transect interval spacing and direction;
3) Data processing methodology, results, and interpretations

- **Metal Detecting**

The relationship between metal detecting and archaeology has often been tenuous. In recent years, however, archaeologists have come to acknowledge the metal detector as a valuable tool. Metal detectors can help identify unknown archaeological sites, delineate site boundaries, or narrow down areas of interest within a larger archaeological site. For some sites, such as battlefields or encampment sites, metal detecting has proven to be more efficient than traditional survey techniques like shovel test pits. It is important to note, however, that the success and merits of using metal detectors in archaeology depends on defensible survey techniques and a trained operator. As with any other type of survey, the research design and budget should be appropriate to the level of survey (see Chapters II and III for guidance on research design).

While there is no training requirement, it is recommended that operators have previous experience with their metal detectors and have undergone training specific to metal detecting on archaeological sites or are supervised by someone with extensive archaeological knowledge. Machines should be waterproof, multi-frequency metal detectors that are recent models, as technology is always improving.

Field methods may vary depending on the type of resource surveyed, potential density for trash, environment, and other factors. As such, these recommendations should be seen only as a general starting point for survey. In general, MHT encourages surveys to be completed in systematic transects across a defined area. Transects should not be wider than the swinging arc of the metal detector, approximately 1 to 1.5 meters (~3 to 5 feet) wide. Overlap between survey transects is encouraged. Survey transect length may vary based on whether it is being conducted at a Phase I or Phase II level. MHT recommends transect lengths no greater than 30 meters (~100 feet) for Phase I surveys, and no greater than 10 meters (~33 feet) for Phase II surveys. When survey transects are not easily feasible, such as in a wooded area, surveyors should mark the limits of their survey area and attempt to completely cover the area; this may be done visually or by using a fixed bearing. It may be necessary to remove vegetation in the area prior to conducting surveys.

Metal detector targets should be marked with a nylon- or wooden-stemmed flag and recorded with either a GPS unit or total station. When ground-truthing a target, a hand-held metal detector pin pointer should be used to limit the amount of ground disturbance needed to locate the target, and excavators should ordinarily take care not to excavate below the plowzone/topsoil. Once the target is identified, the metal detector should always be passed over the hole again to ensure that no other targets are discovered. It may not always be prudent to collect every target, so when applicable, the percentage of recovery rate should be noted in the survey plan. If the target is not collected, it should be returned to the provenience from which it came.

When reporting metal detector survey results, researchers should include the following information in addition to other required components of a report (see Ch VII):

1) Qualifications of the surveyor(s);
2) Summary and justification of collection strategy, including (as applicable)
   - Site environmental setting, weather, soils, & other factors that may impact results
   - Metal detector model(s) used
   - Survey area coverage, including transect length and width (if applicable)
   - Time spent surveying
   - Artifact retention strategy
   - Trash collection/discard strategy and count
   - Unexploded ordnance(UXO) plan, if applicable;
3) Survey results & interpretation, including (as applicable)
   - Artifacts recovered, provenience information (including depth), photographs, and final disposition of artifacts (collected or returned to provenience)
   - Final maps of artifact distribution.

- **Advanced Visualization**

There are two types of advanced visualization that may be utilized in the course of archaeological work: survey-based techniques and reconstruction-based techniques. Both types of advanced visualizations are useful for sharing archaeological data and analyses, especially with the public. Oftentimes, they are a more detailed and easily understandable visual aid than traditional maps, drawings, and renderings. This guidance document will not attempt to outline best practices for either technique in these rapidly evolving fields, but will instead focus on what should be reported when either technique is uti-

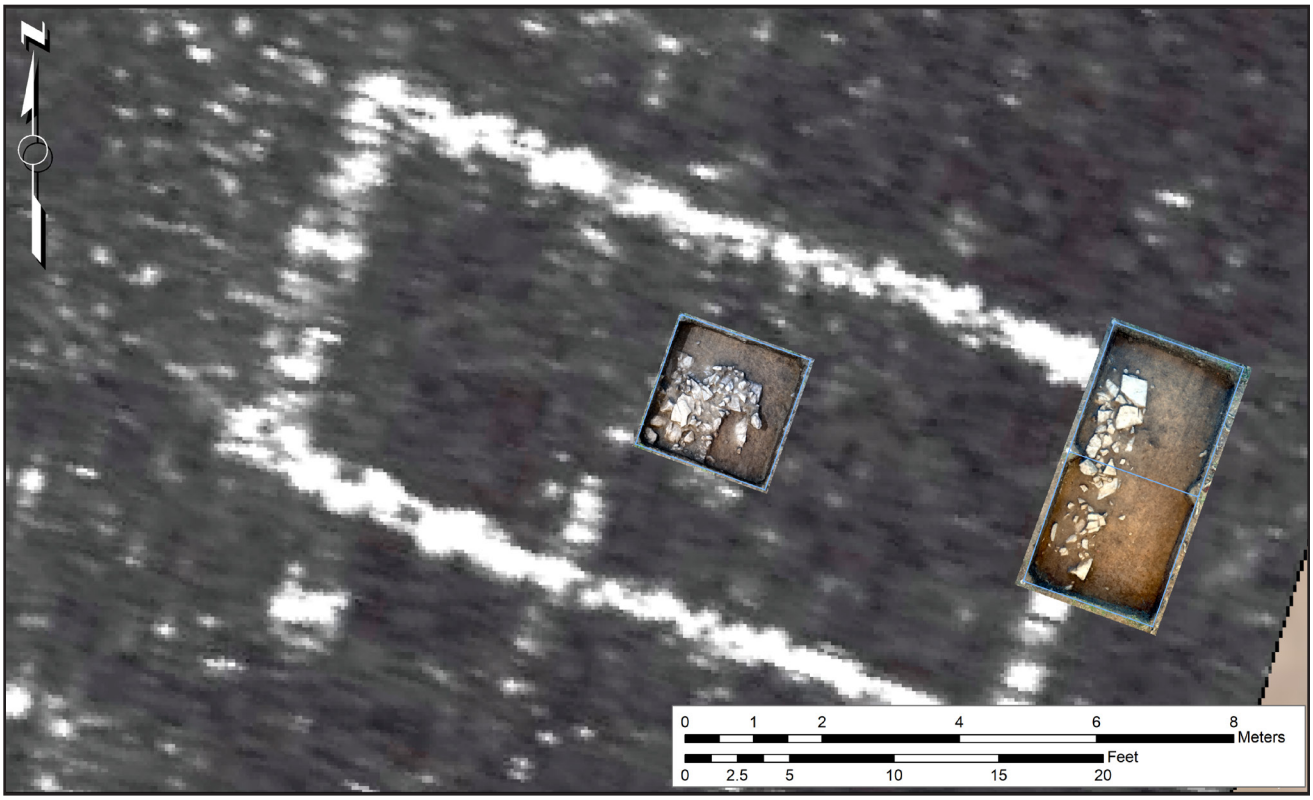


FIGURE 11 *- Photogrammetric image of excavated units overlaid on GPR imagery at the Maidens Choice I Site (18WA634) following ground-truthing by MHT and the Archeological Society of Maryland.*

lized in archaeological investigations.

Survey-based visualizations are a way for archaeologists to record existing features and artifacts that are uncovered during fieldwork. While similar to field drawings or artifact illustrations, the key difference is that advanced equipment records the features or artifacts instead of humans. The end product is a permanent, digital model of the subject that can be moved/manipulated, measured, and cycled through various views. Examples of survey-based techniques include photogrammetry, LiDAR, and laser scanning.

An outline of the methodology should be provided when survey-based visualizations are included in an archaeological report. This should minimally include:

1) Type of camera/equipment used to capture the imagery;
2) Use of ground control points or other georectification methods, as appropriate;
3) Software used for model creation; and
4) Number of images used.

When presenting the final model images, standard mapping elements (north arrow, scale, etc.) should still be included. If the model is presented as a perspective image, an appropriate 3-dimensional north arrow (with X, Y, Z axes clearly indicated) should be used.

Reconstruction-based visualizations do not duplicate features and artifacts for digital records, but rather create a rendering of theoretical features using other data sources. 3D reconstructions and artist renderings are two examples of reconstruction-based

***FIGURE 12** - An architectural historian's and archaeologist's interpretation and 3D rendering of the stone slave quarter at Belvoir Plantation based on archaeological evidence recovered by MDOT-SHA (Crowl et al. 2022: Figure 114).*

visualizations. For reconstruction-based visualizations, artists can use sources to help flesh out their models, including but not limited to existing archaeological features, photographs, descriptions in deeds and mortgages, other literature sources, and extant examples of design or style that are contemporary with the reconstruction.

When including a reconstruction-based visualization in archaeological work, it should be noted that creative license was taken. Data sources used to create the imagery should also be properly cited.

Public Outreach Considerations

Archaeology is often perceived as an exclusive, academic field in which the public plays no role. To the contrary, one tenet of undertaking responsible archaeological work is the dissemination of information gained from this work. In order to bridge the gap between the public and professionals, archaeologists have to take an active role in encouraging public engagement and education. When done effectively, public outreach can promote an interest in archaeological work and lead to conservation and protection of archaeological sites.

Federal and state laws sometimes require a public education and interpretation component as part of the consultation process (See Chapters I and IV for more information). However, MHT encourages that public education initiatives be considered even when not required by law. The extent and method of public outreach will depend on a variety of factors, including the type of project, resource type, resource location, and the priorities and interests of the project sponsor, principal investigators, and the public.

The following list includes a sample of various public outreach options:

- Press releases and conferences about the site and/or fieldwork
- Social media posts, websites, and blogs
- Popular publications (brochures, booklets, fact sheets)
- Posters
- Volunteer opportunities for field and lab work
- Tours for school groups
- Presentations to schools and special interest groups
- Development of school curriculum
- Video productions and documentary films
- Citizen science projects
- StoryMaps
- Exhibits and displays
- Virtual reality (VR), augmented reality (AR), and gaming experiences

This list in not exhaustive and MHT encourages creative methods for involving the public in archaeological research. Whichever type(s) of public outreach initiatives are taken, the following factors should always be considered:

- **Sensitive Topics**
  Certain topics, while important to address, may require tactful presentations. Public outreach that includes sensitive or difficult histories should be approached with care and may benefit from consultation with community leaders and interest groups prior to oc-

curring. Measures may include developing culturally sensitive language or censoring or excluding potentially sensitive imagery, such as that of human remains.

- **Audience**
  Consider the background of your audience, including but not limited to age, ability, and education level. Professional conference papers and presentations, while still a key part of disseminating information, are sometimes not suitable for public consumption. Archaeological jargon should be limited, and care should be taken to choose wording that will help non-experts understand potentially complex archaeological ideas.

- **Platform**
  With the expansion of technology, outreach can be held virtually, in-person, or as hybrid programming. Using a variety of options ensures that a broad spectrum of participants may attend, especially when interested members of the public may not be local to the site.

- **Timing**
  Outreach can be undertaken at any time, but some projects may benefit from strategic timing of public participation. Project personnel may want to consider initiating public outreach before a project is undertaken if the goal is to inform them of the project or learn more about the site through local knowledge. Outreach may be appropriate during fieldwork to keep the public updated on the project, to expand their knowledge of the archaeological process, or to supplement fieldwork with public participation. Once the project has completed, public outreach should focus on disseminating the information in a variety of forms. Completing outreach during all three times can lead to a well-rounded archaeological investigation.

Upon request, MHT will review scopes of work and recommend public outreach initiatives for projects.

Safety in the Field

Archaeological fieldwork involves extended periods outdoors and exposure to the elements (sun/rain/cold/heat), as well as potential exposure to noxious and/or thorny vegetation (poison ivy, briars). Occasional exposure to potentially harmful fauna (insects, snakes, dogs), as well as field equipment-related injury can occur if proper safety gear and protocols are not put in place. Poorly planned fieldwork can involve exposure to even more hazardous conditions which may result in injury.

Planning and risk management in archaeological fieldwork is a topic that reaches far beyond the scope of this document. But being cognizant of these dangers and taking steps to mitigate those risks should be a part of the project planning stage for all fieldwork. Seeking out first aid and cardiopulmonary resuscitation (CPR) training for field teams, and ensuring that all proposed work follows the health and safety standards established by the U.S. Department of Labor - Occupational Safety and Health Administration (OSHA) is the responsibility of principal investigators and project planners. Resources to help with such tasks are available from the OSHA Website, the Maryland Occupational Safety and Health (MOSH) - Division of Labor and Industry, and from the Register of Professional Archaeologists.

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Advisory Council on Historic Preservation
https://www.achp.gov/

Archeological Society of Maryland, Inc.
https://marylandarcheology.org/chapters.html

Council for Maryland Archeology, Inc.
https://cfma-md.org/

Diagnostic Artifacts in Maryland (Prehistoric Contexts)
https://apps.jefpat.maryland.gov/diagnostic/PrehistoricCeramics/prehistoryinMD.html

Governor's Office of Community Initiatives - Ethnic Commissions
https://goci.maryland.gov/ethnic-commissions/

Historic African American Cemeteries- Report to the Chairmen of the Senate Budget and Taxation Committee and House Appropriations Committee
https://mht.maryland.gov/Documents/home/2022-Historic-African-American-Cemeteries-JCR-Report.pdf

Maryland Archaeological Synthesis Project
https://apps.mht.maryland.gov/synthesis/

Maryland Historical Trust Forms and Guidelines Section
https://mht.maryland.gov/identify-document/archaeological-survey/archaeology-maryland-inventory-historic-properties

Maryland Historical Trust Staff Directory
https://mht.maryland.gov/about/staff-directory

Maryland Land Records (MDLandRec)
https://mdlandrec.net/main/

Maryland Occupational Safety and Health Resources
https://labor.maryland.gov/labor/mosh/train.shtml

MD iMAP
https://imap.maryland.gov/

Medusa
https://apps.mht.maryland.gov/medusa

Occupational Safety and Health Administration
https://www.osha.gov/laws-regs

Plats.Net
https://plats.msa.maryland.gov/

Register of Professional Archaeologists - Safety Guides
https://www.rpanet.org/safetyguides

Society for American Archaeology (SAA) Principles of Archaeological Ethics
https://www.saa.org/career-practice/ethics-in-archaeology

Society for American Archaeology (SAA) Style Guide
https://www.saa.org/publications/the-saa-press

Society for Historical Archaeology (SHA) Ethics Principles
https://sha.org/about-us/ethics-statement/

Secretary of the Interior 's Professional Qualifications Standards
https://www.doi.gov/pam/asset-management/historic-preservation/PQS

Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation
https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

XI *Appendices*

Appendix I

Mandatory Report Checklist

MHT is now requiring the use of the attached Mandatory Report Checklist when submitting all project reports for compliance review. The checklist must be included with the cover letter that customarily accompanies each report.

