Archaeological Survey

in Delaware

February 2015

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ARCHAEOLOGICAL SURVEY IN DELAWARE

INTRODUCTION

This guidance is to assist people carrying out archaeological surveys in Delaware. Most surveys are performed as part of the federal-state partnership established by the National Historic Preservation Act of 1966 (as amended).[1] The following guidance seeks to ensure that surveys carried out in Delaware for federal projects will meet the federal requirements. The Delaware State Historic Preservation Office (DE SHPO), a section of the Division of Historical and Cultural Affairs (DHCA), is the main repository for information on historic properties. The Division's Research Center includes reports and forms from previous archaeological surveys. The Division maintains the Delaware State Archaeological Collections, which includes artifact collections, associated records, and reports. In addition, there is an archaeological research library.

The intention of these guidelines is to standardize and efficiently manage all the archaeological data in the State of Delaware. They are to be followed for all archaeological investigations performed to comply with federal or state laws. These guidelines are based on the **Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation**.[2]

What Is A Cultural Resource Survey?

A *Cultural Resource Survey* is the systematic location, description, and evaluation of the physical remains of our past, such as older buildings that are still standing and archaeological sites. An *Identification survey* provides the primary data about where things are on the landscape, what they are, and how important they are to our knowledge and sense of the past. *Evaluation Survey* in this program, and throughout this document, means measuring a located property against the standards set by the National Park Service (NPS) for inclusion to the National Register of Historic Places (National Register). Some private developers and property owners are also subject to these federal regulations[3] because they need a federal permit or monies to carry out a proposed activity and the federal agency granting the permit or monies has delegated this responsibility to the applicant.

Archeological surveys must be directed by professionals trained in archeological practice and methods. Professional qualification standards[4] for principal investigators on such surveys are among **the Secretary of the Interior's Standards**.

State Laws

State law requires that any archaeological work on state-owned lands be conducted under a

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[1] See http://www.achp.gov/nhpa.html
[2] See http://www.cr.nps.gov/local-law/arch_stnds_0.htm
[3] See Section 106 Regulations, http://www.achp.gov/work106.html
[4] See http://www.nps.gov/history/local-law/arch_stnds_9.htm

Delaware Antiquities Act permit (7 Del Code Ch. 53)[5] from the Director of the Division. The Delaware Department of Natural Resources and Environmental Control has regulations (Delaware State Park Regulations, Title 7, §9201, 3.1.6 and 3.1.7[6]) that protects archaeological sites in their jurisdiction from any disturbance including unauthorized collection or excavation. *The Delaware Unmarked Human Remains Act* (7 Del. Code Ch. 54)[7] further requires that the discovery of unmarked human remains during any project, private or public, must be reported to the Division Director, and triggers a public notification period, during which project work must stop in the area of the remains. Depending on whether the remains are from pre-contact populations or not, the Human Remains Committee decides on their disposition, or descendants found during the notification process may claim the remains. If the remains are to be removed, an archaeological survey and excavation of them must be done under the review of the DE SHPO.

The Section 106 Process

Many of the users of this document will be consultants working for agencies that are required to evaluate the effect of their projects on architectural and archeological historic resources. The law that mandates this activity is Section 106 of the National Historic Preservation Act of 1966, as amended. Any time federal funding is used or licensing is required, the activity must take into account the effect on historic properties. For more information about the Section 106 process, check the Advisory Council on Historic Preservation's web site, www.achp.gov/ or the DE SHPO web site at http://history.delaware.gov/preservation/index.shtml.

The Role of Management Plans and Historic Context Documents in Survey

The DE SHPO has sponsored the development of cultural resource management plans and related historic contexts. These plans are our collective knowledge and experience and are used as a framework for the study of cultural resources in Delaware. Surveyors should fit their work into this framework, and contribute to the goals and priorities of these plans whenever possible. The surveyor is invited to contribute to these plans by identifying the weaknesses in and providing new interpretations of historic context information when warranted.

Historic Contexts

Contexts are useful ways to accumulate existing research on a topic, relate it to resources that are already known and have been explored, and set up ways to look at newly discovered resources. Avenues of research and inquiry pursued by the authors are included in the texts of these documents, as are how their research designs worked and recommendations for further work. These can be very useful to lay a ground work for the work ahead and can save time, especially in the evaluation of

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[5] See Delaware Code On-line, http://delcode.delaware.gov/title7/c053/index.shtml
[6] See Delaware Administrative Code On-line,
http://regulations.delaware.gov/AdminCode/title7/9000/9200%20Operation%20and%20Maintenance%20Section/9201.htm#TopOfPage
[7] See Delaware Code On-line, http://delcode.delaware.gov/title7/c054/index.shtml

newly identified resources for the National Register. Also, it is expected that all work will be in a similar format and contain the same components to be of use to future researchers.

Fully developed historic contexts deal with issues of National Register eligibility of property types. Criteria are set for significance and integrity based on the findings of the context that augment and refine the standard National Register criteria of significance and integrity. Items to consider when developing these more targeted criteria include the relative rarity of the resource, relative importance within the group studied, and the level and aspects of physical integrity required to convey this significance.[8] For example, the report **Agricultural Tenancy in Central Delaware, 1770-1900 +/-: A Historic Context** presents the unique background of tenancy in Delaware and can be used to evaluate the smaller, more ephemeral 19th-century agricultural sites.

For evaluation-level surveys, if no previous contexts or management plans provide applicable criteria, the survey report must set out the criteria used for evaluating all the surveyed properties, and specifically measure each surveyed property against these criteria to justify the eligibility decisions made, whether eligible or not eligible. (See Report Guidelines below, p. 24.)

Levels of Survey and Reporting

In the federal program, there are two levels of survey: identification and evaluation. These build on one another and lead to determining the eligibility of properties for the National Register of Historic Places. This is the federal list of properties worthy of historic preservation. Not every survey will go through both levels.

The general goal of the Identification survey is to **find and identify archaeological sites and historic properties on a given parcel of land**. For identification survey that will be archived by the DE SHPO, standard forms are filled out or updated for each historic property located. Each property is photographed and mapped. A unique number (known as a Cultural Resource Survey or CRS number) will be provided by DE SHPO staff to relate all forms, photographs and mapping to a specific property. (See Data Coordination Guidance[9] for specific instructions on each form.)

Evaluation survey **looks at the identified properties and considers their eligibility for the National Register, based on federally determined criteria**.[10] Properties may be eligible individually or collectively as a district. Individual properties can also be grouped by theme and related historically.

All surveys carried out for federal and state projects must result in a report. The report explains the research design, presents the historical background, and discusses fully the results of the survey. Appendices may include forms, photographs, and supplementary material. Format and contents of a survey report are discussed below for each level of survey. However, the levels may be combined in a single overall survey report. Of course, all federally funded or permitted surveys should conform to the Secretary of the Interior's Standards and Guidelines[11] for Identification, Evaluation,

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[8] See Historic Context Guidance For Evaluation Survey, on http://history.delaware.gov/preservation/surveys.shtml.
[9] See http://history.delaware.gov/preservation/surveys.shtml for link to guidance.
[10] See http://www.nps.gov/history/nr/publications/bulletins/nrb15/nrb15_2.htm.
[11] See http://www.nps.gov/history/local-law/arch_stnds_0.htm .

Archeological Documentation, and Historical Documentation, as appropriate. Other surveys are encouraged to meet these standards as they represent best practices of the profession.

Treatment or Mitigation

The treatment plan is not a part of the survey process but often results from it. The Section 106 process mandates a series of negotiations among interested parties that is formalized by a Memorandum of Agreement. A formal treatment plan must be approved by the consulting parties before any physical action is undertaken. Treatment actions are used to mitigate the damage a federal project can have on a historic property or site. These actions are implemented once the significant resources in a project area are known and the adverse effects identified. Certain kinds of treatment result in reports that must meet the Secretary's Standards and Guidelines and the DE SHPO Guidelines. The DE SHPO reviews data recovery reports using the same general standards as discussed in this manual.

Consultation with the DE SHPO staff is encouraged at any points where guidance is needed or questions arise that are not covered in these guidelines.

IDENTIFICATION LEVEL SURVEY

GOALS

In archaeological surveys this level of work features pedestrian survey and surface collection and subsurface testing to locate and identify an archaeological site. Once one is found, the investigations should provide a **preliminary** assessment of a site's integrity, horizontal boundaries, and, possibly, its data potential. If there is poor surface visibility, then the surveyors must test below the surface for such site information. Sufficient information should be gathered to allow the surveyor to fill out a site form for each located site. While this level of testing may not answer the questions about a site's eligibility, occasionally, it can determine if the integrity of the site is so poor that the site is **not** eligible.

