

CHAPTER 6

CONDUCTING ARCHAEOLOGICAL INVESTIGATIONS

Introduction

The Secretary of the Interior has developed broad national performance standards and guidelines to assist federal agencies in carrying out their historic preservation activities, entitled *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines*, herein called the *SOI Standards*. The guidance on archaeological investigations presented herein is intended to supplement the *SOI Standards*. Professionals working in Virginia have long recognized the need to standardize archaeological field investigations conducted in the Commonwealth. *DHR Guidelines* was established to meet this need, and to fill the gap between the broad-based federal guidelines and the various previously published field manuals. The following guidelines are intended to provide standards and offer general guidance without hindering the development and use of new and innovative approaches.

The intent of the following guidance is to clarify expectations for archaeologists, their clients and the public, and others involved in archaeological investigations. The guidelines describe widely accepted archaeological practices used in the mid-Atlantic region. The guidelines also encourage the selection of methods and techniques generally found to be the most efficient and cost-effective.

It is expected that these guidelines will enable project sponsors to better understand and assess proposals for archaeological survey. Users of the guidelines are to contact the Department of Historic Resources (DHR) with questions about particular projects. It is anticipated that the guidelines will be updated at regular intervals to incorporate unanticipated considerations and new approaches.

Definition of an Archaeological Site

In general terms, an archaeological site is defined as the physical remains of any area of human activity greater than fifty years of age for which a boundary can be established. Examples of such resources include the following: domestic/habitation sites, industrial sites, earthworks, mounds, quarries, canals, roads, shipwrecks, etc. Under the general definition, a broad range of site types would qualify as archaeological sites without the identification of any artifacts. To establish a boundary for archaeological sites manifested exclusively by artifacts, the recovery of a minimum of three items is needed, related either temporally or functionally and located within a spatially restricted area (a 300 square foot area is suggested). This definition does not apply to cultural material that has been recently redeposited or reflects casual discard. However, single artifacts that represent one episode of behavior may receive a site designation if the researcher can justify the discard event to be culturally meaningful and/or associated with specific landscape features. Other items to consider in deciding whether or not an area warrants a site designation include survey conditions, survey methods and site types. Additional guidance on underwater site definition may be found in *An Assessment of Virginia's Underwater Cultural Resources*, available from DHR. Any occurrence that does not qualify for a site designation shall be termed a location.

Estimates of site boundaries may be based on the spatial distribution of artifacts and/or cultural features and their relationship to other features of the natural environment (landform, drainage) and

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cultural environment (historic landscape features). In addition, historic background information is to be taken into consideration when defining the boundaries of a historic site. It is recognized that the boundaries for resources located in urban or underwater environments may be difficult to estimate at the Phase I level. For all archaeological sites identified, a DHR Archaeological Site Inventory Form must be completed and submitted to DHR for review and approval via the Data Sharing System (DSS). It is also required that DSS site forms for previously recorded sites be updated with newly acquired information.¹

Levels of Investigation

There are three levels of documentation for historic resources. The first two levels constitute components of what is defined in the federal standards as an "intensive" survey. It is important to note that this is different from a "reconnaissance" survey. Although defined in the federal standards, a reconnaissance level survey is not appropriate for projects submitted for review pursuant to Section 106 unless otherwise agreed upon by DHR and the project sponsor.

For practical purposes DHR has divided an intensive archaeological survey into two levels: identification (Phase I) and evaluation (Phase II). The third level (Phase III) constitutes treatment for significant resources. DHR normally does not recognize additional division into sub-phases (for example, Phase Ia and Phase Ib). All levels of investigation are to be conducted in accordance with Occupational Health and Safety Administration (OSHA) safety guidelines.²

Each phase is defined briefly below:

- **Identification (Phase I)**

Identification involves compiling all relevant background information, along with comprehensive recordation of all sites, buildings, structures, objects and potential districts within the survey area. This information is used in planning and making decisions about historic resource management needs. The goals of a Phase I archaeological investigation are:

- To locate and identify all archaeological sites in the survey area;
- To estimate site size and boundaries and to provide an explanation as to how the estimate was made; and
- To assess the need for further (Phase II) investigation.