Mandatory Report Checklist

Instructions: Print and fill out this checklist to ensure that the report contains at least the minimum documentation required for MHT review. This checklist is based on the detailed information included in the *Standards and Guidelines for Archaeological Survey and Excavation in Maryland* (Henry et al. 2024). Read and check each line carefully; MHT staff review of a draft report will not begin until a complete report with checklist is submitted.

☐ Title Page – title, date, name and location of project, names and addresses of author(s), PI, and project sponsor

☐ Executive Summary – 3-5 page summary of project, nature of state and/or federal involvement, purpose of historic preservation work, findings, and recommendations written for a general audience (no detailed site locations)

☐ Table of Contents – entries for all report chapters and lists of all figures, tables and appendices

☐ Introduction – brief statement on purpose of historic preservation work, project description, anticipated impacts (direct and indirect), identification of lead government agency, dates when background research and field investigations were conducted, and titles of historic preservation personnel

☐ Locator Maps – USGS quad map and aerial image appropriately scaled to display project boundaries and site context

☐ Research Design – objectives, expected results, methodology, final disposition of artifacts and field records

☐ Archival & Background Research – natural environments, synopsis of appropriate prehistoric and historic contexts, discussion of prior investigations in vicinity (within 2-mile radius) of project area

☐ Results

- ☐ Field conditions
- ☐ Qualitative and quantitative description and analysis of archaeological resources
- ☐ Use of official Maryland inventory numbers issued by MHT. Trinomial numbers must be used in text and figures of both draft and final reports
- ☐ Map(s) illustrating location of identified sites in relation to proposed impact areas
- ☐ Map(s) illustrating location of all STPs (noting results: positive, negative, not excavated), test units, etc.
- ☐ Artifact summary tables for each site examined (not just a printout of the project catalog)
- ☐ Artifact distribution & density maps
- ☐ Illustrations of representative soil profiles & diagnostic artifacts important to interpretation
- ☐ Interpretations of site(s) and assessment of project effects
- ☐ For Phase II reports only: definitive statement on resource eligibility

☐ Summary & Recommendations – summary of results, assessment of project impacts on identified sites, and discussion of need for additional investigations and/or resource treatment

☐ References Cited

☐ Appendices

Copy of MHT letter recommending archaeological investigations detailed in report
Other relevant project correspondence, including copies of *approved* permits for work on state/federal lands
Copies of any ancillary studies (faunal analyses, etc.)
Artifact inventory
Phase II reports must include MIHP update forms for archaeological sites
Qualifications of Principal Investigator
Digital copy of the report
Site plans (if available) of proposed project

Signed _____

Appendix II

List of Archive Repositories

The following list of archive repositories is organized by county. This list is not exhaustive, but will be periodically added to and updated when appropriate.

Revised January 2025

Archives of Maryland Online
https://aomol.msa.maryland.gov/
A Maryland State Archives electronic publication.

Albert S. Cook Library Special Collections and University Archives
Towson University
Albert S. Cook Library, Suite 505
8000 York Road
Towson, MD 21252
Phone: 410-704-2093
Email: spcoll@towson.edu
https://libraries.towson.edu/university-archives

Allegany County Public Library
31 Washington Street
Cumberland, MD 21502
Phone: 301-777-1200
https://www.alleganycountylibrary.info/
Branch Locations: Frostburg, George's Creek, LaVale, South Cumberland, Westernport.

Anne Arundel County Public Library
5 Harry S Truman Parkway
Annapolis, MD 21401
Phone: 410-983-3400
https://www.aacpl.net/genealogy
Branch Locations: There are 16 branch locations scattered throughout the county and the address above is for the administration offices only. Many of the holdings of the Kuethe Library (see below) are searchable through the County Library's online catalog.

Baltimore County Genealogical Society
P.O. Box 10085
Towson, MD 21285-0085
https://www.baltimoregenealogysociety.org/BCGShome/

Baltimore County Public Library
320 York Road
Towson, MD 21204
Phone: 410-887-6100
https://www.bcpl.info/
Branch Locations: There are 19 branch locations scattered throughout the county.

Calvert County Historical Society
70 Church Street
Prince Frederick, MD 20678
Phone: 410-535-2452
Email: cchsadmin@calverthistory.org
https://calverthistory.org/

Calvert County Public Library
850 Costley Way
Prince Frederick, MD 20678
Phone: 410-535-0291
Email: Ill.calv@calvertlibrary.info
https://calvertlibrary.info/
Branch Locations: Prince Frederick, Owings, North Beach, Solomons

Caroline County Public Library
100 Market Street
Denton, MD 21629
Phone: 410-479-1343
https://www.carolib.org/genealogy-and-local-history/
Branch Locations: Denton, Federalsburg, Greensboro

Carroll County Public Library
1100 Green Valley Road
New Windsor, MD 21776
Phone: 410-386-4500
https://www.carolib.org/genealogy-and-local-history/
Branch Locations: There are 7 branch locations scattered throughout the county and the address above is for the administration offices only. The collections of the Carroll County Genealogical Society are housed at the Westminster Branch (50 East Main Street).

Cecil County Public Library
485 Mauldin Avenue
North East, MD 21901
Phone: 410-996-1055
https://www.cecilcountylibrary.org/learn/history-genealogy
Branch Locations: Cecilton, Chesapeake City, Elkton, North East, Perryville, Rising Sun.

Charles County Public Library
2 Garrett Avenue
La Plata, MD 20646-5959
Phone: 301-934-9001
https://www.ccplonline.org/
Branch Locations: La Plata, Waldorf (2), Indian Head

Chesapeake Heartland Digital Archive
The Starr Center – Washington College
101 S. Water Street
Chestertown, MD 21620
Phone: 410-810-7161
Email: chesapeakeheartland@washcoll.edu
Chesapeake Heartland's mission is to preserve, digitize, interpret, and make accessible materials related to African American history and culture in Kent County, Maryland and beyond.

Digital Maryland
400 Cathedral Street
Baltimore, Maryland 21201
Phone: 410-545-6342
Email: DigitalMaryland@prattlibrary.org
Digital Maryland is a collaborative, statewide digital preservation program of the Enoch Pratt Free Library/Maryland State Library Resource Center.

Dorchester County Public Library
303 Gay Street
Cambridge, MD 21613
Phone: 410-228-7331
Email: infodesk@dorchesterlibrary.org
Branch Locations: Cambridge, Hurlock
https://www.dorchesterlibrary.org/

Edward H. Nabb Research Center for Delmarva History and Culture
Guerrieri Academic Commons, Room 430
Salisbury University
1101 Camden Avenue
Salisbury, MD 21801
Phone: 410-543-6312
Email: nabbcenter@salisbury.edu
https://www.salisbury.edu/libraries/nabb/

Enoch Pratt Free Library
400 Cathedral Street
Baltimore, MD 21201
Phone: 410-396-5430
Email: crc@prattlibrary.org
https://www.prattlibrary.org/

Frederick County Public Library
110 East Patrick Street
Frederick, MD 21701
Phone: 301-600-1613
https://www.fcpl.org/learn/history-genealogy
Branch Locations: There are 9 branch locations scattered throughout the county.

Frederick Douglas Library Special Collections and University Archives
University of Maryland – Eastern Shore
Princess Anne, MD 21853
Phone: 410-651-7696
https://wwwcp.umes.edu/fdl/special-collections-department-and-university-archives/

Garrett County Historical Society & Museum
107 South Second Street
Oakland, MD 21550
Phone: 301-334-3226
Email: info@garrettcountymuseums.com
https://garrettcountymuseums.com/genealogy/

Genealogical Society of Allegany County, Maryland
12401 Willowbrook Road
Cumberland, MD 21502
Phone: 301-777-8850
https://www.acgsmd.org/index.html
The research library is located in the Appalachian Collection of the Library at Allegany College of Maryland (12401 Willowbrook Road SE, Cumberland).

Harford County Public Library
1221-A Brass Mill Road
Belcamp, MD 21017
Phone: 410-638-3151
https://hcplonline.org/genealogy.php

Heritage Frederick
24 East Church St
Frederick, MD 21701
Phone: 301-663-1188
Email: archivist@frederickhistory.org
https://frederickhistory.org/
The research library contains the collections of the Historical Society of Frederick County and is open by appointment only.

Historical Society of Baltimore County
Historic Almshouse
9811 Van Buren Lane
Cockeysville, MD 21030
Phone: 410-666-1878
Email: info@hsobc.org
https://hsobc.pastperfectonline.com/

Historical Society of Cecil County
135 E. Main Street
Elkton, MD. 21921
Phone: 410-398-1790
https://cecilhistory.org/research-education/for-researchers/

Historical Society of Harford County
143 N. Main Street
Bel Air MD 21014
Phone: 410-838-7691
https://www.harfordhistory.org/

Howard County Historical Society Archive & Research Library
9421 Frederick Road
Ellicott City, MD 21042
Phone: 410-480-3250
Email: info@hchsmd.org
https://www.hchsmd.org/hchs-library-and-archive/

Howard County Public Library
9411 Frederick Road
Ellicott City, MD 21042
Phone: 410-313-7750
https://hclibrary.org/
Branch Locations: There are 7 branch locations scattered throughout the county. The historical and genealogical collections are housed at the Charles E. Miller Branch and Historical Center in Ellicott City.

Kent County Historical Society
Bordley History Center
301 High Street
Chestertown, MD 21620
Phone: 410-778-3499
Email: director@kentcountyhistory.org
https://kentcountyhistory.org/research/

Kent County Public Library
408 High Street
Chestertown, MD 21620
Phone: 410-778-3636
https://www.kentcountylibrary.org/explore-discover-and-find/genealogy-resources/
Branch Locations: Chestertown, Galena, Rock Hall

Kuethe Library
5 Crain Highway, SE
Glen Burnie, MD 21061
Phone: 410-760-9679
https://aachs.org/kuethe-library/
The Kuethe Library is jointly operated by the Ann Arrundell County Historical Society and the Anne Arundel Genealogical Society.

Maryland Center for History and Culture
H. Furlong Baldwin Library
610 Park Avenue
Baltimore , MD 21201
Phone: 410-685-3750
Email: info@mdhistory.org
https://www.mdhistory.org/
Formerly the Maryland Historical Society.

Maryland Historical Trust Library
100 Community Place, 3rd Floor
Crownsville, MD 21032
Phone: 410-697-9546
https://mht.maryland.gov/Pages/research/MHT-Library.aspx
Open by appointment only.

Maryland Land Records
https://mdlandrec.net/main/
A Maryland State Archives electronic publication (free registration required).

Maryland State Archives
State Archives Building
350 Rowe Blvd.
Annapolis, MD 21401
Phone: 410-260-6400
Email: msa.helpdesk@maryland.gov
https://msa.maryland.gov/

Maryland State Archives Listing of Local Historical and Genealogical Societies
https://guide.msa.maryland.gov/pages/viewer.aspx?page=societies
A Maryland State Archives electronic publication.

Maryland State Library Resource Center
Enoch Pratt Free Library
400 Cathedral Street
Baltimore, MD 21201
Phone: 410-396-5358
Email: pld@soc.lib.md.us
https://www.slrc.info/

Montgomery County Public Libraries
21 Maryland Avenue, Suite 310
Rockville, MD 20850
Phone: 240-777-0002
https://www.montgomerycountymd.gov/library/
Branch Locations: There are 22 branch locations scattered throughout the county.

Montgomery History
111 W. Montgomery Avenue
Rockville, MD 20850
Phone: 301-340-2974
Email: info@MontgomeryHistory.org
https://montgomeryhistory.org/visit-library/
The library and special collections of Montgomery History (The Historical Society of Montgomery County) is located at the Jane C. Sween Research at the Beall-Dawson Historical Park in Rockville (42 W. Middle Lane, Rockville, MD 20850).

Plats.net
https://plats.msa.maryland.gov/
A Maryland State Archives electronic publication.

Prince George's County Memorial Library System
9601 Capital Lane
Largo, MD 20774
Phone: 301-699-3500
https://www.pgcmls.info/
Branch Locations: There are 20 branch locations scattered throughout the county.

Prince George's County Genealogical Society
Prince Geroge's County Genealogy Library
12219 Tulip Grove Drive
Bowie, MD 20715
Phone: 301-262-2063
Email: library@pgcgs.org
https://www.pgcgs.org/
Open most Wednesdays.