> ***Other Terms:*** *The term Reconnaissance Level survey is used by National Park Service and the term Identification/Location Level survey is used by the Advisory Council on Historic Preservation. In these guidelines, we will use the latter, but the two terms are interchangeable. Also, it is often called a Phase I or Phase IB Survey in the 106 process, if done separately from the evaluation survey.*

ARCHAEOLOGICAL SITE DEFINITION

The Site Number

The DE SHPO is using the following standards and procedures for assigning site numbers. The overall site number is assigned usually on the basis of an identification survey when little is known at that time about the nature or extent of the site. This number primarily denotes a locus of human activity, indicated by the presence of buildings, structures, or ruins, artifact concentrations, soil discolorations, or other surface or sub-surface signs of the modification or use of a geographic area bounded by visible natural or cultural features, such as ephemeral or permanent streams, or roads and field boundaries (depending upon the time period of the site). Pre-contact sites and post-European contact sites at the same location receive the same number

Sometimes artifact concentrations alone are not altogether reliable indicators of a site's actual boundaries. Often concentrations that appear discontinuous on the surface are found to be connected during sub-surface testing, and merely denote areas of greater activity. At other times, features are found outside of the artifact concentration. Therefore the DE SHPO assigns a single site number to a geographic locus and gives letter designations to differentiate sub-areas within that locus. A single artifact with no other site areas or components in the related area does not constitute a site, but is labeled a find spot or isolated find, and is not given a site or CRS number.

In urban areas, the site number is given to the National Register Historic District (if one has been designated) or to a section of the urban landscape that shares a common historical development.

Individual lots or areas being excavated are denoted by sub-area letters, as above, or, in Wilmington, by the block number.

All sites located must be recorded, even if they appear to be "modern." However, investigation of sites that are less than 50 years old generally needs only be sufficient to identify the time period covered by the site, since sites of this age do not meet the National Register age criterion but could be subject to an exception. Note that buildings, structures, objects, and specialized landscapes such as cemeteries are recorded as archaeological sites (on form CRS-4) only when they are archaeologically tested. If extant resources over fifty years old exist on the site, they too must be included in the survey and the location assigned a CRS number.

Once a site number is assigned, the Principal Investigator must request a provenience/catalogue number from the Division's Curator of Archaeology. This number is the basis for labeling the artifacts and containers during laboratory processing. It is important to obtain this number early, to ensure that proveniences are maintained during analysis.

How Many Artifacts Do You Find Before A Location Is Deemed A Site?

The SHPO has resisted a "rule of thumb" definition of a site. We suggest if one finds a number of artifacts from the same time period in contiguous shovel tests or in surface concentration, one may have found a site. However, **there are many exceptions**. First, there are certain populations who left very little that would be detectable through standard survey methods; yet their archaeological traces are very important to our heritage. Any artifact left from people of the Paleo-Indian period or Early Colonial period **may** merit further investigations in the field to determine if there is a site (a locus of human activity) or not.[12] The presence of an intact subsurface cultural feature would also qualify as a site. In contrast, artifacts redeposited by alluvial or tidal actions or by modern construction hold little archaeological value. Also, artifacts that have been deposited by casual discard (roadside litter, such as modern bottle glass fragments) or field scatter resulting from manuring would not be deemed a site or merit a site number.

Field Scatter

A common phenomenon in Delaware, historic *field scatter*, is caused by the post-1830 practice of field manuring, to increase the fertility of the soil. This manure included all the trash and garbage from the farm, so it is common to find a light scatter of nineteenth-century domestic artifacts over agricultural fields. Such scatters evidence this kind of farming practice and should be noted in the survey report. Artifacts recovered are given a general provenience catalog number, and not given a site or CRS number. Our rationale is that the *field scatter* is ubiquitous and the research potential too limited to merit a site form.

If you have questions about designating an area as a site, consult with the DE SHPO.

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[12] See http://history.delaware.gov/pdfs/17thcentury_delaware.pdf and http://history.delaware.gov/pdfs/liebknecht_paper.pdf for more information.

INITIATING THE ARCHAEOLOGICAL SURVEY: THE RESEARCH DESIGN

The purpose for doing an identification survey guides the PI in developing an approach to the survey, known as the **research design**. At this point in the project, it is critical for the PI to think about what to do (objectives), how to do it (methods), and what may be found (expected results*). **The primary objective is to identify archaeological sites and/ or historic properties within a given study area.** The area must be clearly defined on a map. The methods need to include research, field, and laboratory analysis methods. The investigator should look at satellite and aerial photography of the area to get an initial idea of the topography, land forms, vegetation, and possible areas of disturbance, so the PI can better plan the work and incorporate this information in the research design. The expected results depend on the area or theme of the survey. Is the area urban, rural, or suburban? Is the theme based on a particular site type, an event, or a time period? The PI defines the research design so that everyone working on the survey understands what needs to be accomplished.

Public Involvement

To build good will with inhabitants of the survey area, the PI or the client agency may want to notify the town and/or county government and any local historical society prior to any field work. This will assist in the next stage by starting the process of locating local informants and may provide historical sources not found in the major archives.

While it is the responsibility of the federal agency and/or the recipient of federal funds or permits to perform public outreach for a Section 106 project, at some point it will usually involve the cultural resource team as well. Public outreach activities can range from tours and public days to talks with concerned groups to classroom presentations. The Principal Investigator especially needs to include outreach to ethnic minority groups when the expected property types include buildings or sites related to the history of those groups.

Historical and Background Research

We recommend the investigator perform substantial documentary research (not just consult standard historic atlases) before initiating subsurface testing. Background research or familiarization with the area to be studied is the beginning point of any survey but can also be a discrete level of survey. (It is what is called a Phase IA Survey in the 106 process.) At this level, the surveyors gather all relevant secondary and readily available primary source material on the history of the project area, to allow the surveyors to identify the historic contexts and property types that will **most likely** be encountered in the area and on which a preliminary research design can be based.

There are many good sources of background information for survey. DE SHPO maintains files and reports on the results of previous surveys (Cultural Resource Survey Inventory) and of National Register nominations. It also has a small library of other studies and reports dealing with Delaware's history and architecture, and with national preservation programs and issues. The Division maintains the Delaware State Archaeological Collections, including a research library of Delaware's and other areas' archaeology and material culture and of Delaware's history. The investigator is encouraged to

review extant collections previously recovered near the project area. These collections provide excellent sources of comparative material for research and analysis. Other collections are owned by the University of Delaware Department of Anthropology, which maintains its own repository.

The main repositories for archival and historical information on Delaware history are the Delaware Public Archives in the Hall of Records in Dover, the University of Delaware Morris Library in Newark, the Historical Society of Delaware and the Wilmington Institute Library in Wilmington, the Maryland State Archives, and the Historical Society of Pennsylvania in Philadelphia. Repositories of specialized collections in the state include: Hagley Museum and Library for economic and industrial history; Winterthur Museum, Library and Gardens for architecture, landscape architecture and decorative arts; and the Delaware Agricultural Museum and Village for agricultural history and material culture, especially nineteenth and early twentieth centuries.

Before any field work, the PI insures that enough background research on the area or theme is done to establish what is already known. The researcher looks for histories and maps of the state and local area.

Table 1: List of Archival and Historical Repositories in Delaware

Name of Repository
Delaware Public Archives
Delaware Historical Society
Hagley Museum and Library
Wilmington Institute Library
University of Delaware Morris Library
Delaware State University William C. Jason Library
DE SHPO Research Center
Local community historical societies
Local libraries

The Division's Research Center contains reports of previous surveys, maps, and historic property files. The researcher should check the unpublished reports and consult the maps and historic property files to determine what is known in the project area and whether the previous survey information needs to be updated or not.