- **Evaluation (Phase II)**

Evaluation of a resource's significance entails assessing the characteristics of a property against a defined historic context and the criteria of Virginia Landmarks Register (VLR) and National Register of Historic Places (NRHP). The evaluation shall result in a definition of those resources which are eligible or ineligible for VLR and NRHP listing. The purpose of a site evaluation is:

- To accurately define site boundaries and assess the horizontal and vertical integrity;

¹ For a DSS registration form, please contact the DHR DSS Accounts Manager at 804-367-2323.

² Please see the OSHA web site at <http://www.osha.gov/index.html> for further information.

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- To determine whether the site is eligible for the NRHP and under what criterion; and
- To provide recommendations for future treatment of the site.

These goals can best be met when research strategies focus on determining site chronology, site function, intrasite structure and integrity. The level of effort and the methods employed will vary depending upon site size, site type and the environmental setting.

It is important to note that resource evaluations must apply to the resource as a whole, not just to the portion of the resource within the project area. Sites evaluated as part of a federal or state agency undertaking shall be evaluated in their entirety, not just within the immediate project boundaries. However, testing strategies for Phase II evaluation studies may focus primarily on that portion of the resource that will be directly affected by the proposed project.

- **Treatment (Phase III)**

Once the significance of a historic property has been established through consultation with DHR, the appropriate treatment for the resource must be developed. Only after evaluations are completed are treatment plans or documents developed. Treatment can include a variety of measures such as avoidance, recordation, data recovery, development of a historic preservation plan, rehabilitation, or restoration. Documentation requirements for treatment are determined on a case-by-case basis.

Research Design

Regardless of level, all archaeological investigations shall be guided by prepared research designs that refer to regional preservation plans and embody a wide range of theoretical and methodological approaches. Research designs shall not predetermine what one will find in the field but must be flexible in response to changing project needs and discoveries in the field. Consultation with DHR on appropriate research designs is to be carried out before beginning any project.

Identification (Phase I)

- **Phase I Background Research**

Background research provides information regarding historic contexts and anticipated locations, frequency, and types of sites in the survey area. Background research will identify:

- Previous archeological research in the area;
- The degree of existing disturbance;
- High and low probability areas; and
- The location of historic map-projected sites.

The purpose of background research is not to produce a general prehistoric chronology, an exhaustive general history of the county, or an exhaustive synthesis of deed records or cartographic resources. A general historic context is to be developed to the level needed to aid in site-specific recommendations. Typically, background research will be conducted before

field investigations are initiated. The level of background research must be appropriate to the scale of the project.

Sources of potentially valuable information are numerous and varied, including published and written texts, oral accounts, official documents, family records, artifact collections, and observations about folkways. In addition to more traditional sources of information such as state and university repositories, specialists and locally knowledgeable persons are to be consulted along with local governments, historical societies, museums, libraries, and other repositories. Previous historic resources studies, existing archaeological collections, and other such data are particularly valuable sources of information and are to be checked, and references made to these sources.

- **Conventional Survey**

At a minimum, the following sources shall be considered:

- DHR Archaeological Site Inventory - This contains information about site type, temporal affiliation, location and settlement pattern data and other site characteristics of previously recorded sites in the survey area and vicinity.
- DHR library of historic resource reports - These reports contain information similar to the archaeological site files but with additional data on historic contexts, regional chronologies, and settlement and subsistence patterns.
- Residents or informants with knowledge of local resources - Such people may have information on previously unrecorded sites in the area or can offer an oral history for historic sites.
- DHR Architectural Inventory - This contains information on types of historic sites and structures, temporal affiliation, and location and settlement pattern data for structures that may no longer be extant.
- Archival map research - Holdings at the Virginia State Library and Archives are indexed according to county. Other sources include the Gilmer maps, and United State Geological Survey (USGS) quadrangles over 50 years old. The *Official Military Atlas of the Civil War* as well as the maps prepared between 1991 and 1994 by the Civil War Sites Advisory Commission shall also be considered.
- Local and county historical societies and published local and county histories. These often contain site specific information. The Library of Virginia maintains an electronic directory of local historical societies: <http://www.lva.lib.va.us/whowere/directories/vhs/index.htm>.
- United States Department of Agriculture (USDA) Soil Survey reports for the county, or counties, within which the project area lies.