Queen Anne's County Library
121 South Commerce Street
Centreville, MD 21617
Phone: 410-758-0980
https://www.qaclibrary.org/
Branch Locations: Centreville, Stevensville (The collections of the Kent island Heritage Society are housed at the Kent Island branch in Stevensville)

Ruth Enlow Library of Garrett County
6 North Second Street
Oakland, MD 21550
Phone: 301-334-3996
Email: genealogy@relib.net
https://www.relib.net/local-history-genealogy

Somerset County Library
11767 Beechwood Street
Princess Anne, MD 21853
Phone: 410-651-0852
https://www.somelibrary.org/
Branch Locations: Crisfield, Ewell, Princess Anne

Southern Maryland Studies Center
8730 Mitchell Road
La Plata, MD 20646
Phone: 301-934-7606
Email: smsc@csmd.edu
https://library.csmd.edu/smsc/archive/VeWebsite/
The Southern Maryland Studies Center houses materials that document the history and culture of southern Maryland.

St. Mary's County Historical Society
41680 Tudor Place
Leonardtown, MD 20650
Phone: 301-475-2467
Email: archives@stmaryshistory.org
https://www.stmaryshistory.org/
Call for current archives hours.

St. Mary's County Library
23630 Hayden Farm Lane
Leonardtown MD 20650
Phone: 301-475-2151
Email: info@stmalib.org
https://www.stmalib.org/research-learn/genealogy-local-history/
Branch Locations: Charlotte Hall, Leonardtown, Lexington Park

Talbot County Free Library
100 W. Dover St
Easton, MD 21601
Phone: 410-822-1626
https://www.tcfl.org/mdroom/
Branch Locations: Easton, St. Michaels. Genealogical materials are housed in the Maryland Room at the Easton Branch.

University of Maryland Special Collections
McKeldin Library – UMD
7649 Library Lane
College Park, MD 20742-7011
Phone: 301-405-0800
https://www.lib.umd.edu/collections/special

Upper Shore Genealogical Society of Maryland Family Research Center
12156 Greensboro Road
Greensboro, Maryland
Email: usgsmd@yahoo.com
http://usgsmd.org/
This repository encompasses historical records from Caroline, Dorchester, Kent, Queen Anne's and Talbot Counties.

Washington County Free Library
Alice Virginia & David W. Fletcher Branch
100 South Potomac Street
Hagerstown MD 21740
Phone: 301-739-3250
Email: westmdroom@washcolibrary.org
https://www.washcolibrary.org/genealogy
Branch Locations: There are 9 branch locations scattered throughout the county. Most genealogical and historical materials are housed in the Western Maryland Room at the Hagerstown Branch or have been scanned and are a part of WHILBR (see below).

Western Maryland's Historical Library (WHILBR)
100 South Potomac Street
Hagerstown, MD 21740
Phone: 301-739-3250
Email: whilbr@wmrl.info
https://www.whilbr.org/
Includes historical records and image collections from Allegany, Garrett, and Washington Counties.

Wicomico Public Library
122 South Division Street
Salisbury, MD 21801
Phone: 410-749-3612
https://www.wicomicolibrary.org/
Branch Locations: Salisbury, Salisbury Mall, Pittsville

Worcester County Public Library
307 N. Washington Street
Snow Hill, MD 21863
Phone: 410-632-2600
https://worcesterlibrary.org/
Branch Locations: Berlin, Ocean City, Ocean Pines, Pocomoke, Snow Hill

Appendix III

Recommendations for Reconnaissance Surveys related to Submerged Archaeological Historic Property

Revised March 2026

Recommendations for Reconnaissance Surveys related to Submerged Archaeological Historic Property

The recommendations outlined below should be used as a starting point when developing project-specific research designs for reconnaissance surveys using magnetometer, side scan sonar, and sub-bottom profiler systems in Maryland. They are applicable to most Phase I Identification surveys for historic preservation review pursuant to federal and/or state historic preservation laws in Maryland waters.

Suggestions for well-justified variations from these recommendations are welcome, which may include use of varied survey platforms, instruments, patterning, settings, and analytical methods, etc., and should be discussed with the State Underwater Archaeologist prior to submittal of any research design for review and comment.

In some cases, ground-truthing of contacts and anomalies or paleolandscape reconstruction are required to complete Phase I Identification studies. This document does not include recommendations related to these activities which often require archaeological permits and extended consultation. Such work may involve additional electronic remote sensing data collection, sediment removal, probing, coring, subsurface sampling, inspection and recording by diving archaeologists or remotely operated vehicles (ROVs), and specialized analyses.

Professional Qualifications

All work should be overseen by an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology with demonstrated experience acquiring, processing, and interpreting marine geophysical remote sensing data for archaeology using magnetometer, side scan sonar, and sub-bottom profiler systems. This archaeologist should be present during all survey operations and oversee data acquisition, processing, and interpretation.

Survey Area

For work proposed pursuant to federal or state historic preservation laws, the survey area should encompass the area of potential effects (APE), the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist, as it relates to submerged archaeological historic properties (36 CFR 800.16(d)). This includes not only the project footprint, but also all locations where bottom impacts, such as spud-placement, anchoring, beaching, grounding, dredging, material placement, and/or construction activities are expected to occur. These locations typically include the project footprint, additional staging and/or work areas, and access routes.

Instrumentation and Data Collection

Positioning and Navigation: A navigation system with sub-meter accuracy should be used continuously. Offsets between navigation antennae(s), the vessel center of motion and relevant sensor equipment and instruments should be measured, diagrammed, and programmed into a data acquisition system so that corrections are applied to data in real time. A navigation and data-logging computer should be used for maintaining course on transects and recording all pertinent navigation, position, and motion data. Survey vessel speed should not exceed 4 knots. A cable counter or similar device should be used and cable out distances should be input into the survey navigation system in real time for correction of towfish location to earth coordinates. Geospatial data should be submitted in a Geographic Coordinate System and

Maryland State Plane, NAD83, with units in meters. All digital geospatial data products are to be accompanied by complete metadata documentation.

Survey Patterning: Planned primary transect (line) spacing should not exceed 10 m (32.8 ft.), with offline distances not to exceed 3.0 m (10.0 ft.). Data should be collected using magnetometer and side scan sonar systems along each transect, and using a sub-bottom profiler system along every fourth transect or at a spacing not to exceed 30.0 m (98.4 ft.).

- Additional magnetometer and side scan sonar data should be collected to help characterize and inform interpretations of magnetic anomalies and side scan sonar contacts. The orientation, location and spacing of additional transects should be determined by the archaeologist during data acquisition. These additional transects should extend beyond the APE when necessary to provide context needed to inform and/or support interpretations.

Magnetometer: An optically-pumped or Overhauser magnetometer should be used to detect ferrous objects along all survey transects. Instrument sensitivity should be one nanoTesla or less ($\leq$1 nT), and the sampling rate should be between 4.0 and 10.0 Hz to ensure sufficient data point density. Background noise levels should not exceed a total of 3.0 nT peak to peak. The magnetometer should be towed submerged or floating a sufficient distance from the survey vessel to reduce associated noise to less than the acceptable background noise level and at a relatively consistent altitude resulting in a sensor height of no more than 6.0 m (19.7 ft.). Sensor heights should be documented, for example by using an integrated altimeter or by combining magnetometer tow depth and bathymetric survey results.

Magnetometer data should not be collected during geomagnetic storms and copies of daily geomagnetic forecasts and observations which show survey was conducted during times with estimated Kp-values of 4 or less should be provided as a survey report appendix.

Use of a gradiometer may be recommended in lieu of a magnetometer depending on survey area and survey block size and orientation, location, and/or the expected age and condition of submerged archaeological historic properties within the survey area.

Side-Scan Sonar: A high frequency (600 kHz or higher) side scan sonar system should be used to provide 100% coverage of the survey area. A sonar system specifically designed to provide high resolution nadir gap coverage should be used or transect spacing and range should be set to allow sufficient overlap to image the nadir zone without using a range setting that exceeds 25.0 m (82.0 ft.) per channel. The chosen system should be configured to compensate for sensor movement within the water column including heading, pitch, and roll. The acquisition strategy should facilitate the reliable detection of targets measuring $\leq$ 0.5 m (1.6 ft.) in diameter. The side-scan sonar should be towed above the seafloor at a height that is 10 to 20 percent of its range setting whenever possible. Range settings should not exceed 25.0 m (82.0 ft.) per channel and should be chosen based on frequency and water depth. For towed systems, a cable counter or similar device should be used and cable out distances should be input into the survey navigation system in real time for correction of towfish location to earth coordinates.

- Additional side-scan sonar data should be collected to perform detailed inspection of anomalous features and unidentified contacts using a higher frequency, tighter transect spacing, and appropriate range setting, for example 1200 kHz (or higher), 5.0 m (16 ft.) transect spacing and a 15 m (50 ft.) per channel range setting.

Sub-bottom Profiler: A sub-bottom profiler system should be used to identify and map buried geomorphological features with potential to contain submerged archaeological historic properties. The particular instrument, frequencies, and settings selected should be capable of achieving a depth of penetration and resolution of vertical bed separation sufficient to allow identification and mapping of buried geomorphic features with archaeological potential such as paleochannels, levees, terraces, and paleolagoon systems, and archaeological features such as shell middens. It should be capable of achieving a resolution of vertical bed separation of at least 0.3 m (1.0 ft.) in the uppermost 10.0 to 15.0 m (32.8 to 49.2 ft.) of sediments depending on the substrate.

High frequency (2-24 kHz) Compressed High Intensity Radar Pulse (CHIRP) and Shallow-Water Parametric sub-bottom profilers are commonly used for archaeological work and may be suitable for achieving the necessary penetration and resolution. Instrument selection including type, frequency, and settings should be justified in the research design. For towed systems, a cable counter or similar device should be used and cable out distances should be input into the survey navigation system in real time for correction of towfish location to earth coordinates.

Data Analysis and Interpretation

Magnetometer: Each trace of magnetometer data should be **reviewed individually** and anomalies over 10 nT should be inventoried with attributes such as cable out, sensor height, X/Y position, signature (dipole, positive (+) or negative (-) monopole, or complex/multi-component), intensity (peak-to-peak), and duration (m) tabulated and provided as a magnetic anomaly table. Basing analyses solely on review of magnetic contour plots is not recommended.

Magnetic Anomaly Table

Anomaly No.	Transect No.	Description/ Interpretation	Line Direction	Cable Out (m)	Sensor Height (m)	X* (m)	Y* (m)	Signature	Intensity (nT)	Duration (m)	Associated Contacts	Target No.

*Maryland State Plane, NAD83 with units in meters

The complete magnetometer dataset should then be used to produce a map with magnetic contours plotted at 10 nT intervals which includes and references each magnetic anomaly and side scan sonar contact identified during magnetic trace and sonar line analyses to assist in interpretation. Additional magnetic contour plots should be created at various intervals as needed.

Correction for diurnal variation should be considered when contouring magnetometer data. The need for correction depends on the degree of variation in the earth's magnetic field during the period of data collection. Use of a gradiometer in lieu of a magnetometer is recommended if correction for diurnal variation is expected to be necessary

Side Scan Sonar: Each transect of side scan sonar data should be position-corrected and **reviewed individually** with contacts picked thorough review of individual line files and a table of side scan sonar contacts should be provided.

Side Scan Sonar Contact Table

Contact No.	Transect No.	Description/ Interpretation	X* (m)	Y* (m)	Length (m)	Width (m)	Height (m)	Associated Anomalies	Target No.

*Maryland State Plane, NAD83 with units in meters

Sub-bottom Profiler: Each transect of sub-bottom profiler data should be position corrected and reviewed

individually to identify areas exhibiting potential for the presence of pre-contact archaeological deposits, such as paleochannels, levees, terraces, and paleolagoon systems. Interpretations of archaeological potential should consider terrestrial site patterning, sea-level history, and the depth of erosion evident in sub-bottom profiler data. Recommendations should be provided related to the need for further work such as coring and/or sampling of specific geomorphic features to refine understanding of the paleolandscape and the potential for intact archaeological deposits.

Sub-bottom profiler data also should be reviewed to identify the horizontal and vertical extents of abandoned artificial channels and recent shoreline erosion and sedimentation which may inform interpretations of archaeological potential.

These reviews should result in digital tracing, georeferencing, and interpolating of sub-bottom reflectors to produce 2D and 3D surface models which represent the submerged and buried landscape and inventory of sub-bottom features as a sub-bottom profiler feature table.

Sub-bottom Profiler Feature Table

Contact No.	Transect No.	Description/ Interpretation	X* (m)	Y* (m)	Burial Depth (m)	Further Investigation Needed (Y/N)

*Maryland State Plane, NAD83 with units in meters

Reviews of sub-bottom profiler data also often result in the identification of objects such as buried cables and pipelines or isolated debris which can support interpretations of magnetic anomalies and side scan sonar contacts, or clusters of objects which may represent archaeological deposits. Inventories of these data should be provided as a sub-bottom profiler contact table.

Sub-bottom Profiler Contact Table

Contact No.	Transect No.	Description/ Interpretation	X* (m)	Y* (m)	Burial Depth (m)	Length (m)	Width (m)	Height (m)	Associated Anomalies	Target No.

*Maryland State Plane, NAD83 with units in meters

Targets: The report should clearly describe the specific criteria applied by archaeologists during reviews of magnetometer, side scan sonar, and sub-bottom profiler data to identify anomalies and contacts potentially representing submerged archaeological historic properties. These individual or clusters of anomalies and/or contacts are commonly referred to as targets and should be reported in a separate Target Table with any additional data used during analyses such as magnetic moment direction (degree variance from Magnetic North) added when appropriate.

Target Table

Target No.	X* (m)	Y* (m)	Burial Depth (m)	Associated Contacts	Magnetic Moment Direction (°)	Interpretation	Further Investigation Needed (Y/N)	Avoidance Distance (m)

*Maryland State Plane, NAD83 with units in meters

Report Preparation and Data Submission

The report should describe and illustrate the proposed project and the study area, present an overview of desktop and field methods, and provide evaluation and synthesis of research and survey results. Recommendations for avoidance should include distances and justifications; recommendations for

additional work to better characterize or evaluate targets should be detailed and justified.