Table 2: List of Readily Available Maps and Aerial Photographs

Title of Historic Map or Aerial Photograph	Source	Format	Date
Baist Atlas of New Castle County	DPA[13], DHCA[14]	Paper, film	1893
DE SHPO Cultural and Historic Resource Information System[15] (CHRIS): geographic information mapping portal; all material geo-referenced; includes historic aerial photography; historic property inventory mapped as points with attached forms (incomplete); National Register properties	On-line	Digital	aerial photographs 1937, 1961, 1992, 1997, 2002, and 2007

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[13] Delaware Public Archives, http://archives.delaware.gov
[14] Division of Historical and Cultural Affairs, http://history.delaware.gov

mapped as points with nominations and photographs linked; National Historic Landmark property boundaries mapped as polygons; National Register district boundaries mapped as polygons			
Dallin Aerial Survey Company (Wilmington, northern, and central Delaware, oblique & some vertical views)	Hagley (on-line)[16]	Paper, digital	1924-1941
Delaware aerial photography	UD DEMAC on-line[17]	Digital	1937, 1954, 1961, 1968, 1992, 1997, 2002, 2007, 2010, 2011, 2012
Delaware Department of Transportation Aerial Photograph Collection	DPA	Paper	1932-1972
Hopkins Atlas of New Castle County	DPA, DHCA	Paper, film	1881
Nautical charts and miscellaneous maps	NOAA (on-line)[18]	digital	c. 1800-2000
Pomeroy and Beers Atlas of Delaware	DPA, DHCA	Paper, film, digital, GIS	1868
Rea and Price Map of Delaware	DPA, DHCA	Paper, film	1856
Rea and Price Map of New Castle County	DPA, DHCA	Paper, film	1849
Sanborn maps of Delaware towns	DPA, DHCA	Film, digital	1880s – 1950s
US Army Air Corps (for DE State Highway Dept.) aerial photographs (coastal only)	Hagley	Paper, digital	1926
US Coast and Geodetic Survey	DPA, DHCA	Paper, film	1848
USDA statewide aerial photographs	DPA, DHCA, UD DEMAC on-line	Paper, digital	1937-38
USGS topographic maps, 15' series	DHCA, Maptech (on-line)[19]	Digital	1902-1936
USGS topographic maps, all series	USGS (on-line map explorer)[20]	Digital	1896-1997

Methods

Archaeological survey can examine the entire project area or only a portion thereof, based on a specific sampling strategy, which must be justified. When the survey strategy is based on a predictive

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[15] Division of Historical and Cultural Affairs, https://chris-users.delaware.gov.

[16] Hagley Museum and Library, http://digital.hagley.org/cdm4/index_p268001uw.php?CISOROOT=/p268001uw.

[17] UD DEMAC, http://demac.udel.edu/data/aerial-photography; available as map tiles or as GIS map service.

18 National Oceanic and Atmospheric Administration, Office of Coast Survey, Historical Map & Chart Project, http://historicalcharts.noaa.gov/historicals/historical_zoom.asp.

19 Maptech, http://historical.maptech.com/.

20 USGS Historical Topographic Map Explorer, http://historicalmaps.arcgis.com/usgs/.

model for site location, some testing must be carried out in areas of low potential as well as in areas of moderate to high potential to test the model. The survey should be designed to provide a statistically representative sample of the project area (reconnaissance/identification level surveys) or of the site (evaluation/ intensive level surveys). No one particular kind of testing or analysis, sample intervals, or intensity of coverage is mandated here. The intent of these guidelines is to establish minimum expectations for particular methods when they are to be applied in any given situation.

The methods designed for the survey must be appropriate to the level of work proposed and to the kinds of research information that the Principal Investigator intends to recover. DE SHPO recommends that agencies sponsoring archaeological surveys submit their draft *request for proposals* (RFP) to DE SHPO for review. Under Section 106, agencies are required to consult beforehand with DE SHPO over the level of effort involved. Scopes of work for projects on state-owned or controlled lands must be submitted in advance to the Director of the Division of Historical and Cultural Affairs in accordance with the Delaware Antiquities Act (Delaware Code Title 7, Chapter 53[21]). DE SHPO is available to offer advice on evaluating proposals in response to RFPs.

Expected Results

A discussion of expected results often means applying the predictive model and stating how likely it is that different site types of various time periods are present in the survey areas. State the expected property types, their density, and probable locations. For example, certain types of sites are strongly linked to certain types of locations, such as mills on streams above the head of navigation. A basic statement on expectations is all that is needed. For example, sites in Wilmington's East Side Historic District are expected to date from the mid- to late nineteenth century and early twentieth century. In rural areas, expected results might range from pre-contact sites to early twentieth century sites.

FIELD METHODS

Field methods are designed to create a permanent record of the survey and sites tested. Complete and careful field notes, photographs, artifact documentation, drawings, etc. are critical to this effort. Field methods can include (but are not limited to) remote sensing, mapping, surface collection, hand-excavation of shovel test pits and/or larger unit test pits along a transect or within a grid, split-spoon auguring, feature excavation, and controlled mechanical excavation. Usually, a good field strategy will not rely on a single method; a variety of techniques should be employed as appropriate to the nature of the site and the expected data.

Field survey should always begin with a walkover of the project area. Because existing landscape features and/or buildings are relevant parts of many sites, their examination and recordation through measured drawings, photography, contour maps, and/or location maps are frequently necessary as well.

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21 See Delaware Code On-line, http://delcode.delaware.gov/title7/c053/index.shtml

Remote Sensing

In some circumstances, applying remote sensing methods,[22] such as ground-penetrating radar, soil resistivity, metal detector, and magnetometer surveys, are useful in planning the remainder of the fieldwork approach. However, the investigator should always keep in mind the limitations of the method chosen. For example, ground-penetrating radar has been helpful in identifying grave shafts in cemeteries, but ineffective in wet soils and detecting deeply buried features. The operator of these tools must be qualified and experienced in using them in archaeological contexts.

Surface Survey

General or controlled surface collection of artifacts can be used for reconnaissance/identification-level surveys in areas where adequate ground visibility is available (e.g., a recently plowed field). If the project area includes an agricultural field which is currently fallow, plowing and disking[23] can be used to provide appropriate ground visibility. Each area should be examined from at least two angles of view. Note that in all identification surveys, surface survey **must be augmented** with sub-surface testing to determine site formation and site structure, integrity, and potential for sub-surface features.

Documentation

Field measurements can be in either feet and tenths of feet or metric for historic period sites, but on sites representing occupation by pre-contact people, metric units should be used. All field observations must be recorded in a field log or excavation record, and profile and plan drawings and color digital photographs must be made of all features and a sample of units as appropriate. Representative samples of diagnostic artifacts should be photographed and/or drawn.

Sub-surface testing

Sub-surface testing usually involves the hand-excavation of shovel test pits and/or measured excavation units along a transect or within a grid. *The intervals between the shovel tests unit can vary, but should not exceed 50 feet*. Other discretionary testing strategies can be used, either alone or in addition to a transect/grid approach. In either case, the research design must explicitly state how the testing strategy will meet the objectives of the survey. In every sub-surface shovel or unit test, the nature of each soil stratum encountered should be recorded, including depth, soil color (Munsell Color) and texture. As a general rule, all hand-excavated soils, excepting samples retained for analysis related to other research objectives, but including feature fill, must be sifted through 1/4 inch hardware cloth to ensure standard recovery of artifacts. Additionally, if the Principal Investigator determines that a culturally sterile or modern fill stratum is present over intact site deposits; such intrusive soils need not be screened. The rationale for such decisions must be indicated in the survey report. Most of the method describe above are effect for sites in rural or

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22 DelDOT is sponsoring a study of remote sensing methods and their utility in different situations, which will be posted on their web site when completed. See http://www.deldot.gov/archaeology/index.shtml.
23 See http://en.wikipedia.org/wiki/Disc_harrow

suburban landscapes. If the surveyors need to investigate urban, buried or underwater sites, other methods must be employed.

Mechanical Methods

In order to access deeply buried soils, or to remove modern overburden, mechanical excavation machinery can be used, if managed appropriately. A trench can be dug with a backhoe, grade-all or similar equipment if a skilled operator is employed and the actual bucket is toothless. The trenches should be strategically placed in order to understand the development of the landform and to test the most likely area for human activity. Please note that all deep excavations should follow the current safety requirements. The excavations should be closely monitored by an archaeologist. During this process, the machine operator should pause, and the recently exposed surfaces should be examined by the investigator, who will search for artifacts, features, or other signs of human activity. Once the trench is complete, the walls should be scraped and documented with photographs and profile drawings. The trenching should dig until the investigator reaches culturally sterile soils.

As most early habitation sites may not be detectable from the profile of a mechanical trench, a degree of subsurface testing may be required. The controlled excavation of a 1 by 1 meter unit in suspect strata, supplemented by judicious shovel testing is recommended. The soils of the excavation units should be screened and documented as in normal circumstances. The testing should focus on the integrity of the soils. Buried archaeological deposits found in these contexts may be very significant due to the high integrity of the soils, assuming they have never been plowed. In contrast, if the soils are in an alluvial context, they may be redeposited sediments and artifacts, and hold little archaeological value. Of course, these are generalizations, and the DE SHPO is open to new approaches.

Testing Strategies

In many circumstance the modern overburden has buried site, the methods listed in the above section of buried sites are useful. Of course, it is a matter of judgment to distinguish between the "modern overburden" and historic fill, or occupation. Sometimes the "yard" area is the zone that produces the best information on domestic activities and living standards. In historic cities, these areas are usually located in the backlot, where the productive features and privies and wells can be found. The documentation of such feature should include measure drawings and photography.

Artifact Retention

Due to the fragile nature of archaeological remains and the inherent destruction of archaeological sites during excavation, it is the policy of the DE SHPO to maintain a comprehensive collection from each excavated site. Please do not collect the obviously modern objects such as plastic, vessel glass with a modern finish and seam line, and other objects that were deposited since 1960. It may be appropriate to collect and retain only a sample of certain artifact classes from certain contexts. For example, in towns and cities, one can be overwhelmed by the large numbers and volumes of historic artifacts. If they are not recovered from a feature, many of the contexts were open to public access

and casual discard. It would be prudent to formulate the research design to collect a sample of the artifacts encountered, and not retain large assemblages with limited analytical value.

Decisions on culling artifacts should be made by the Principal Investigator in consultation with DE SHPO and the client agency, based on the approved research design.

SPECIAL SITE TYPES

Buried Sites

In areas where aeolian, alluvial, or colluvial deposits are known or suspected to be present, the Principal Investigator must take appropriate steps for deep testing to look for buried cultural strata and to investigate site formation processes. The Investigator is encouraged to consult with a geomorphologist and/or geoarchaeologist when complex stratigraphic contexts are anticipated in the research design. When encountering deep deposits that are not practical to excavate with hand tools, the Investigator may employ mechanical methods. Before using mechanical methods, please use auger and coring tools to explore the characteristics of the suspect strata.

Urban Sites

By definition, a city is an archeological site. Archaeological investigations in the modern urban settings usually focuses on finding components of evidence e of earlier occupations buried underneath modern construction.

Battlefield and Military Sites[24]

Most archaeological survey methods focus on revealing domestic sites, but fail to locate military ones. Our settlement pattern models usually consider environmental variables that affect subsistence or economic activities. The military uses the landscape differently than other human activities. Soldiers camp in inhospitable locations. Steep hills become very important. However, these sites can be very important to our heritage as battlefield become sacred places and contain unmarked burials. Therefore, our models and techniques must adapt for these specialized sites. However, this land use can be well documented in the military records, and the investigator should rely on primary, as well as secondary sources.

A system of interpreting battlefield landscapes known as the KOCOA system has been adopted by the NPS and endorsed by the American Battlefield Protection Program for the evaluation of historic battlefield environments. It encompasses key landscape features that may have affected or directed the military action in a given location, and keeps the evaluator from focusing solely upon archaeological remains or built environment such as earthworks:

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24 Adapted from Virginia Department of Historic Resources guidance

K   **K**ey terrain (terrain that must be taken or held to obtain victory)

O   **O**bservation and fields of fire (terrain that permits observation of enemy movements and avenues of approach)

C   **C**over/concealment (terrain that provides troops with cover or protection from enemy fire)

O   **O**bstacles (features that stand in the way of seizing key terrain – these can be natural, such as heavy woods or deep swamp, or man-made such as fencelines, ditches or earthworks)

A   **A**venues of approach (terrain by which the enemy may be approached – this can be anything from an established roadway to an open field)

A thorough visual observation of the ground surface needs to be conducted to identify surface features (huts, chimney falls, latrines, etc), broad scatters and/or clusters of building materials, and evidence of relic hunting. This is especially needed for transect surveys where it is likely that only a portion of the site is contained in the project area.

Areas of steep slopes (>15%), sometimes excluded from survey, need to be examined as slopes are often favored locations for military encampments.

Landscape features are key components to military sites and can be recorded as archaeological resources.

Metal detector surveys are recommended because the majority of diagnostic items deposited at military sites are metallic. When implemented, the metal detector survey shall consider relevant factors such as the experience of the metal detector operator(s), the type of metal detector(s), ground cover, intensity of survey coverage, extent of previous relic hunting, and environmental factors.

Underwater Sites

Archaeological testing in underwater settings often involves unusual circumstances. Discuss research designs for underwater identification surveys in advance with DE SHPO staff.[25] A remote sensing protocol should involve both side scanning sonar and a magnetometer in a systematic survey. Survey coverage needs to be broad enough to include areas planned for construction vessels' anchorage. Lane spacing should be approved by the DE SHPO staff. Consider the potential for Native American sites to be present as well, which may require other approaches than diving.

In general, identification efforts in an underwater setting are to include:

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25 See http://www.boem.gov/Environmental-Stewardship/Archaeology/Gulf-of-Mexico-Archaeological-Information.aspx for more information.

1. Placement of test units based on remote sensing results and knowledge of the sunken vessel or submerged cultural remains.

2. Use of mechanized equipment where extensive modern overburden is present.

3. Careful examination of air-lifted and water-dredged soil samples. The soil samples must always be screened through mesh or net bagging.

4. Records of the investigation, including site drawings and photographs.

5. Compliance with safety standards of nationally recognized diving organizations (PADI, Instructors NAUI, SSI, etc.).

EVALUATION SURVEY
OR INTENSIVE LEVEL SURVEY *OR* PHASE II

GOALS

The goal of this level of investigation is to evaluate the eligibility of an archaeological site or property for listing in the National Register of Historic Places. Usually, archaeologists use Criterion D to evaluate a site as this criterion focuses on the potential of a site to provide important information on the prehistory or history of our region or country. However, Criterion A, B, and C are encouraged to be used as well, when they are relevant.

> *This survey level is defined as an Intensive level survey by the National Park Service and as an Evaluation level survey by the Advisory Council on Historic Preservation. In these guidelines, the terms are used interchangeably. (This is often called Phase II in the 106 process).*

This level of investigation will provide definitive information on both vertical and horizontal boundaries, site structure, integrity, and the significance of the data available. The survey report must meet the Secretary of the Interior's **Standards for Evaluation**, and, as appropriate, **for Archeological Documentation** and/or **Historical Documentation**.

ARCHAEOLOGICAL EVALUATION

Background Research

The key to evaluation is to have sufficient background research to determine which properties are significant within the appropriate historic context(s).[26] Also, this level includes detailed historic research that is sufficient to understanding the properties' place within the state's historic context framework and to identify any associations with significant people or events. This can be accomplished by the use of historic documents, such as but not limited to, deeds, wills, probate records, censuses, poll tax records or street directories.

Comparative Research

Whether the site component is Native American, African American or European American, comparative archaeological research is required. The investigator must review the archaeological literature of this region and find comparative examples. The Division strongly encourages researchers to use its archaeological collections for comparative research and analysis. Over the past several decades, the DE SHPO has invested in the development of historic contexts to aid the evaluation of sites. These documents provide comparative background information and criteria for evaluation. More work is needed if none exists, to develop appropriate scales to measure the

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26 See <u>Historic Context Guidance For Evaluation Survey</u>, on <u>http://history.delaware.gov/preservation/surveys.shtml</u>.

importance of archaeological properties.

Excavations

The goal of test excavations should be to define and sample cultural features and to assess the integrity of the site. The information will be used to make management decisions. If the site is significant and eligible for National Register of Historic Places, then we need to delineate the limits of the archaeological deposits in order define the effects of the undertaking and develop mitigation alternatives. In other words, we need to find the exact limits and the nature of a site for excavation planning or to implement conservation options.

Large open excavations are not encouraged at intensive/evaluation levels of work as these methods are usually more appropriate for (Phase III) data recovery efforts. However, the nature of the deposits may warrant the use of a limited number of excavated trenches or blocks during testing. Test units that measure 1x1 meter, or 3'x3' square are very successful at this level, as they are just large enough for one person to dig and observe the soils strata. As mentioned previously, in every test unit, the nature of each soil stratum encountered should be recorded, including depth, soil color (Munsell Color) and texture. As a general rule, all hand-excavated soils, excepting samples retained for analysis related to other research objectives, but including feature fill, must be sifted through 1/4 inch hardware cloth to ensure standard recovery of artifacts. Additionally, if the Principal Investigator determines that a culturally sterile or modern fill stratum is present over intact site deposits; such intrusive soils need not be screened. The rationale for such decisions must be indicated in the survey report.

Feature Testing

Overall, the DE SHPO encourages a sampling approach to the examination of features at the evaluation level of investigation. When a potential feature is encountered in a test unit, the unit could be widened to define the nature of the anomaly. Depending on research design, testing of the feature (generally, quarter or half sections) to establish morphology, stratigraphy, cultural affiliation, and potential function may be appropriate, as well as recovery of ecological samples. Some features (particularly small features, such as post holes) may involve full excavation. The Principal Investigator should take into account the level of investigation, the research design, the likelihood that the site will be revisited for further study, the nature of the feature(s) encountered, and immediate threats to the site.