Maps and Figures: All maps and figures should include a north arrow, statement of scale (1:6000, etc.), graphic scale in meters, graticule border ticks referencing Maryland State Plane, NAD83, with units in meters, and a key to relevant symbols such as those representing magnetometer anomalies, side scan sonar contacts, sub-bottom profiler contacts, targets, contour intervals, recommended avoidance areas, etc.

Each magnetic anomaly, side scan sonar contact, sub-bottom profiler contact, and target should be labeled to match corresponding tables which should follow the recommended table formats provided above. Symbols and labels should not obscure side scan sonar imagery or other data. Additional unannotated versions of maps and figures should be provided in cases where obscuring data is unavoidable.

Maps should be produced at a scale not smaller than 1:6000. These should be printed on 11”x17” paper, folded and bound into the report. These should minimally include:

1) a post-plot of magnetometer survey transects with line direction, magnetic anomalies, sonar contacts, sub-bottom profiler contacts, targets, and bathymetric and magnetic contours;

2) a low resolution (25 cm per pixel) side scan sonar mosaic to show coverage;

3) a 2D contour plot(s) of georeferenced surface models representing submerged and buried landforms and/or other submerged and buried features of interest with a post-plot(s) of sub-bottom profiler survey transects with line direction;

4) a map depicting proposed project elements, expected bottom impacts and ground disturbances including their horizontal and vertical extents, targets, and recommended avoidance areas.

A minimum of two figures should be provided for each target and unidentified side scan sonar contact. These should be produced at a scale not smaller than 1:200, printed on 8 1/2” x 11” or 11” x 17” paper, folded and bound into the report. These should include:

1) A figure showing side scan sonar imagery reproduced at a resolution of 10 cm per pixel. This applies to both side scan sonar contacts and targets (regardless of whether a side scan sonar contact was inventoried in association with the target). Imagery should not be clipped from side scan sonar mosaics and supplying only auto-generated tables with clipped images exported from post-processing software is unacceptable.

2) Additional figures showing the same area at the same scale with the same side scan sonar imagery should be provided with overlays of magnetic anomalies, magnetic contours, isolated sub-bottom profiler contacts, and other relevant information such as bathymetric contours. Each magnetic anomaly, side scan sonar contact, sub-bottom profiler contact, and target should be labeled to match corresponding tables and contour intervals should be stated.

Similarly, a minimum of two figures should be provided for each type of landform or buried feature identified in sub-bottom profiler data. These should be provided as unannotated data samples and interpreted images that outline the relevant feature(s); both should include horizontal and vertical scales, transect number and direction, and coordinates projected in Maryland State Plane, NAD83, with units in meters.

Data Submission: All survey data should be provided in the formats described below. Text files should be submitted in a format compatible with Microsoft Word and database files in a format compatible with Microsoft Access. All geographic data files should be submitted in one or more georeferenced digital formats. The recommended delivery formats are ArcGIS shapefiles and GeoTIFFs. Geospatial data should be submitted in a Geographic Coordinate System and Maryland State Plane with units in meters. All digital geospatial data products are to be accompanied by complete metadata documentation.

Data should be submitted in the following formats:

- Navigation Data - The navigation post-plot of the surveyed areas including survey lines, line numbers, line direction, and other relevant attributes should be submitted in an ArcGIS readable format with appropriate metadata for example as ESRI shapefiles (.shp and associated files) or AutoCAD drawing exchange format (.dxf) documents.

- Project Overview - The location of the proposed project elements including expected bottom impacts and ground disturbances including their horizontal and vertical extents and other relevant attributes should be submitted in an ArcGIS readable format with appropriate metadata, for example as ESRI shapefiles (.shp and associated files) or AutoCAD drawing exchange format (.dxf) documents.

- Magnetometer Data - Unprocessed magnetometer data should be submitted. This includes the unprocessed data for each individual transect in its native file format such as Hypack .raw files, as well as the full unprocessed magnetometer dataset as a single comma separated value (.csv), or tab delimited text file (.txt) file, and, if available, the full diurnally-corrected dataset as a single comma separated value (.csv), or tab delimited text file (.txt) file. At a minimum, the following items should be included within the full dataset table(s):
    - X
    - Y
    - Raw Magnetic Readings

  A digital copy of the Magnetic Anomaly Table should be submitted as a single comma separated value (.csv), tab delimited text file (.txt) file, or a Microsoft Excel (.xls or .xlsx) file.

- Side Scan Sonar Data - Raw native file format (eg., EdgeTech (.jsf), Klein (sdf.), Marine Sonic (.mst), etc.) and eXtended Triton Format (.xtf) line files should be submitted.

  A digital copy of the Side Scan Sonar Contact Table should be submitted as a single comma separated value (.csv) file, tab delimited text (.txt) file, or a Microsoft Excel (.xls or xlsx) file. The side scan sonar mosaic should be submitted as a georeferenced Tagged Image Format (.tif) file(s)

with an output resolution of 25 cm per pixel.

- Sub-bottom Profiler Data - Raw native file format (eg., EdgeTech (.jsf), Innomar (.ses), etc.) and standard exchange format SEG-Y (.sgy, .segy) files should be submitted.

  Digital copies of the Sub-bottom Profiler Feature Table and the Sub-bottom Profiler Contact Table should be submitted as single comma separated value (.csv) files, tab delimited text (.txt) files, or Microsoft Excel (.xls or xlsx) files.

- Target Data - A digital copy of the Target Table should be submitted as a single comma separated value (.csv) file, tab delimited text (.txt) file, or a Microsoft Excel (.xls or .xlsx) file.

Appendix IV

Technical Update No. 1 of the
Standards and Guidelines for Archaeological Investigations in Maryland:
Collections and Conservation Standards

Supersedes “VI. Processing and Curation of Collections (Artifacts and Records)” from Standards and Guidelines for Archeological Investigations in Maryland, Shaffer and Cole, 1994

Supplements "VI. Curation of Collections" from Standards and Guidelines for Archaeological Survey and Excavation in Maryland, McKnight et al. 2025

Maryland Archaeological Conservation Laboratory
Maryland Historical Trust

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Introduction

The Maryland Archaeological Conservation Laboratory (MAC Lab) is a state-of-the-art archaeological research, conservation, and curation facility located at Jefferson Patterson Park and Museum, the State Museum of Archaeology. The MAC Lab serves as the primary repository for archaeological collections recovered from land-based and underwater projects conducted by state and federal agencies throughout Maryland.

The standards outlined in this document have been developed to ensure the long-term preservation and accessibility of Maryland's archaeological collections. They provide guidance for preparing artifact collections and their associated records, both paper and digital, for permanent curation at the MAC Lab.

While every attempt has been made to ensure these standards are comprehensive, it is not possible to address every potential situation or material encountered when processing archaeological collections. Therefore, it is recommended that consultants contact MAC Lab curation staff for case-by-case guidance on preparing collections for curation as soon as possible for any unique or challenging situations.

The MAC Lab reserves the right to refuse collections that do not meet these curation and conservation standards.

These revised curation and conservation standards apply to all archaeological projects for which the budget is developed after January 1, 2019.

1. Isolated Find Numbers and Lot Numbers

1.1 Obtaining isolated find numbers

Artifacts that are not associated with an inventoried site but can stand alone as valuable for research, education, or exhibit (i.e. a diagnostic projectile point, a decorated button, ordnance) should be assigned an isolated find number, or "X-number." This number is represented as a trinomen, just like a site number, but with an "X" included after the two-letter county designation; for example, 18BAX54. To obtain an X-number, please contact the MAC Lab curation staff.

Decisions regarding whether or not to obtain an X-number should be made in consultation with the MAC Lab curation staff and the Maryland Historical Trust's (MHT) archaeologists reviewing the project. For State Highway Administration (SHA) projects, SHA archaeologists must also be consulted.

1.2 Obtaining lot numbers

The state of Maryland uses a lot number system to track provenience within a collection. One lot number should be assigned to each unique provenience within a collection. Lot numbers are assigned sequentially and should be keyed to the collection's catalog. **Please contact the MAC Lab curation staff for the next available lot number for previously recorded sites**. This requirement is essential to ensure that lot numbers are not duplicated across different projects at the same archaeological site.

2. Cleaning

All stable artifacts must be cleaned unless being retained for residue analysis (Table A).

Table A: Summary of materials that should be wet-washed, dry brushed, thoroughly wet-washed in bulk, or left unwashed. For questions about exceptions or anything not on this list, contact MAC Lab curation staff.

Wet-wash each artifact	May be wet-washed in bulk	Dry-brush	May be left unwashed for specialized analysis
• Ceramics • Glass • Tobacco Pipes • Lithics • Bone	• Shell • Brick • FCR • Slag • Coal	• All metals • Wood • Leather • Textiles • Fragile objects	• Stone tools (blood or pollen residue) • Ceramics (food residue) • Tobacco pipe stems (DNA) • Tobacco pipe bowls (tobacco residue)

3. Cataloging

All collections must be cataloged and the catalog must include the following information:

- Site number or X-number
- Lot number
- Artifact number
- Detailed provenience information
- Artifact count
- Detailed artifact description

Additional information may be included in the artifact catalog. As long at the catalog includes the information listed above, the names, types, and/or number of fields within the catalog may be determined by the project archaeologist.

3.1 Assigning artifact numbers

Assign artifact numbers within each lot number/provenience to each object(s) entered in a single catalog entry (Table B). Use three decimal places to ensure proper sorting.

Table B: Example of artifact number assignments within a catalog.

Site #	Provenience	Lot #	Artifact #	Count	Artifact Description
18MO775	TU 49, Lvl 1	547	.001	5	rhyolite secondary flakes
18MO775	TU 49, Lvl 1	547	.002	10	quartz secondary flakes
18MO775	TU 49, Lvl 1	547	.003	3	quartz decortication flakes
18MO775	TU 49, Lvl 1	547	.004	1	black chert corner-notched projectile point
18MO775	TU 49, Lvl 2	548	.001	5	Rhenish blue and grey salt-glazed stoneware sherds
18MO775	TU 49, Lvl 2	548	.002	23	white clay tobacco pipe stem fragments, 5/64”
18MO775	TU 49, Lvl 2	548	.003	5	white clay tobacco pipe stem fragments, 6/64”
18MO775	TU 49, Lvl 2	548	.004	1	iron hoe fragment
18MO775	TU 49, Lvl 2	548	.005	3	wrought nails, uid heads
18MO775	TU 49, Lvl 2	548	.006	15	brick fragments
18MO775	TU 49, Lvl 2	548	.007	37	oyster shell fragments

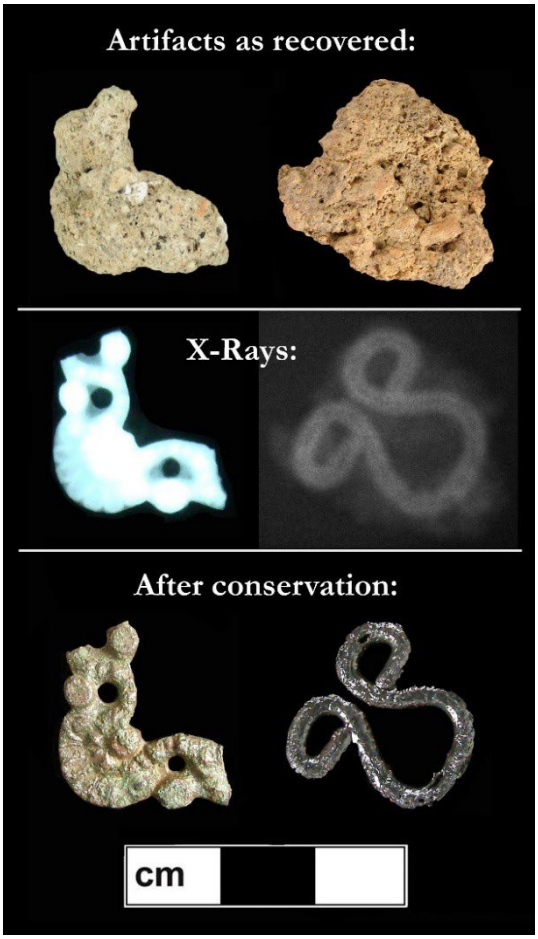
3.2 Digital artifact catalog

Digital artifact catalogs are required in a Windows-compatible spreadsheet such as Excel, preferably with the archival format extension .xlsx. See Section 8.2.1 for more about digital artifact catalogs.

3.3 Cataloging tools

3.3.1 Diagnostic Artifacts in Maryland

The MAC Lab provides the online reference *Diagnostic Artifacts in Maryland* for help with the identification of artifacts. This tool can be found at https://apps.jefpat.maryland.gov/diagnostic/.



3.3.2 X-Radiography

X-rays are recommended as a tool for identifying corroded metal artifacts, documenting them prior to deterioration, and making decisions about conservation and discard (Figures 1-2; See also Section 6). The word "unidentifiable" should not be used in the catalog to describe any heavily corroded metals that have the potential to be identified through x-radiography. Instead, use "unidentified" or "indeterminate" in the catalog. When x-radiography is used, the metals should be x-rayed **BEFORE** collections are cataloged to ensure catalog accuracy.

The MAC Lab offers x-radiography services for a fee (See https://jefpat.maryland.gov/AnalyticsReports/x-radiography%20guide.pdf), but x-rays can also be obtained elsewhere (the dentist, universities, other archaeology or conservation labs, etc.).

Figure 1: Examples of artifacts identified through x-radiography and deemed important enough to warrant full conservation.

Figure 2: Example of nails x-rayed for identification. When found in small numbers, nails can be left in the bag for x-ray (top portion of tray/x-ray). Nails are rarely a conservation priority, so with prior approval of the MAC Lab x-rays may be used as documentation for responsible nail sampling and discard (See Section 6).

X-radiography is not a requirement for collections being donated to the MHT unless as part of a sampling and discard plan developed in conjunction with the MAC Lab curation staff, the MHT archaeologists reviewing the project, and SHA archaeologists for SHA projects (See Section 6).

X-radiography **is required** for corroded metals in federally-owned collections slated for curation at the MAC Lab as part of the MAC Lab's obligation under 36 CFR Part 79 to report to owner agencies on the condition of their collections. Upon delivery the MAC Lab charges federal clients for a one-time conservation survey fee that includes x-radiography. The MAC Lab strongly encourages firms processing federal collections to have these x-rays done **before** cataloging. No costs will be incurred by the firm processing the federal collection because x-rays are included in the federal curation fee schedule.

X-rays delivered with a collection as part of the associated documentation should be labeled with site, lot, and artifact numbers corresponding to the catalog.

See https://jefpat.maryland.gov/AnalyticsReports/x-radiography%20guide.pdf for more guidance on x-radiography.

4. Labeling

4.1 What to label

Artifacts one-half inch or larger (Figure 3) must be labeled with site number (or X-number), lot number, and artifact number (Figure 4). Leading zeros in the artifact number may be dropped from artifact labels to save space. See Table C for the types of artifacts that should and should not be labeled.

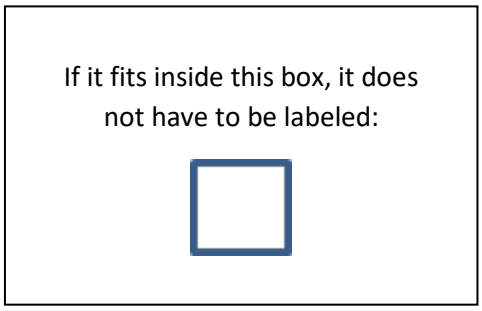


Figure 3: Use this box as a guide to determine whether an artifact is too small to be labeled. NOTE - This assumes this page has been printed on a standard 8.5 X 11 inch paper and not re-scaled.

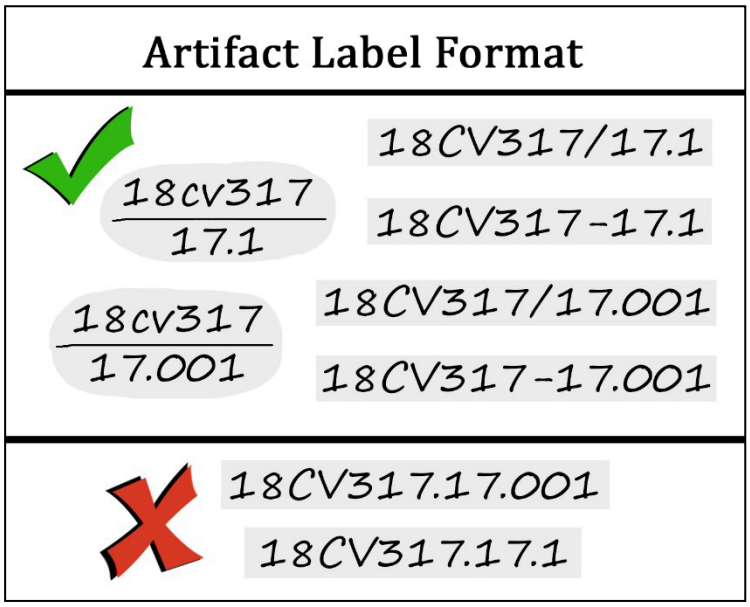


Figure 4: Examples of artifact label formats. Separate the site number from the artifact and lot number with a line, hyphen, or backslash, not a period.

Table C: Artifacts that should and should not be labeled (Figure 5). For questions about anything not on this list, contact MAC Lab curation staff.

Label	Do not label	Label a 10% sample within a lot
• Diagnostic ceramics • Diagnostic glass • Lithic tools and cores • Tobacco pipes • Stable non-ferrous metals • Small finds	• Ferrous metals • Mortar/daub/plaster • Wood • Leather • Textiles • Fragile bone • Fragile shell • Fragile non-ferrous metals (brittle pewter, etc.)	• Plain, undecorated ceramic body sherds • Plain glass body sherds • Window glass • Brick • Lithic debitage (flakes, shatter, etc.) • FCR • Stable bone • Stable shell

4.2 Accepted artifact labeling procedures

The MAC Lab accepts the following labeling systems (See Figures 6 and 7 for examples of what to do and what not to do when labeling):

Permanent archival ink

If labeling artifacts with permanent archival ink using a rapidograph or crow quill pen, an undercoat of 10% Acryloid B-72 in acetone should be applied to the artifact prior to labeling, followed by a protective top coat of 20% Acryloid B-72 in acetone. Dark artifacts may be labeled using an undercoat of 10% Acryloid B-72 in acetone with titanium dioxide or using an archival white ink.

Acid-free paper labels

If labeling artifacts with acid-free paper labels, print labels with a laser printer, NOT inkjet, using a sans serif font such as Calibri, Tahoma, or Verdana with font size 4 or 5 pt.

To apply paper labels to artifacts, use the following procedure:

- Apply a layer of adhesive to the artifact
- Using tweezers, apply paper label on top of adhesive
- Apply another layer of adhesive on top of the label

The following adhesives are acceptable for use with paper labels:

- PVA or Liquitex Matte Medium
- Rhoplex for porous objects

Acid-free paper string tags

Acid-free tags with site number (or X-number), lot number, and artifact number may also be used and tied with string to small artifacts, such as beads, buttons, or pierced coins, as long as they are not too fragile.

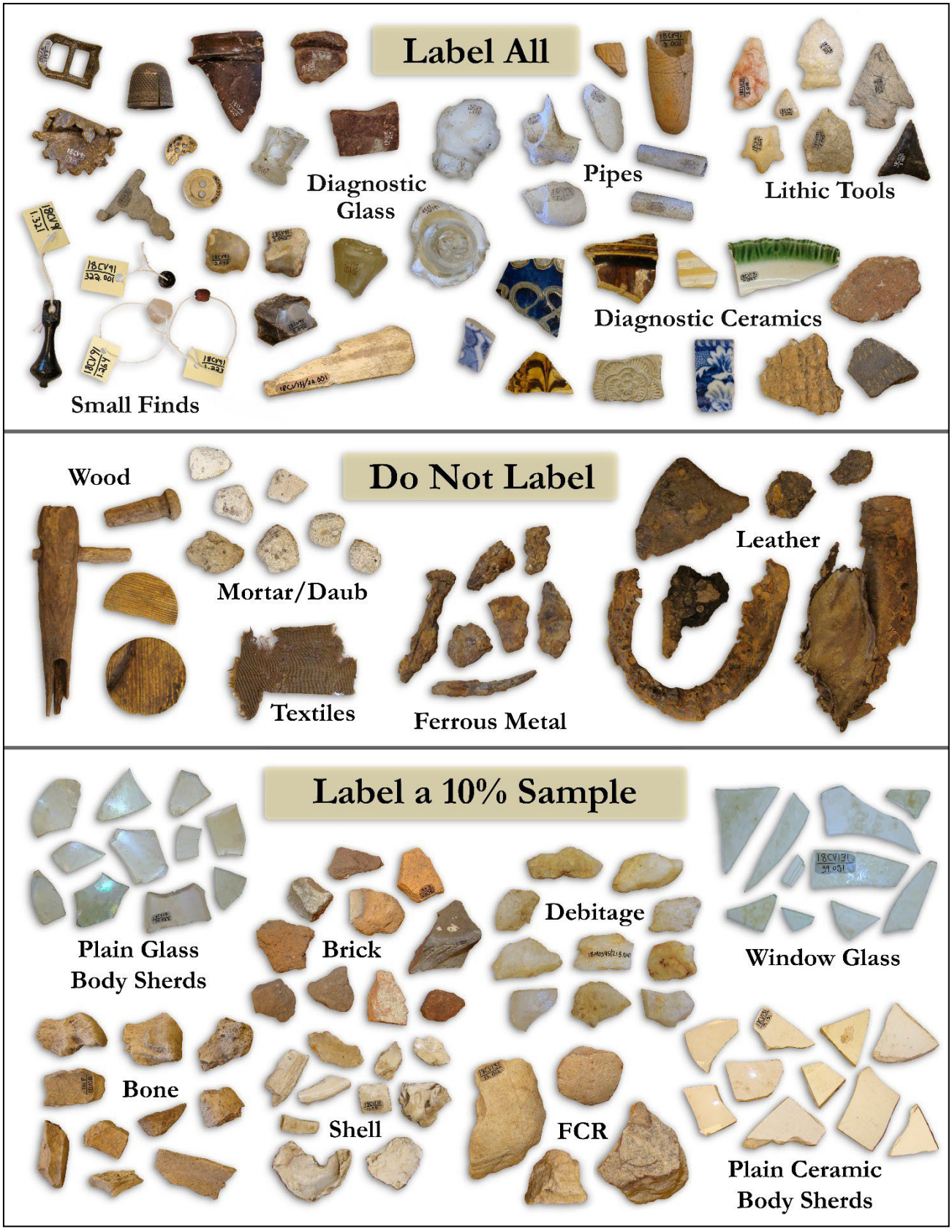


Figure 5: Examples of what to label and what not to label as described in Table C.

Figure 6: Examples of acceptable labels.

Figure 7: Examples of what not to do when labeling artifacts.

5. Packaging and Organization

5.1 Boxes, bags, and tags

All artifacts must be stored in perforated polyethylene 4 mil (or greater) ziplock bags with acid-free tags and placed in 3 mil polypropylene boxes (12” x 15” x 10”) with separate lids. Collections equal to one half box or less, including associated field records, may be turned over in a large 4mil ziplock bag.

Artifacts must be bagged by lot number and artifact number as assigned in the artifact catalog. Individual artifact bags must be labeled with the site number and lot/artifact number. The artifact bags must then be grouped in a larger bag by lot number and labeled at a minimum with site number, lot number, and full provenience information. Both artifact and lot bag labels must be written in permanent black ink on the exterior of the bags and the information must be duplicated on an interior acid-free tag with either laser-printed or archival ink (Figure 8).

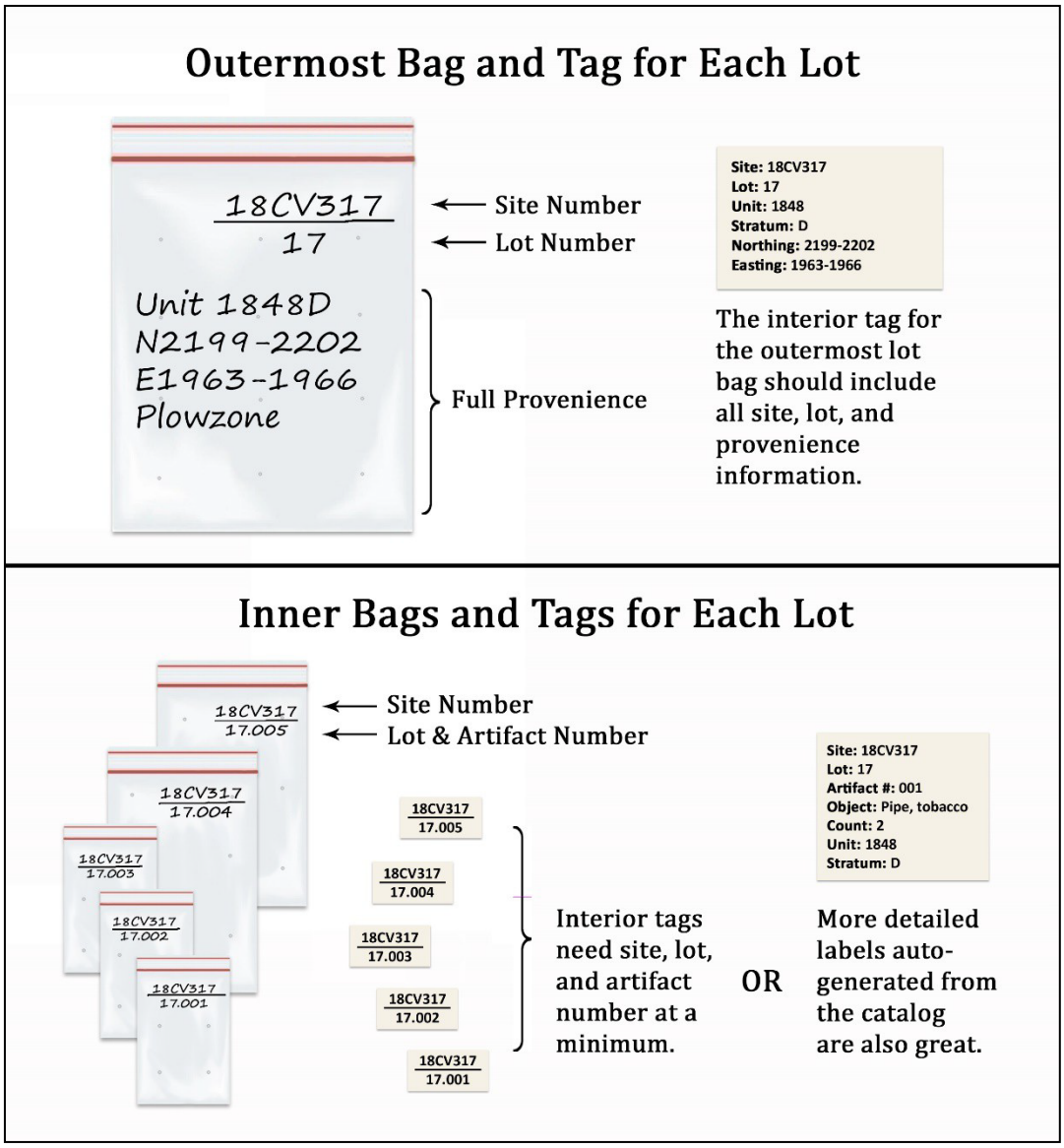


Figure 8: How to label and organize bags and interior acid-free tags.