Mechanical Trenching

Controlled trenching with heavy machinery may be appropriate at any level of survey. Mechanical stripping of large areas can be done to uncover features after adequate testing of the plow zone or other overburden is done to determine integrity of the soil layers along with artifact distributions or other kinds of distributional information. The removal of plow zone or overburden should be done carefully to meet, but not intrude into the interface with the strata beneath. Then, the stripped area will be scraped with a shovel, hoe or a trowel to reveal possible features. In urban areas or areas with complex stratigraphy and disturbances, mechanically dug trenches can be used in initial testing, but care should be taken that the trenches are deepened incrementally, so that important strata and

features, such as barrel-lined privies, are not heavily damaged before their presence is recorded. When testing in this manner, a sample of artifacts should be recovered from each artifact-bearing strata or feature.

Ecological Samples

Most archaeological surveys include some level of ecological sampling. Analyses requiring ecological samples may include pedology, soil chemistry, pollens, carbon-14 and wood identification, flotation, and phytoliths. The purpose of acquiring and obtaining ecological samples is to determine the nature of data present at the site and what research questions the site may help answer. For example, if a stated objective of the research is to determine if the site can address paleo-environmental reconstruction, an attempt should be made to recover pollen, charcoal, and other organic samples. Similarly, if a site appears to represent a historic occupation in which traditional feature and artifact data do not illustrate expected activity areas, soil chemical samples should be collected and analyzed to determine if chemical variation is present on the site, and could therefore address this concern. The Principal Investigator should ensure that these expectations are reflected in the research design, and use appropriate methods to recover the needed samples.

The DE SHPO encourages researchers to carefully consider the goals of the investigation (survey or treatment), eventual disposition of the collection, and the financial resources available when determining what types and quantity of samples to collect, if any. Note that the DHCA curates light and heavy fractions derived from soil flotation, and samples reserved for radiocarbon analysis, but **will not** accept unprocessed soil samples.

Determination of Eligibility

The investigator needs to consider the eligibility of the site under each of the National Register criteria. The most common perspective for evaluating an archaeological site is Criterion D:

> ### National Register Criteria for Evaluation[27]
>
> *The quality of significance in American history, architecture, archeology, engineering, and culture 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 history or prehistory.*

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27 See National Register Bulletin 15, http://www.cr.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm.

With this criterion, the investigator must first establish integrity, and then prove that an archaeological investigation through excavations will provide important information to prehistory or history of the region or nation. As this is a scholarly activity, the investigator must present a research design that is grounded in current research. The "Undisturbed Dirt" hypothesis or finding an intact archaeological deposit that is over 50 years of age is not enough to merit the expense of public funds. The proposed archaeological investigations should produce meaningful information to the current body of academic research in order to use criterion D.

Treatment Options

If a resource is determined eligible and the undertaking could adversely affect it, recommendations should be made in the survey report for treatment options, including avoidance, protection, data recovery, or other actions. This is based on what is known of the project's effects and the nature of the site's significance. If the effects are still unknown, these recommendations should be general in nature. As an overall policy, preservation in place is always the preferred treatment.

TREATMENT or MITIGATION

DATA RECOVERY EXCAVATION

This level of fieldwork in the federal program is not part of survey but a **treatment**[28] option. The nature and extent of treatment is typically negotiated between the client agency, the federal agency, and the DE SHPO, documented by a memorandum of agreement. When data recovery is specified, it involves the detailed excavation and analysis of a National Register-listed or eligible site, based on a research design developed as a result of the intensive/evaluation level survey. Ideally, complete excavation of the affected site area is carried out. However, for large, complex sites, a statistical sample may be excavated, providing the research design clearly defines the sampling and explains how it meets the research goals. Historical documentation for this level of work should be as complete as possible, and include analysis of secondary and primary sources that provide both comparative and direct evidence concerning the site's occupation and use.

This research design must be approved by the DE SHPO **before work proceeds**. The report must meet the Secretary of the Interior's **Standards for Archeological Documentation** and, if appropriate, **for Historical Documentation**. However, once the excavation and sampling as required by the research design has been carried out, with a final site review by the DE SHPO staff, the project construction can proceed prior to the laboratory analysis and report writing.

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28 Treatment options may include other alternatives besides data recovery excavation. See
http://www.achp.gov/archguide/ for further information.

LABWORK and CURATION

The Principal Investigator must coordinate with the client agency and DE SHPO to identify the appropriate repository for the collection, and see that the artifacts and other materials are processed in accordance with that repository's standards. In the great majority of cases, the repository for archaeological projects in Delaware is the Division's Archaeological Collections. *Curation Guidelines and Standards for Archaeological Collections* (2001)[29] is a complete discussion of processing, curation, and housing requirements. Collections that will be curated in the state system must conform to these guidelines and standards, and must have the required documentation of ownership.

During field work, artifacts and ecological samples should be placed in field bags, or other appropriate containers, marked with provenience and other pertinent information. Contact the DHCA's Curator of Archaeology to acquire a **provenience/catalogue number** for the defined site(s) within the project/study area immediately after the DE SHPO has assigned an archaeological site number. In order to maintain specific proveniences within a site during analysis, **do not wait until later in the course of a project to get a provenience/catalog number for a site(s)**.

In the laboratory, this material should be appropriately processed, including artifact labeling and cataloging. Discard of certain artifact classes, for example, coal and coal slag, brick fragments without original dimensions, and shell, may be done, after weights are recorded. Identify any materials that are in need of conservation. Consult with the client agency and the DE SHPO to determine how these materials should be stabilized. After processing and analysis, artifacts and other site materials should be appropriately packaged for submission to an approved repository. A complete inventory of all artifacts found and samples taken must be made and provided with the artifacts and samples when placed in a repository. **All original field notes, drawings, photographs, maps, laboratory records, specialized studies, and other relevant material, including a copy of the report, must be curated with the artifacts.** (Do not include project fiscal or administrative material.) If a computer catalog system is used, a coding manual and/or procedures manual must be included with the artifact inventory, and a copy of the inventory must be provided on disk in PDF format.

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[29] See http://history.delaware.gov/preservation/surveys.shtml for link to guidance.

REPORT GUIDELINES

This outline is a guide to the kinds of information that a survey report needs to contain to meet the Secretary of Interior's Standards and Guidelines. This should not be viewed as a rigid format. The author can, for instance, vary the order and placement of information or include tables or indices summarizing information, as long as the report content is sufficient to support the conclusions in the summary. These guidelines also inform the Principal Investigator of other technical requirements, including report copies, survey documentation, and artifact curation.

All work done for federally permitted or funded activities must meet the applicable **Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation**.[30] Work done for other purposes is encouraged to meet these standards, as they represent best practices for these kinds of projects. The DE SHPO staff review all products using these criteria and may reject reports that do not meet them.

Please send a copy of the draft report with survey forms for review by the DE SHPO, accompanied by a cover letter containing the name and contact information of the person submitting the report. Include contact information for the federal agency or its designee sponsoring the survey (if relevant).. The table in the **Survey Documentation** section below summarizes the submission requirements. The CRS and archaeological site numbers must be included in the final report. Note that the DE SHPO and/or the client agency will redact the location information from final reports before publishing them for the protection of the archaeological resources.

If no archeological sites were found, consider using the Archaeological Survey Report Form.[31]

REPORT CONTENT

Title Page
1. Level and nature of survey, along with its location.
2. Author.
3. Contractor(s) groups.
4. Contracting agency.
5. Date of report (month and year).

Abstract (should not exceed one page)
1. Dates of the survey
2. Location of the survey
3. Purpose for the survey
4. Summary of survey results, including
   a. number of properties newly identified
   b. number of properties for which survey information was updated
   c. number of acres and/or hectares surveyed

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30 See http://www.nps.gov/history/local-law/arch_stnds_0.htm.
31 See http://history.delaware.gov/preservation/archsurvey_report.doc.

5. Repository location of forms, photographs, maps, field notes, and artifacts (may be more than one, but must include the Division)

Table of Contents

List of Illustrations (Integrate illustrations, maps, and images within the text at appropriate points and **not** in an appendix.)