5.2 Specialized storage containers for fragile or oversized objects

Small fragile artifacts may require specialized packaging, such as acid-free boxes, vials, acid-free tissue or ethafoam. Oversized artifacts may require custom-built boxes or supports. Please contact the MAC Lab curation staff for guidance when packaging these types of artifacts for long term curation.

5.3 Packaging of soil, flotation, and charcoal samples

All soil samples collected for flotation or soil analysis must be processed before being submitted for permanent curation. Any material produced from the analysis must be packaged in archival materials.

Any unprocessed soil samples that an archaeologist wishes to retain for future research will only be considered for permanent curation on a case-by-case basis and must have prior approval from MAC Lab curation staff.

Charcoal samples may be packaged in one of the following two ways:

- aluminum foil, which is then placed in an archival artifact box
- glass vial, which is then placed in a ziplock bag

5.4 Box organization

Pack artifacts in polypropylene boxes using the following guidelines:

- Organize lot bags sequentially.
- Artifact categories that have been pulled for specialized analysis, such as ceramic or glass vessels, tobacco pipes, or diagnostic lithic tools may be boxed separately from the general lot bag (Figure 9B).
- For Phase II and III collections, pull all metal artifacts from the general lot bags and store them in their own boxes organized sequentially by lot number (Figure 6). For collections that are one box or less, pull all metal and place it in a separate bag within the box. For collections with less than one box of metal artifacts, place all metal in a separate bag within the last box.

Organize boxes in the following order: general artifacts, special/diagnostic artifacts, metal artifacts (Figure 9). This organization should be reflected on the Box Inventory form.

5.5 Temporary box labels

Permanent box labels will be generated by the MAC Lab after delivery. See Figure 10 for acceptable temporary labeling options for use prior to delivery.

A) Example of how to organize a 6 box Phase I/II collection with two sites and no special analyses.

B) Example of how to organize a 9 box Phase III collection with ceramic and faunal analysis.

Figure 9: Examples of how to organize boxes for delivery.

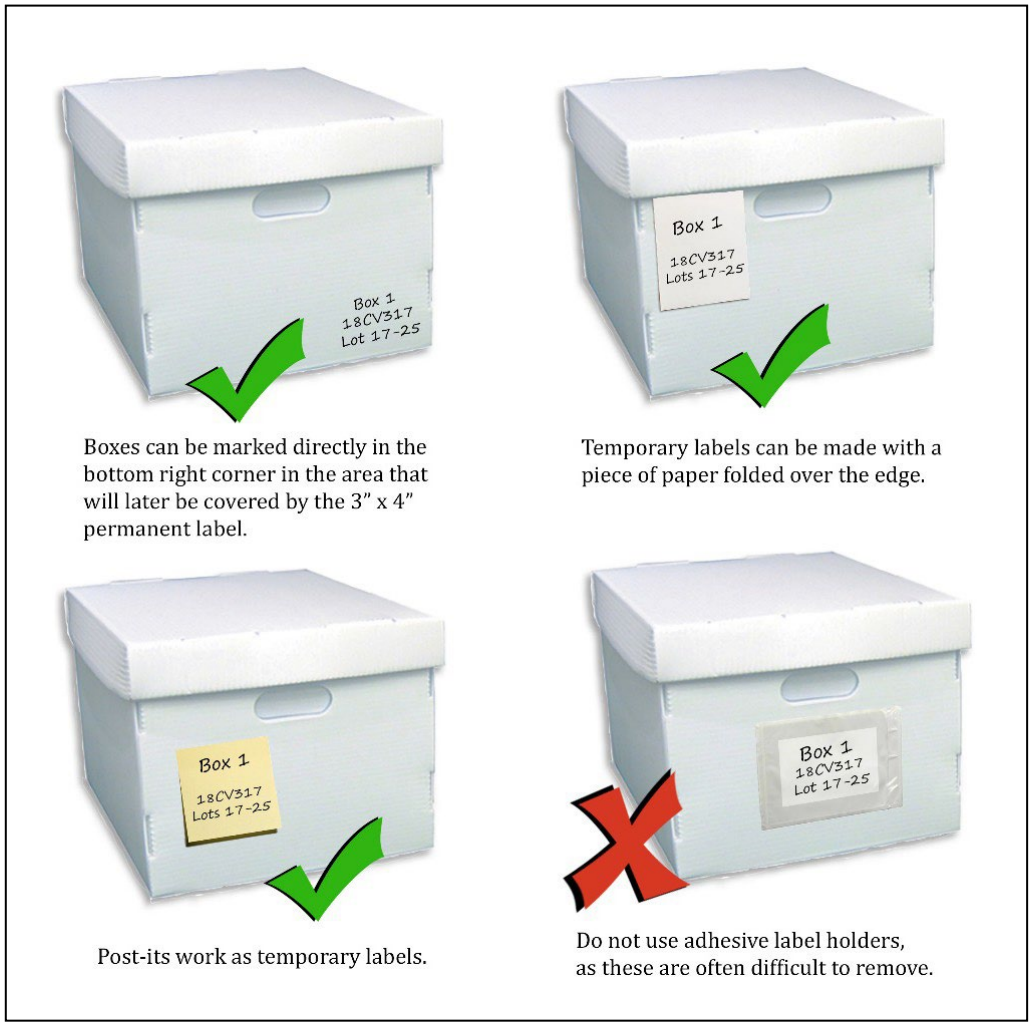


Figure 10: Options for making temporary box labels for delivery.

6. Sampling and Discard

When a survey or excavation generates non-site materials or large quantities of bulk materials, such as brick, shell, nails, FCR, or slag, a sampling and discard strategy should be established **in consultation with the MAC Lab curation staff and the MHT archaeologists reviewing the project. For SHA projects, SHA archaeologists must also be consulted.**

- All artifacts must be cataloged and, in some cases, photographed prior to discard.
- Non-site materials should usually be discarded unless they can stand alone as valuable for research, education, or exhibit (i.e. a diagnostic projectile point, a decorated button, ordnance).
- In the case of corroded iron objects, sampling is not required. However, not all artifacts are a priority for conservation (see Section 7), and there is little value in retaining metals that will turn to dust in the bag. Instead, archaeologists faced with bulk metals (i.e. nails) are encouraged to contact the MAC Lab to develop a responsible sampling/discard strategy. Depending upon the nature of the project, x-radiography may be required to properly document the metals prior to discard.

7. Conservation

There is a responsibility to preserve artifacts recovered from an archaeological investigation. Preservation can be accomplished using preventive conservation techniques such as environmental controls in combination with interventive conservation measures, such as cleaning and chemical stabilization.

7.1 When to consult with a professional conservator

When developing a scope of work for an excavation, a conservator should be consulted during the planning phase. A conservator on contract while in the field can provide quick response to a request for stabilization and removal of artifacts, reduce the loss of information through rapid deterioration, and reduce the cost of stabilization and treatment of artifacts.

7.2 Qualifications of a professional conservator

Conservators should be affiliated with the American Institute for Conservation (AIC), a national association of professional conservators, and adhere to the "AIC Code of Ethics and Standards of Practice." Conservators must have formalized training, a broad range of theoretical and scientific knowledge, and be committed to maintaining high standards and an ethical performance of duties. A guide, "How to Choose a Conservator," is available on the AIC website as well as the "Find a Conservator" tool, which provides a computer-generated list of conservators who have met peer review, practice conservation in the specialty of inquiry, and are located near the inquirer.

7.3 Prioritizing artifacts for conservation

A conservator should work in collaboration with the consultant's project or lab manager to determine the priorities for conservation treatment and provide the most cost-effective methods. The assessment should include consideration of artifact significance, material condition, potential benefit from conservation efforts, and budgetary restrictions. It is not practical or feasible to conserve every artifact. A deliberate effort must be made to ensure the preservation of the most significant and/or vulnerable objects (See Table D). The majority of artifacts (with low curatorial priority or that require minimal stabilization), are best addressed using a preventive conservation program with archival storage materials, mounts, and environmental controls.

Priority conservation candidates include:

- Artifacts significant enough to be individually described or discussed in the site report.
- Organic remains from wet or waterlogged burial environments.
- Metal artifacts that show active signs of corrosion.
- Artifacts likely to be placed on public exhibit

Prioritizing artifacts for conservation treatment should be done in consultation with the MAC Lab's Head Conservator and the MHT archaeologists reviewing the project. For SHA projects, SHA archaeologists must be consulted.

Table D: Summary of conservation issues and treatments that apply to different material types.

Material Types	Types of conservation issues	Possible treatments
Metals (iron, copper alloys, lead, aluminum, composites)	Active corrosion, material loss, concretions obscuring surface detail	Desalination, cleaning, application of corrosion inhibitors, mechanical repairs, x-radiography
Wet Organics (wood, leather)	Mold, loss of dimensional information (shrinking, warping)	Biological inhibitors, controlled drying methods
Dry Organics	Mold, brittle, material loss	Biological inhibitors, consolidation, mechanical repairs
Bone and Shell	Embrittlement, material loss	Consolidation, mechanical repairs
Glass	Delamination, material loss, breakage	Consolidation, mechanical repairs
Ceramics	Surface loss, crumbling, breakage, staining obscuring surface detail	Consolidation, mechanical repairs, de-staining

7.4 Budgeting for conservation

During the planning phases of the excavation, accommodations should be made within the budget for conservation. Conservation is a labor-intensive process involving specialized materials and, depending on the quantity and type of material to be treated, can add a significant cost to a project budget. When considering the potential for artifact conservation, it is important to consider the type of site and the anticipated assemblage it could generate. For example, a precontact site may require little conservation intervention as the majority of finds are ceramic or stone and are generally more stable. In comparison, historic-period sites may contain large quantities of iron and composite artifacts which require a greater degree of treatment to stabilize. Statistically, only 1-3% of the material in a terrestrial phase II or III survey will be both diagnostically significant and derive benefits from conservation. For underwater sites, such as shipwrecks, most of the objects recovered may require conservation treatment. **Please contact the MAC Lab's Head Conservator for assistance with creating conservation budgets for archaeological projects.**

The MAC Lab, in consultation with MHT and SHA archaeologists, may refuse to accept collections with unconserved or unstable material remains. See https://jefpat.maryland.gov/Pages/mac-lab/conservation.aspx for more information on MAC Lab conservation services.

8. Project Documentation

All project documentation that tells the story of the archaeological investigation (Table E) should be submitted, even if there are no associated artifact collections. Records are required in two forms unless stated elsewhere in Section 8:

- Original hard copy
- Digital copy

Table E: Summary of project documentation to submit to the MAC Lab for permanent curation.

Required if Generated	Optional	Not Accepted
• Artifact catalogs • Photos of excavations • Photo logs • Field records (STP/ Unit/ Feature forms, daily logs/journals, maps, etc.) • Lab records (conservation records/photos, analyses, artifact drawings, etc.) • Maps • Final report • Public interpretation/ outreach files	• Site forms • Project background (e.g. scope of work, proposal, etc.) • Historical research (land records, historic images, etc.) • Artifact photos • Up to 5 crew-at-work photos • Project shape files (site location, unit location, etc.)	• Images that are not needed to directly document the site or artifacts (e.g. duplicate images, pictures of indistinguishable fields or wooded landscapes, fun but unnecessary wildlife shots, etc.)

8.1 Preparing non-digital records for submission

8.1.1 Artifact catalogs

Submit one hard copy of artifact catalogs on 8.5" x 11" paper. If there is more than one site in a project, place the catalogs in site number and lot number order. Two-sided printing is preferred for multiple pages.

8.1.2 Photos and photo logs

Submit one copy of contact sheets (thumbnails) and photo logs for all digital photos. Place these together in a folder as described in Section 8.1.4 below. Photo prints are not required, but if they are generated, contact the MAC Lab curation staff about how they should be packaged for submission.

8.1.3 Report

Submit two hard copies of the final report; one bound for the MAC Lab library and one unbound to be archived with the original records as described in Section 8.1.4.

8.1.4 All other paper records (field notes, lab records, maps, etc.)

Organize original records in letter-sized acid-free folders, separated by document category. Directly label the right-hand side of each folder tab in acid-free ink or pencil with a brief project name and contents. (Figure 11). Legal-size folders are accepted only if needed to fit larger documents. Other oversize records such as maps are accepted without folders.