Introduction
1. Project description, including sponsoring agency and/or funding source.
2. Level of and reason for survey or treatment work, and goals for the investigation. Please include compliance requirements with citations of law, if applicable.
3. Project location and survey area size in acres and/or hectares, including description of current land use. Include a map showing the general location within the state and a detailed map of the project area with project limits adequately (map & text) located and defined. (The total acreage can be estimated by multiplying the length of the survey area in feet by the width of the survey area and dividing by the number of feet in an acre, with 1 acre equal to 43,560 square feet).
4. Dates of fieldwork.
5. Principal Investigator(s) name and area of qualification(s) under the Secretary of the Interior's Professional Qualification Standards

Background Research
1. **Physical geography and environment of project area**, including changes and development up to the present. Stress those features that affected placement of sites and development of the cultural landscape (topographic relief, water sources, soil types, etc.) over time.
2. **Regional and local social, economic, and cultural history**, based on existing historic contexts, management plans, and other secondary sources, sufficient to provide a context(s) within which significance can be evaluated. This should include a **summary of prior surveys or research in immediate area** and/or time period. In an historic context, identify area covered, time periods covered, and historic or cultural theme(s) considered. These must be linked to the state's context framework. This context must be sufficiently in depth to identify the property types that can be expected within the survey area. Lists of property types can be found in the management plans for both pre-contact and historic period resources. A bibliography of plans and fully developed contexts can be found at http://history.delaware.gov/pdfs/Context_Bibliography.pdf

Research Design
1. **Research objectives**, including relationship to management plans' research questions, goals, and priorities. Include historical documentary objectives, where appropriate. Also include a discussion of known biases or gaps in the historical records that could affect the outcome of the research. For identification surveys, include site predictive model or comparative trends in site location. For an evaluation, present the theoretical orientation and testable hypotheses. Research objectives should be appropriate to the level of survey and the expected resources.
2. **Methods**, including specific field and analytical techniques and historical documentary methods employed to achieve the project's goals and to meet research objectives. Explain how the methods are appropriate to the level of work proposed and the expected resources.

Please note any classes of artifacts to be discarded in the field or in the lab.
3. **Expected results**, including expected property types and their projected number, as well as density, location, character, and condition, based on the identified historic context(s). For an evaluation investigation, include type-specific eligibility criteria for **each** expected property type covering both significance and integrity and note how these are related to the National Register criteria. If testing a hypothesis or predictive model is among the research objectives, include a discussion of the expected or possible answers and what kinds of information will be sought to provide those answers.

Descriptions of Work
1. **Areas with no archaeological sites**
   a. **Description and map** indicating vacant areas where resources are absent and/or areas are now completely developed or disturbed by modern construction.
   b. Indicate limits of undisturbed sterile areas and of disturbed areas, extent and type of testing, and location of isolated finds, if any.
2. **Resources description**
   a. **Primary documentary research** about each resource, including historic maps, deeds, census information, wills and inventories, and so forth (where appropriate and available). In an intensive/evaluation level survey, this must be sufficient to identify any significant associations with events or people and to delineate a property's place within the appropriate historic context(s).
   b. **Site structure**. Give limits of testing and excavation, and describe stratigraphy and/or features discovered, including drawings and/or photographs with scale (metric or English) and directional arrow. Drawings must include at least one plan map showing relationship of features and location of test units with site boundaries (see below). (Include DE SHPO survey forms in a separate appendix, not published with the report.) Identify state's planning context(s) and property type(s).
   c. **Boundary of each located property**, including description and map, indicating the limits of the resource with respect to overall project limits. For an identification report, indicate boundaries as far as they are known. Precise boundaries are essential for an evaluation report. Discuss the relationship with setting. Note areas where resource may extend beyond project or testing limits, and areas where resource was disturbed.
   d. A**rtifact descriptions** and analyses (a complete inventory should be in appendix), including drawings and/or photographs, with scale (metric or English), of significant artifacts. **Include the location where the collection is archived.** If it is still in your temporary possession, state this in the report, and note where it is intended to be curated.

Interpretations and Conclusions
1. Discuss **results and interpretations** of work in relation to research objectives, for both historical documentation and fieldwork and laboratory analysis. How does the site(s) or predictive model compare with others of its type in the area or region?
2. **Discuss the usefulness of the overall research design in meeting the survey goals** and any inadequacies of the methods used in answering research questions or meeting research objectives. Do the results lead to confirmation, revisions, or rejection of the predictive model or hypotheses? Please note where reliability of results was compromised due to survey or

contracting constraints. For historical documentation, include discussion of accuracy and biases of sources actually used (may be in an annotated bibliography).

Recommendations

1. For identification level surveys, note **which properties or areas need further work to assess National Register eligibility.** When any properties or areas have clearly lost integrity, include a recommendation that these properties are not eligible for the National Register, describing how they have lost integrity.

2. For an evaluation level survey, assess **National Register eligibility** and identify area(s) of significance for each property located. Discuss in detail the reasons each property meets or fails to meet the criteria of integrity and/or significance by measuring each property against the criteria developed for that property type in the research design. (This can be addressed in the property description section, especially when dealing with a large number of resources; see above.)

   a. For properties eligible under **National Register Criterion D**, note the major research questions that should be addressed in any future work. Although archaeological sites are typically eligible under Criterion D, they may also be eligible under any of the other criteria. For example, they may be associated with a significant person or event, or be the work of a master. (See Description of Work, 2f, above.)

   b. If more than four or five properties were considered within the survey area, include in the summary table the primary recommended treatment(s).

3. **A table should summarize the results** when multiple properties are identified and/or evaluated in the survey area. Include information such as (but not limited to):

CRS # and Site #	Property Name(s)	Address or Location (include survey segment if applicable)	Site Type	Period	Eligible for National Register? (Why or why not?)	Criteria Met	Management Recommendations

4. If known, **describe how the project may directly or indirectly affect the site(s)** and any steps that could be taken to avoid such effects.

5. **Suggest areas for further work, treatment options, and/or future research questions**. Treatment options, including avoidance, protection, data recovery, or other actions, must be based on what is known of the project's effects and the nature of the site's significance. If suggestions include further archaeological testing and/or excavation, they must focus on the recovery of data relevant to the areas of significance for the site.

6. Discuss whether or not the results of the survey suggest a need for **changes to historic contexts** and management goals and priorities, including new or revised information needs or areas of research.

7. Note **location(s) of survey forms, field notes**, field maps, field drawings, photographs, artifacts, forms, transcriptions of documents, tapes of oral histories, and any other primary documentation of work (may be in a footnote or an appendix). If final disposition of this material has not yet been made, note where it is currently located and where it will be deposited in the future (as far as is known).

Bibliography

1. Include both secondary and primary sources; include all sources consulted, even if not cited in

the text of the report.
2. Use <u>American Antiquity</u> format for listings in the bibliography.

Appendices and Attachments
1. CRS Forms: include copies of all survey forms. All properties newly identified by a survey or requiring updated information are documented on the appropriate DE SHPO survey forms.[32] Data coordination to DE SHPO standards is the responsibility of the Principal Investigator. To protect resources, forms should **not be included in published archaeological reports**.
   a. Submit digital forms to the DE SHPO through CHRIS[33] in PDF format. Separate printed forms are not required.
2. Map including (as appropriate) location of all identified sites, showing boundaries of all sites evaluated as eligible and centroid location for sites evaluated as not eligible, as oversize printed map(s) (folded in pocket). This map giving the precise location of archaeological sites should **not be included in the published report**, but be supplied for agency and DE SHPO use.
3. A detailed inventory of artifacts with proveniences.
4. Specialized analyses (faunal, C14, etc.).

SURVEY DOCUMENTATION

Report Copies
Documentation copy requirements:

Document type	DE SHPO	Delaware State Archaeological Collections
draft report	1 paper copy	none
draft site forms	CHRIS submission, pdf forms	none
final report	1 bound copy, 1 CD or DVD with pdf of full report in single file	2 bound copies, 1 CD or DVD with pdf of full report in single file
final site forms	CHRIS submission of pdf file for each CRS/Site number; if photographs (architectural; ruins), include CD or DVD with **uncompressed** tiff files as well	1 paper copy

Artifact and Records Curation (for archaeological projects)
1. For archaeological surveys, all original field notes, drawings, negatives, photographs, artifact inventories, laboratory records, specialized studies, and any other related documents must be deposited with the artifacts at the DHCA Archaeological Collections repository or other federal- or state-approved repository.
2. Basic artifact processing, including cleaning, labeling, inventorying by provenience, and boxed storage is the responsibility of the principal investigator and the client agency. If the

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32 See http://history.delaware.gov/preservation/surveys.shtml.
33 See https://chris-users.delaware.gov

collection is to be curated at the DHCA Archaeological Collections repository, boxes and labeling must conform to DHCA standards.[34]

3. Once a project is completed, the artifacts and the associated records can, at the option of the contracting agency, be deposited with the State's archaeological repository, the DHCA Archaeological Collections. If, however, the artifacts have not been curated by their standards, the Division may elect to refuse them. Projects sponsored by the University of Delaware will generally use its repository and must meet its curation standards.

4. It is the agency's responsibility to obtain curation or donation agreements with the owners of artifacts recovered under federal law from privately owned lands.[35] Such agreements should also be obtained for surveys conducted for other reasons to clarify questions of legal ownership. This should be done in consultation with the DHCA Curator of Archaeology or other approved repository's curator. Submit copies of the agreements to the DHCA Curator of Archaeology prior to submitting the collection.

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34 See http://history.delaware.gov/preservation/surveys.shtml.
35 See Federal Curation Standards, http://www.nps.gov/archeology/tools/36CFR79.HTM

GLOSSARY

Artifacts
man-made objects, such as glass and ceramic vessels or stone tools, found on archaeological sites, and providing information on the function and time period of the site.

Building
A construction created principally to shelter any form of human activity.

Chronological Period
the era for when the property is significant. Defined periods can be found in various management plans and historic contexts. (See Appendix I.)

Complex
In an archaeological survey, a defined cultural sub-unit of a larger time period, characterized by a specific group of artifact types.

Comprehensive Survey
the recordation of all resources within a project area.

Condition
the physical state of a resource, including its level of repair and functionality. **Not equivalent to integrity.**

Criteria - Evaluation from Context
the specific standards of integrity and significance for a property type, against which a particular property is measured to determine eligibility.

Criteria - National Register
the general standards of age, integrity, and significance defined by the National Park Service for the National Register of Historic Places program.[36]

Cultural Resource
a historic building, site, structure, object, or district. Used interchangeably with property.

Curation
the maintenance of an archaeological collection and its accompanying documentation.

Data Coordination
the systematic assigning of CRS numbers, mapping, and cross-referencing of survey documentation for filing and retrieval purposes.

District
A significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or

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36 See National Register Bulletin 15, http://www.nps.gov/history/nr/publications/bulletins/nrb15/

aesthetically by plan or physical development

Documentary Research Design	the defining of the objectives, methods, and expected results of a survey's historical background research.
Eligibility	the capability of a specific resource to meet the National Register criteria and become eligible for inclusion to the National Register of Historic Places.
Environment	the physical surroundings of a property.
Evaluation	the assessment of a property's eligibility for listing in the National Register.
Features	the physical remains of human activity, generally not removable from the site, such as a building or its foundation walls, trash pits, storage pits, post holes, fire hearths, and so on. The archaeological study of these reveals information about how people lived in the past.
Field Work	the systematic retrieval of information about historic properties from the properties themselves, by documenting the resources on forms and in photographs, thus recording architectural elements and surroundings or recording archaeological testing and excavation.
Function	the use of the historic resource. Historic function is the use for which it was built; current function is its present use.
Geographic Zone	the bounded geographical areas defined in the state's management plan, determined by a common development pattern or use within each area in the past. (See Appendix I.)
Historic Context	a document providing information on the historical background of related types of resources, setting criteria for evaluation of significance and physical integrity. Comprises three main defining elements: geographical area, chronological period, and historic theme. ((See Appendix I.; see also Bibliography of Developed Historic Contexts.[37])
Historic Theme	the broad categories of history, which provide the organizing scheme to explain the historical background of the resource. Broad topics are defined by various management plans and contexts, but sub-themes can be as narrow as needed for the purposes of survey. (See Appendix I.)

History	refers to any event of the past, without consideration if it occurred before or after European contact.
Integrity	the degree to which a historic property retains those physical characteristics that identify it as a particular property type significant to a historic context.
Intensive/Evaluation Survey	level of survey that assesses resources for eligibility for the National Register.
Management Plan	a written plan that documents the historic contexts and type of resources existing in a specific area and how that area will be developed or preserved to manage those resources for the future.
National Register	the official federal list of buildings, sites, structures, objects, and districts significant in American history, architecture, archaeology, engineering, and culture; maintained by the Keeper of the National Register at the National Park Service in Washington, D.C.[38]
Object	Constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.
Physical Geography	the broad physical characteristics of the land, including topography (degree of flatness, steepness of slope, or rolling quality of the land surface), water systems, ground cover (forest, cultivated fields, etc.), and degree of development (road systems, buildings, and so on).
Pre-contact	pertains to any group and their artifacts that resided in the area prior to European contact.
Principal Investigator	the individual in charge of the overall project. This person must meet the Secretary of the Interior's Professional Qualification Standards[39] for the particular kind of project being carried out.
Property	a historic building, site, structure, object, or district with its associated setting, which may include subsidiary buildings, site components, structures, or other landscape features. Used interchangeably with resource.

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38 See http://www.nps.gov/history/nr/index.htm.
39 See http://www.nps.gov/history/local-law/arch_stnds_9.htm

Property Type	a grouping of individual properties (buildings, sites, objects, structures, or landscapes) based on shared physical or associative characteristics.
Reconnaissance/Identification/ Location Survey	level of survey where cultural resources are located and recorded, but not evaluated for eligibility for the National Register.
Repository	a facility that provides a secure, climate-controlled environment for the storage of archaeological collections, including artifacts, photographs, slides, field drawings, and other documentation. (See the Federal Curation Standards[40] for an outline of the requirements for a federally approved repository.)
Research Design	a written plan for conducting research, including objectives, methods, and expected results of the survey. Written before beginning any field work.
Sampling Design	a research method, involving statistical sampling of a project area rather than a comprehensive survey or site excavation; must be fully described and justified in the research design.
Section 106	a section of the National Historic Preservation Act of 1966, as amended,[41] which requires that all federal agencies take into account the effect of their undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places.
Significance	the historical importance or research value of a property, as measured against the four National Register criteria.[42]
Site	The location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value regardless of the value of any existing structure.
Site Predictive Model	A model of past land use and development used to predict archaeological site locations. Generally, we request the most intensive testing is done in the highest probability areas.
Stratigraphy	the sequence of soil layers or strata observed in an archaeological site. These are usually distinguished by color,

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40 See http://www.nps.gov/archeology/tools/36CFR79.HTM
41 See http://www.achp.gov/nhpa.html.
42 See http://www.nps.gov/history/nr/publications/bulletins/nrb15/nrb15_2.htm.

texture, and inclusions of the soil.

Structure   Functional constructions made usually for purposes other than creating human shelter.

Survey Documentation   the full range of information collected from a survey, including forms, images, photographs, negatives, maps, reports, and any background historical data collected but not necessarily used in the report. The report must note where this information is stored.

Traditional Cultural Property[43]   building, site, structure, object, or district eligible due to an association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.

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43 See National Register Bulletin 38, http://www.nps.gov/nr/publications/bulletins/nrb38/.

APPENDIX I: Defined Historic Contexts in Delaware

A defined historic context has three parts: a geographic area, a time period, and a cultural theme. Delaware has a framework of contexts, defined on a very general level. This framework provides a reference for relating specific contexts and historic properties to each other. The following maps provide the general geographic areas for prehistoric and historic time periods.

Time Period Name
Pre-European Contact[44]
Paleo-Indian
Archaic
Woodland I
Woodland II
Contact Period,[45] 1600-1750 AD +/-[46]
Exploration and Frontier Settlement, 1630-1730 +/-
Intensified and Durable Occupation, 1730-1770 +/-
Early Industrialization, 1770-1830 +/-
Industrialization and Early Urbanization, 1830-1880 +/-
Urbanization and Early Suburbanization, 1880-1940 +/-
Suburbanization and Early Ex-urbanization, 1940-1960 +/-