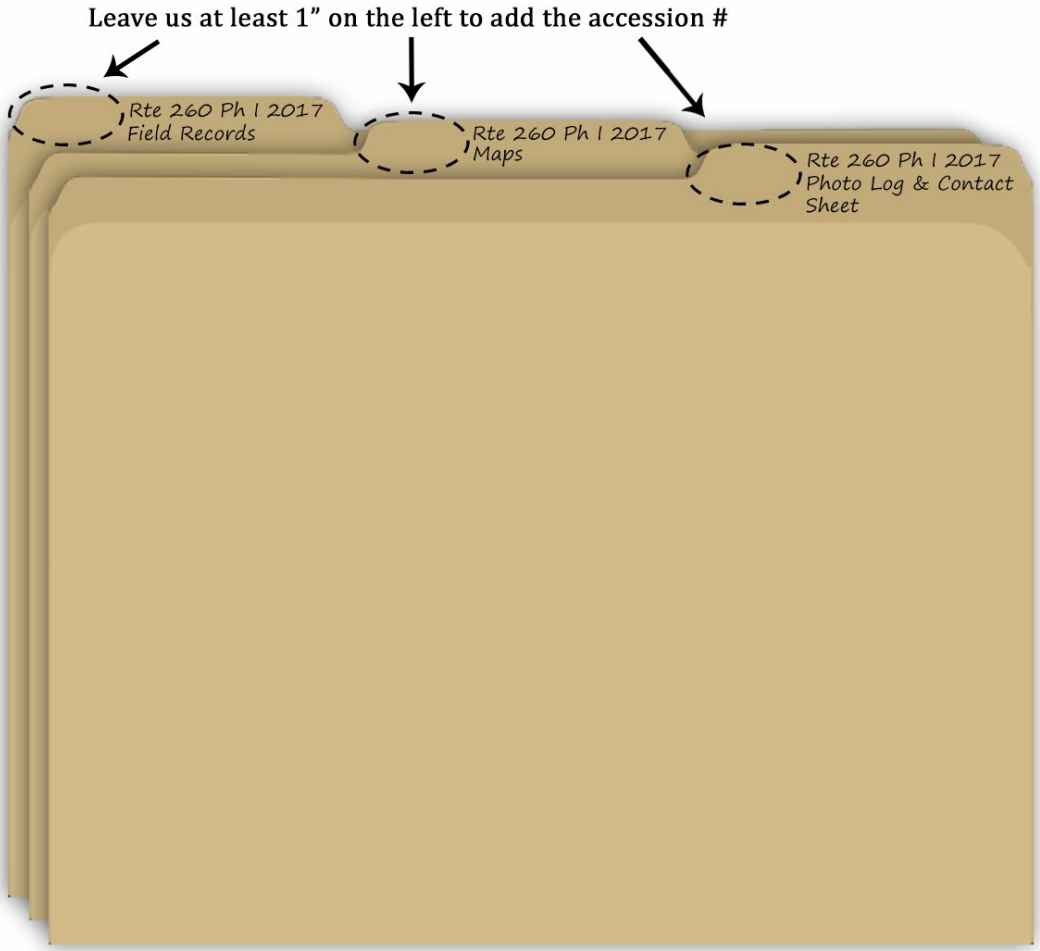


Figure 11: How to label folders for hard copies of records. Directly label the folders; do not use stick-on labels.

8.2 Preparing digital records for submission

For a current list of acceptable file types, refer to the list of formats that can be deposited at the Maryland State Archives (https://msa.maryland.gov/msa/intromsa/html/record_mgmt1/index.html).

Contact MAC Lab curation staff if the following guidelines, written in 2018, require clarification or updates as digital technology changes.

8.2.1 Artifact catalogs

Digital artifact catalogs are required in a Windows-compatible spreadsheet such as Excel, preferably with the archival format extension .xlsx. Submit one catalog file only; separation of site numbers is only for printed hard copies and can be achieved using filters or different worksheets in one spreadsheet.

8.2.2 Photos and photo logs

Submit only digital photos that are worthy of permanent archiving as essential and recognizable

documentation of the project area, excavations, or artifacts. Failure to cull duplicative, non-descript, and non-essential digital photos prior to submission may prevent or delay a collection's acceptance.

Photo logs are required in a Windows-compatible spreadsheet using the MAC Lab's template (https://jefpat.maryland.gov/Pages/mac-lab/state-curation.aspx) to ensure sufficient metadata collection for each image. If original photo logs are hand-written, these should be submitted with the paper records, but the digital photo log must be in searchable spreadsheet form, not a scan of a hand-written log.

8.2.3 Report

Submit the final report in .PDF format.

8.2.4 All other records (field notes, lab records, maps, etc.)

Scan all hand-written records into .PDF or .PDF/A format, creating one file for each folder category used in organizing the paper records. Do not create a separate PDF file for each individual page of field records, and do not submit digital field records formatted as images (.jpg, .tif).

Any records that originated as digital files (e.g. a spreadsheet generated for an artifact analysis) should be submitted in a file format that is accepted by the Maryland State Archives (https://msa.maryland.gov/msa/intromsa/html/record_mgmt1/index.html).

8.2.5 File naming protocol

Submit all digital files with names that include a unique project title, followed by an underscore or hyphen and a brief description of the file contents or image title. The project title can be abbreviated but should be distinctive and should not consist solely of a project number. If the project title is somewhat generic, such as a combination of a location and project Phase, add the year to help set it apart. For digital images, add a unique photo number in front of the project title to reflect how they should be sorted (alphabetical sorting alone could separate images that go together in sequence). Do not use spaces in the file names; indicate a space with an underscore or hyphen, or use capitalization to help differentiate words without spaces between. See Table F for more examples.

Non-Image File Name:
[*Project title*]_[*Content Description*].[*extension*]
Example: Willow_Vale_PhI-II_ArtifactCatalogs.xlsx

Image File Name:
[*Image #*]-[*Project title*]-[*Image Title*].[*extension*]
Example: 03-Willow_Vale_PhI-II-Unit-1A.jpg

8.2.6 Digital file delivery

Digital files may be submitted on CD or DVD with the collection, or through cloud-based file sharing systems, such as Google Drive or Dropbox, that do not compress files. Other delivery options may also be considered, so contact MAC Lab curation staff with any questions.

8.3 List of associated records

A list of all paper records and digital files must be compiled and submitted with the collection. The list should include each folder category with a count of the number of pages in the folder, and a list of the corresponding digital file names. See Table F for an example of how to format the list of associated records.

Table F: Hypothetical example projects with folder labels, number of pages of paper records, and corresponding digital file names. Note that no digital file is needed for the contact sheets, just as no individual prints of digital images are needed.

Project Description	Paper Records Folders	# of Pages	Corresponding Digital Files
Phase I survey of three areas along Route 260 [STP Survey only]	Artifact Catalogs	3	Rte260_PhI_2017-ArtifactCatalogs.xlsx
	Field Records	25	Rte260_PhI_2017-FieldRecords.pdf
	Maps	12	Rte260_PhI_2017-Maps.pdf
	Photo Log & Contact Sheet	2	Rte260_PhI_2017-PhotoLog.xlsx 01-Rte260_PhI_2017-Area-A-OverviewFacingNW.jpg 02-Rte260_PhI_2017-Area-B-OverviewFacingEast.jpg 03-Rte260_PhI_2017-Area-C-OverviewFacingSW.jpg
	Report	90	Rte260_PhI_2017-Report.pdf
Phase I/II of Willow Vale Subdivision [STP Survey with two test units and one feature]	Artifact Catalogs	55	Willow_Vale_PhI-II_ArtifactCatalogs.xlsx
	STP Forms	36	Willow_Vale_PhI-II_STPForms.pdf
	Unit Forms	15	Willow_Vale_PhI-II_UnitForms.pdf
	Feature Forms	3	Willow_Vale_PhI-II_FeatureForms.pdf
	Maps	9	Willow_Vale_PhI-II_Maps.pdf
	Photo Log & Contact Sheet	2	Willow_Vale_PhI-II_PhotoLog.xlsx 01-Willow_Vale_PhI-II_OverviewFacingNorth.jpg 02-Willow_Vale_PhI-II_OverviewFacingSW.jpg 03-Willow_Vale_PhI-II_Unit-1A.jpg 04-Willow_Vale_PhI-II_Unit-1B.jpg 05-Willow_Vale_PhI-II_Unit-1C.jpg 06-Willow_Vale_PhI-II_Unit-1-EastProfile.jpg 07-Willow_Vale_PhI-II_Unit-2A.jpg 08- Willow_Vale_PhI-II_Unit-2B.jpg 09- Willow_Vale_PhI-II_Unit-2_WestProfile.jpg 10-Willow_Vale_PhI-II_Feature1Planview.jpg 11- Willow_Vale_PhI-II_Feature1BisectProfile.jpg 12- Willow_Vale_PhI-II_Feature1Final.jpg
	Report	152	Willow_Vale_PhI-II_Report.docx

9. Curation Fees

9.1 Curation box fee for state collections

The curation box fee is a one-time fee with the intent to ensure in perpetuity preservation and accessibility of the state's archaeological collections. Fees will be used in management activities directly related to the preservation of the collections.

9.1.1 Applicable collections

Collections generated as a result of laws and regulations, which require archaeological investigations to evaluate, preserve, or mitigate archaeological resources, and are donated to MHT.

9.1.2 Cost

See the MHT's Archaeological Curation Fee Policy for the current fee schedule or contact the MAC Lab's Curator of State Collections to determine the curation fee cost per project.

9.1.3 Curation box fee exemptions

Archaeological collections donated to the MHT are exempt from the curation box fee if they are:

- Donated by avocational archaeologists or interested persons from their personal collections
- Donated by professional archaeologists or private landowners who generated the collections as a result of emergency or research-related investigations not related to county, state, or federally-mandated compliance projects
- Generated by archaeological investigations on properties owned by, or under easement to, the MHT or by projects receiving MHT grants or loans for archaeological investigations

9.2 Fees for federal collections

Collections from federal land cannot be donated to the state for in-perpetuity curation. When federal collections are held in trust at the MAC Lab they are subject to annual fees and require a purchase order or MOU with the federal owner agency.

Federal curation at the MAC Lab is a fee-for-service program. Fees are based on the estimated staff time needed to curate federal collections in compliance with *36 CFR §79: Curation of Federally-Owned and Administered Archaeological Collections*. The fees vary each year because they are tied to staff time and salary changes. A quote for curation must therefore be obtained from the MAC Lab's Federal Curator prior to delivery.

For more information on curation fees for collections from federally-owned property in Maryland, see https://jefpat.maryland.gov/Pages/mac-lab/federal-curation-fee-policy.aspx**, or contact the MAC Lab's Curator of Federal Collections.**

10. Collection Submittal Requirements

10.1 Submitting a collection for curation

Once a collection is ready to be submitted for permanent curation, consultants must contact MAC Lab curation staff to schedule delivery. The Collections and Record Transmittal Form and Box Inventory Form (see Section 10.2 below) for the collection should be emailed to curation staff for review prior to delivery. Curation staff will take up to five business days to review and approve the forms. Once approved, delivery will be scheduled within ten business days. Upon delivery, consultants will receive a signed delivery receipt. This receipt acknowledges delivery of the collection **only**. An acknowledgement of acceptance of the collection will be sent within 20 business days if no problems are encountered in the accessioning of the collection.

Delivery should be made in person. Exceptions may be made for small collections or collections where there are records only with prior approval from MAC Lab curation staff.

10.2 Forms

Forms required for collections submission:

- Collections and Record Transmittal Form
- Box Inventory Form
- Conservation Checklist
- Deed of Gift, Quitclaim Deed of Gift, Letter of Transfer, or agreement for curatorial services

Digital versions of these forms can be found at https://jefpat.maryland.gov/Pages/mac-lab/state-curation.aspx for state collections or https://jefpat.maryland.gov/Pages/mac-lab/federal-curation.aspx for federal collections.

For questions about Deeds of Gift or Letters of Transfer, please contact the MAC Lab's Curator of State Collections.

10.3 Fee payment

Payment is required either prior to or at the time of delivery of the collection.

- Checks should be made payable to "MDP/JPPM"
- MasterCard and VISA are also accepted

Appendix V

Historic Contexts in Maryland

Revised March 2026

Historic Context Organization

Historic Contexts in the Maryland State Comprehensive Historic Preservation Plan (see Weissman 1986) are organized first by geographic region, then by time/developmental period, and then by theme (field of activity or area of significance) and the types of cultural resources associated with each there. This organizational system provides a necessary framework for the description and analysis of all known or expected cultural resource types, and the basis for evaluating the significance of those resources.

The eight **geographic regions** of the state are generally recognized physiographic provinces which also have distinctive cultural histories. The eight regions are as follows:

I. **Eastern Shore Coastal Plain**
II. **Western Shore Coastal Plain**
III. **Eastern Piedmont**
IV. **Lancaster-Frederick Lowland**
V. **Blue Ridge**
VI. **Great Valley**
VII. **Ridge and Valley**
VIII. **Allegheny Plateau**

These regions are defined on the map which appears on the next page. This map is also available on Medusa under the *Other MHT Base Data* layer (Physiographic Provinces).

Each of the above geographic regions will then be divided into the following **time/developmental periods:**

A. Paleoindian **11000 - 9500 B.C.**

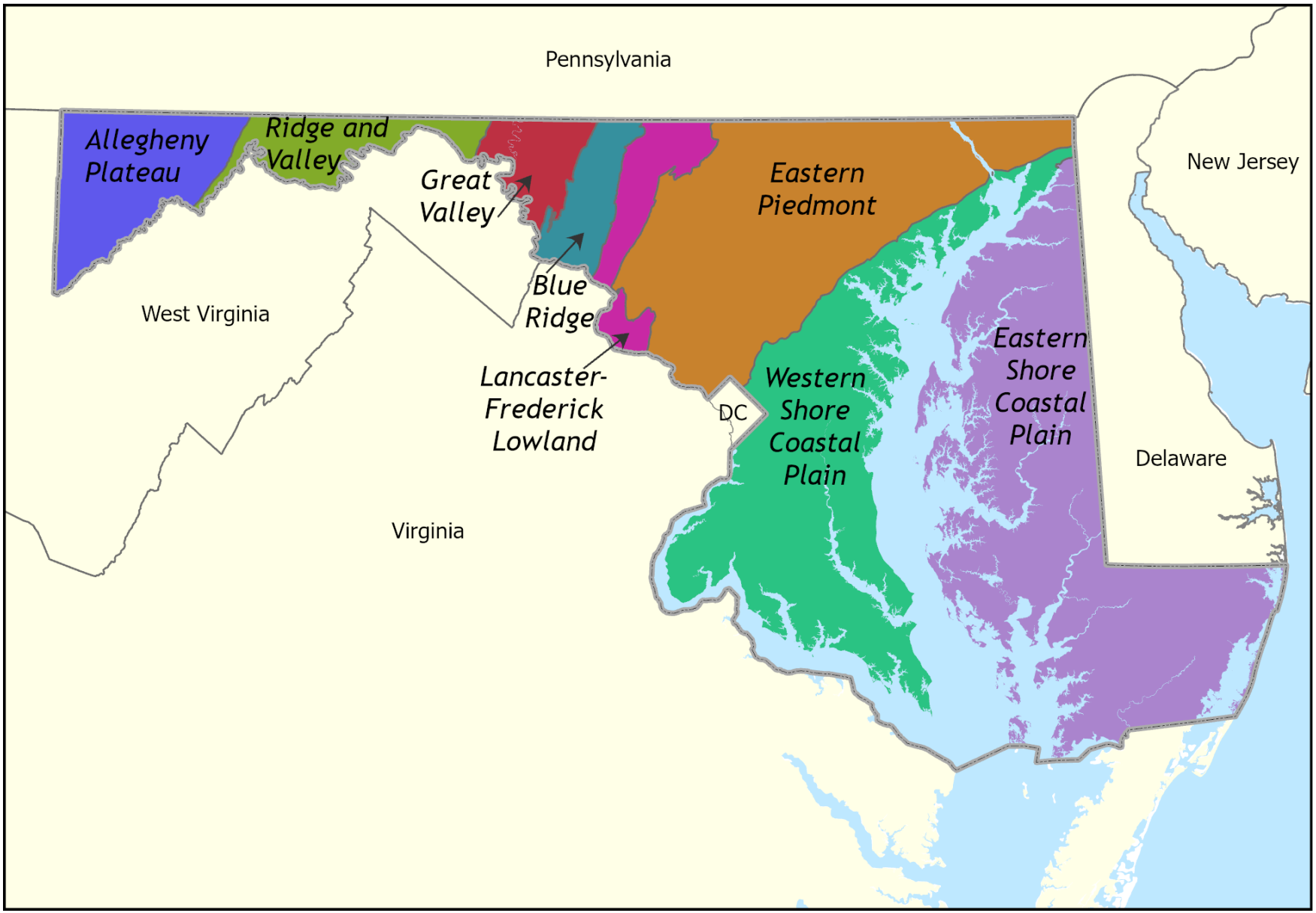
Evidence indicates that small mobile bands, dependent primarily on hunting but also utilizing a variety of other resources, inhabited a much colder, late glacial environment. The Chesapeake Bay had not yet formed and the Bay area would have been mostly dry land along the ancestral Susquehanna River that flowed into the Atlantic Ocean.

B. Early Archaic **9500 - 7000 B.C.**

General social organization remained much the same as the band-level societies of the Paleoindian period. However, a warming climate with an attendant replacement of boreal forests with deciduous forests and smaller animals such as deer, resulted in gradual cultural change. Groups may have become less mobile, more localized, and more seasonally organized. Groundstone tools appear.

C. Middle Archaic **7000 - 3750 B.C.**

More modern environmental conditions led to a probable rise in population due to more available food resources. Increasing emphasis was placed on exploiting a diversity of varied resources. The embayment of the Susquehanna drainage was underway, and as a result oysters may have been available for harvesting. Settlement tended to center around inland swamps, with short-term camps in the upland areas. Group mobility and territory size probably decreased as populations increased. Atlatl weights,



The Physiographic Provinces of Maryland

celts, adzes, grooved axes, and plant-processing tools such as mortars and pestles become more common.

D. Late Archaic 3750 - 1250 B.C.

Increased sedentism arises by the end of this period. Although the social system is still at a band level, seasonal population aggregation is occurring at larger camps where seasonally available food resources such as nuts and fish are harvested. The Chesapeake Bay and the plant communities that surround it had largely achieved their current states during the Late Archaic. Soapstone bowls appear at the end of the Late Archaic.

E. Early Woodland 1250 B.C. - A.D. 50

Increasingly sedentary lifestyle. Wide-ranging trade networks established. Ceramics appear. Increasingly complex social systems.

F. Middle Woodland A.D. 50 – 950

Continued increase in social system complexity. The pattern of seasonal movement between larger multi-band base camps and smaller, family-sized summer camps continued. Probably first beginnings of horticulture but still main emphasis on hunting and gathering. Continued trade networks.

G. Late Woodland A.D. 950 - 1600

Tribal level societies emerge, dependent on agriculture for main source of food. The villages were moved periodically. The cultivation of corn, squash, and beans became widespread during this period, although wild game and plants were still extensively procured. The most important technological innovation of the period was the introduction of the bow and arrow. Hostility may have increased between groups at this time as evidenced by the fortification of villages. The groups formed during this period formed the basis for the tribes encountered by Europeans when first settled.

H. Contact and Settlement Period 1570 – 1750 A.D.

This phase is first characterized by contact and interaction amongst the native Indian tribes and the newly arrived Europeans. The development of trading posts, missions, forts and Indian reservations occurs. European settlers created capitals at St. Mary's City and Annapolis, and established an economy based on tobacco production in the Chesapeake region. Colonial settlement occurred first near the Chesapeake, expanding along the bay and rivers, and gradually moving into western lands as road networks were established.

I. Rural Agrarian Intensification 1680 - 1815 A.D.

This period saw the lessening of frontier conditions in most parts of the state, and the establishment of an agricultural society buoyed by enslaved laborers, with tobacco replaced by agricultural diversity. Increased trade and shipping led to the founding of port towns and trading centers. Expansion into central and western Maryland was virtually completed, and the arrival of German settlers from Pennsylvania created a distinct cultural region. Several changes in the system of government occurred, from proprietary to provincial to state government. Religious, social, cultural, and educational institutions were established in most of the state, and small local industries began to appear.

J. Agricultural-Industrial Transition 1815 - 1870 A.D.

During the period following the War of 1812, commerce and industry became increasingly important in the state's economy, until development in these fields was interrupted by the Civil War. The abolishment of slavery changed the agricultural industry and systems of labor during this period. The impacts of the Industrial Revolution were seen, such as the growth of manufacturing technology and radical innovations in transportation systems (canals, railroads, turnpikes). These improved transportation techniques led to the development of Western Maryland and aided in the growth of the mining industry in that region. At the same time, Baltimore City became a major port and industrial and cultural center.

K. Industrial/Urban Dominance 1870 - 1930 A.D.

In Maryland, the period following the Civil War saw a shift from a primarily agricultural economy to one which was dominated by industry and commerce. This trend was accompanied by the increasing dominance of towns and cities over rural areas, and the growing separation of urban and rural culture. Cities such as Baltimore, Cumberland, and Hagerstown experienced great growth, partly due to the arrival of many immigrants. The state became part of national economic and transportation networks, and with World War I, entered the international scene. Planned communities and suburban developments began to surround the major cities, which were becoming metropolitan centers.

L. Modern Period 1930 - Present

The effects of the Depression, and then the prosperity and growth after World War II, were seen in Maryland, as the state was increasingly influenced by national and international events, due to rapid advances in technology and mass communications. The dominance of urban and industrial culture became clearly established, although rural agricultural areas still comprised a large portion of the state. Baltimore and Washington, D.C. especially, were centers of commerce, industry, and culture, although later in the period these cities experienced a decline, reflecting a national trend. As many residents and businesses moved from the inner cities to the suburbs, suburban areas developed as a new center of influence in the state, with the greatest growth in the Baltimore-Washington-Annapolis area.

Within each of the above time/developmental periods, information is then organized under themes. These themes reflect broad areas of human activity, and can be used as areas of significance for all types of cultural resources. Each theme will then be divided by function into the resource types associated with the theme. The themes, and examples of the types of resources to be included under each theme, follow below. The themes used for the precontact time periods (A-G above) vary slightly from those used for historic time periods (H-L).

Precontact Period Themes

During the 13,000 years of precontact Indian occupation in Maryland, a variety of cultural traditions developed and changed, leaving behind but a small portion of their material remains. But through the scientific study of these remains and associated environmental data, researchers can determine the significant variables of the cultural systems which existed. These variables are interpolated so that a change in one variable causes changes in other variables. By taking a culture systems approach and developing themes which correspond to the variables of all culture systems,

the state plan provides a mechanism to promote research and preservation of the variety of sites which can contribute to our understanding of past cultures.

1. Subsistence Theme

This theme seeks explanations of the different strategies that cultures developed to procure, process, and store food. Beyond the basic studies of site function based on the analysis of a site location, the tool types from the site, and the food remains recovered,
this theme also explores the reconstruction of past habitats, study of the energy required to procure and process food, functional analysis of tools to determine what resources were being procured and processed, and the evolution of subsistence strategies over time and between different regions of the state. Site types represent the entire range of precontact sites.

2. Settlement Theme

The settlement theme seeks explanations of different utilization of a region in response to subsistence, political demographic, and religious aspects of the culture system. While the studies primarily explore the subsistence-induced aspects of settlement patterns, studies of house types, village plans, and regional distributions are also combined with an analysis of the social and political aspects of settlement. Site types again reflect the entire range of sites.

3. Political Theme

This theme explores the inter-relationships of contemporaneous cultures and group interaction within cultures. Thus, research questions focus on the nature of the different levels of social organization, kinship system which contribute to social integration, the
intensification of production, fortification, resource redistribution, or migration in response to culture conflict or contact. The type of sites for this theme include fortified village sites and hamlet sites.

4. Demographic Theme

The evaluation of population trends through time as well as the factors affecting the health, mortality, and distribution of populations is the subject of this theme. Research issues include the study of adaptive responses to overpopulation or underpopulation, population composition and population control. Site types include a range of sites and chronological diagnostic artifact types.

5. Religious Theme

The religious theme explores the world view of various cultures of the material manifestations of spiritual beliefs. Research issues include artifact analysis to reveal regional trends and influences in religious beliefs and study of technological aspects of religious beliefs. Site types include sites containing features or objects associated with religious activities.

6. Technology Theme

Although the technological aspects of a culture form the primary basis of interpretation of all themes, this theme relates primarily to the study of mechanisms developed to transform the social

and cultural environment. Research issues include the identification of changing tool type styles, the identification of different functions of tools, replication, experimental and living archaeology, as well as studies of storage, transportation, and housing technologies. All sites containing artifacts or features can contribute to this theme.

7. Environmental Adaption Theme

The environmental adaptation theme seeks geological, ethnobotanical, zooarchaeological, and other data to reconstruct environmental changes and explores adaptive responses to those changes. Research studies include analysis of changes in sea level, forest and animal compositions and the resultant changes in carrying capacity, the energy efficiency of various procurement and feeding strategies, and the culture processes which explain the perceived responses to the changing environmental conditions. All site types are included in this theme.

Historic Period Themes

1. Agriculture

The agriculture theme relates to subsistence farming, crop, and livestock production and includes the following resource types: small family farmsteads, plantations, tobacco farms, grain producing farms, livestock/dairy farms, orchards and agribusiness.

2. Architecture, Landscape Architecture, Community Planning

These themes encompass the history of design and construction in architecture, landscape architecture, and the planning of towns and cities. Resource types include impermanent structures, rural vernacular, urban vernacular, great architectural landmarks, national styles, parks, gardens and landscaped cemeteries, town and village plans, urban design, planned communities and company towns.

3. Economic (Commercial and Industrial)

Commercial activities include trade, finance, business, and commercial services. Examples of resource types are banks, other financial areas (real estate, insurance, etc.), trading posts, stores, market buildings, restaurants, hotels, taverns, gas stations, and other services.

Industrial activities relate to the extraction, production and processing of materials, such as quarrying, mining, manufacturing, lumbering, technology, electronics, pottery, textiles, food gathering and processing, brewing and distilling, fuel, building materials, tools, transportation, seafood, and many other industries. Resource types associated with industry are quarries, mills, factories, breweries, floating vessels and shipyards, mines, forges and furnaces, kilns, laboratories, power plants, dams, tanneries, and other small industrial sites.

Many forms of communication also are included under commerce and industry, such as telegraph, telephone, radio and television.

4. Government/Law:

This theme studies governmental systems, political activities and events, legal systems, important political/governmental events in history (treaty signings), and political leaders. Types of resources which represent this theme are county seats, city halls, town halls, courthouses, police departments, jails, post offices, fire departments, public works projects, other types of government buildings, and sites of important governmental events or places associated with governmental leaders.

5. Military

This theme includes military activity, battles, strategic locations, and events important in military history. It includes the following resource types: armories, fortifications, battlefields, camps, travel routes, military bases, military prisons, shipwrecks, aircraft and strategic military points such as crossings and lookouts.

6. Religion

This area of study examines places of worship, religious training and education, and administration of religious facilities. Churches, meeting houses, synagogues, mosques, temples, convents, monasteries, missions, shrines, and sacred places are resource types associated with this theme.

7. Social/Educational/Cultural

These themes encompass social, educational, and cultural activities and institutions; human services, welfare, charitable, fraternal, and community organizations; the fine arts and performing arts (painting, sculpture, dance, drama, music); literature; social and recreational gathering facilities; entertainment and leisure activity; and broad social, cultural, or intellectual movements. Resource types include libraries, museums, schools, colleges, hospitals, orphanages, fraternal and social meeting halls, community centers, theatres and concert halls, places associated with writers, artists, performers, resorts, amusement parks, zoos, sports facilities. Landscaped gardens, parks, and cemeteries are listed under the Architecture/Landscape Architecture/Community Planning theme.

8. Transportation:

This theme relates to transportation networks - road, water, canal, railroad, and air -- and the various structures, vehicles, equipment, and technology associated with each mode of transport. Resource types include bridges of all types; boats and other watercraft, piers and wharves, ferries, lighthouses; roads and turnpikes, tollhouses, automobiles, streetcars, and other vehicles; canals, locks, and associated structures; railroads, stations, engine houses, trains; airports, airplanes, landing fields, space vehicles; and research facilities associated with transportation systems.

For each of the resource types listed under historic period themes, several classes of site types can then be analyzed. These site types include:

1. Archaeological Sites
2. Standing Structures
3. Landscape Features
4. Town/City Plans
5. Objects
6. Intangibles