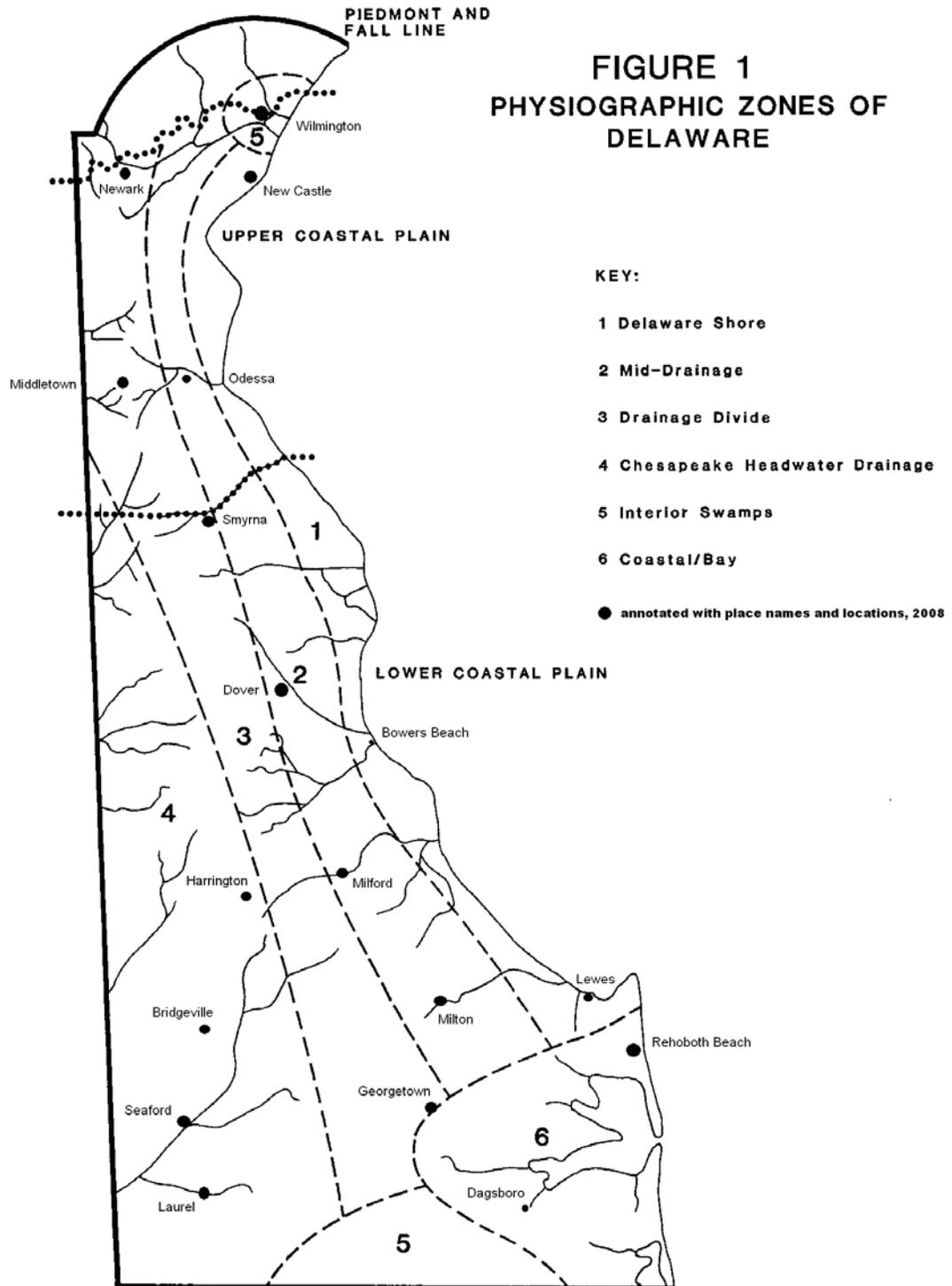| Historic Period Theme |
| --- |
| Agriculture |
| Forestry |
| Trapping/Hunting |
| Mining/Quarrying |
| Fishing/Oystering |
| Manufacturing |
| Retailing/Wholesaling |
| Finance |
| Professional Services |
| Transportation and Communication |
| Settlement Patterns and Demographic Changes |
| Architecture, Engineering and Decorative Arts |
| Government |
| Religion |
| Education |
| Community Organizations |
| Occupational Organizations |
| Major Families, Individuals and Events |
| Recreation and Culture |

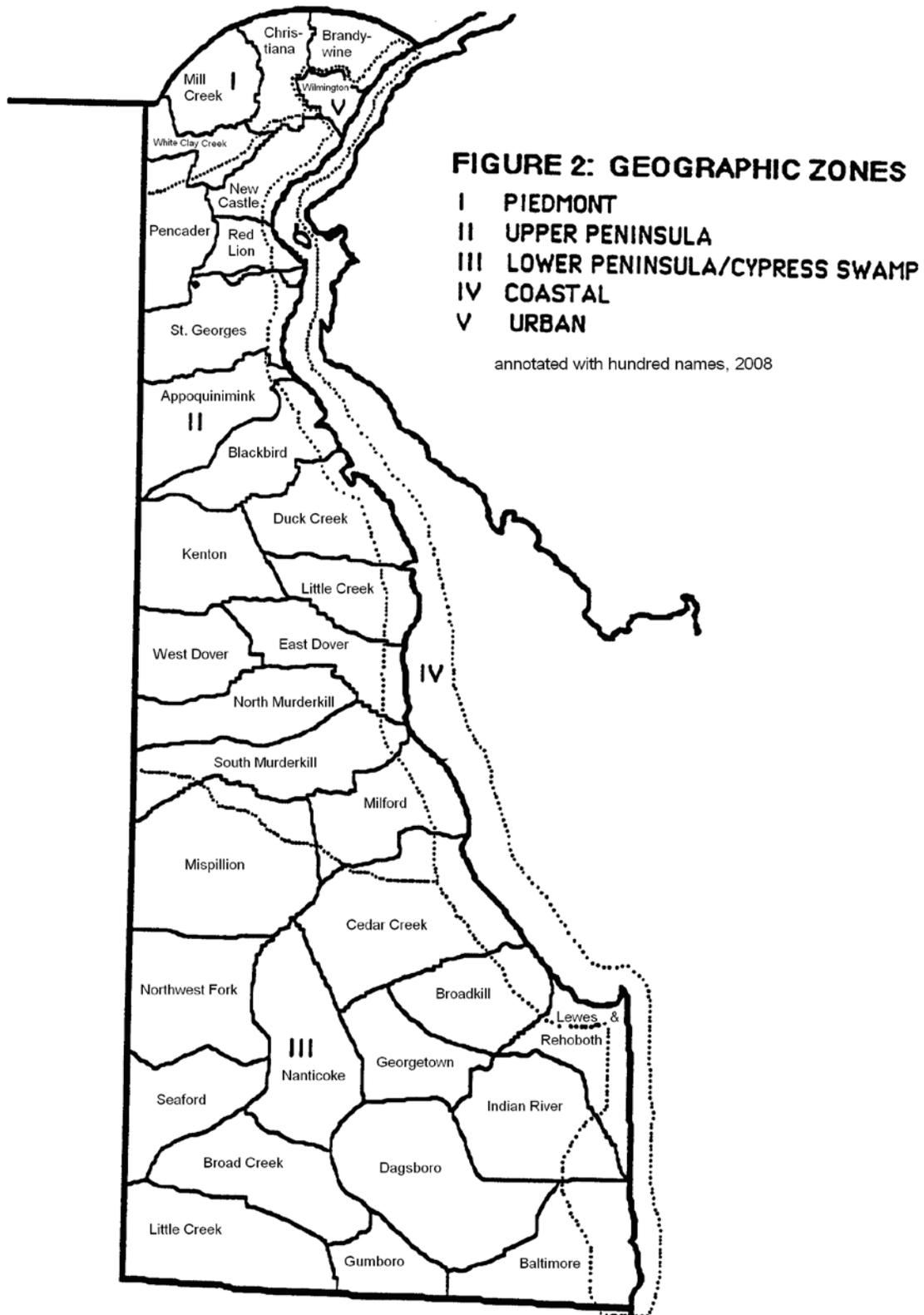44 for prehistoric sites without diagnostic artifacts

45 Note that this period designation applies to Native Americans still living in traditional ways. See Custer, Jay F. Management Plan for Delaware's Prehistoric Cultural Resources. 1986.

46 +/- indicates that date ranges are approximate and may be different depending on geographic region

Physiographic Zones: from Custer, Jay F., *A Management Plan for Delaware's Prehistoric Cultural Resources.* 1986. Monograph No. 2. University of Delaware Center for Archaeological Research, Newark, DE.

FIGURE 1
PHYSIOGRAPHIC ZONES OF DELAWARE

KEY:

1 Delaware Shore

2 Mid-Drainage

3 Drainage Divide

4 Chesapeake Headwater Drainage

5 Interior Swamps

6 Coastal/Bay

● annotated with place names and locations, 2008

Geographic Zones: from Ames, David L., et al., *Delaware Comprehensive Historic Preservation Plan*. 1989. University of Delaware Center for Historic Architecture & Engineering, Newark, DE.[47]

FIGURE 2: GEOGRAPHIC ZONES

I   PIEDMONT
II UPPER PENINSULA
III LOWER PENINSULA/CYPRESS SWAMP
IV COASTAL
V   URBAN

annotated with hundred names, 2008

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47 See http://dspace.udel.edu:8080/dspace/handle/19716/1523.