- **Special Environment Surveys**

Surveys can be conducted in environments where conventional site discovery methods cannot be employed. The three most common examples are urban environments, where modern construction and materials obscure the ground surface; military sites, where artifacts can occur in very low density and frequently consist of metal items and may include potentially dangerous ordnance; and underwater environments, where resources may be submerged. More intensive

background research is necessary for these types of environments, and different sources of background information are available.

Urban Sites – Urban areas often contain buried historic remains but they may also contain prehistoric sites or sites that were previously underwater or in rural settings. Documentary research is to be performed as early as possible in the project planning stage well in advance of any pending construction. At a minimum, the research will consider the following:

- Archival records, such as city directories, city ordinances, Sanborn insurance maps, census data, etc.
- Relevant information on previous disturbance. Construction that may have disturbed earlier deposits may be assessed by a visual inspection of the survey area and an examination of any records that relate to ground disturbance activities (for example, presence of basements on Sanborn insurance maps, construction of utility lines, etc.).
- Historic maps that contain locational data on structures.
- Historic photographs and illustrations (for example, *Harper's Weekly*, etc.)

Military Sites – Military sites are difficult to identify because they typically have low artifact densities dispersed over a large area. Campsites were often policed to keep them clean and in order, and are characterized by features separated by expanses of open, essentially artifact-free ground.³ At a minimum, research will consider the following:

- Historic background research of military maps and published records (for example, *The Official Military Atlas of the Civil War*, Hotchkiss maps and National Park Service (NPS) battlefield maps). Battlefields, earthworks, and troop movements are typically depicted on military maps. Encampments are seldom depicted but may be associated with battlefields and earthworks.
- Individuals and organizations knowledgeable about military sites in the area (for example, local archaeologists, local historians, and NPS personnel) are to be consulted.

Underwater Sites – Underwater sites may consist of sites that were once terrestrial (either prehistoric or historic), shipwrecks, docks, piers, launch ways, etc. Professionals working in underwater environments shall consider the following:

- DHR Archaeological Site Inventory and library of historic resource reports, and other Virginia shipwreck data;
- The degree of previous disturbance (dredging, etc.);
- Documents such as navigation charts, naval records, bathymetric charts, geological charts, etc.;
- Interviews with local divers and watermen; and
- Piers and other associated terrestrial remains that may suggest the presence of submerged resources.

³ Christopher T. Espenshade, Robert L. Jolley, and James B. Legg, "Value and Treatment of Civil War Military Sites," *North American Archaeologist*, 23:39-67.

- **Phase I Methods**

Field methods are to be appropriate to existing field conditions, based on a research design, and reflect the current state of professional knowledge.

- **Conventional Survey**

When field conditions warrant, systematic visual inspection of plowed fields and surface collection of artifacts has proven to be a highly effective and efficient method of site survey. Systematic surface collection is encouraged after replowing and disking of previously plowed fields to a depth no greater than the previous disturbance prior to inspection. However, even in previously plowed areas, the clearing of trees and large brush to facilitate surface collection has the strong potential to disturb sub-plowzone soils and, therefore, is not regarded as an acceptable methodology. All exposed surfaces are to be inspected. However, at least 50% exposure is needed to warrant visual inspection without complementary subsurface investigation.

When an archaeological site is identified by visual inspection, excavation of at least two shovel test pits (STPs) is recommended to assess site depth and the presence or absence of intact cultural strata and/or features. However, low probability areas (for example, poorly drained soils and steep slopes, generally with a grade greater than 15%) and extensively disturbed non-floodplain areas need only be subject to visual inspection. If the visual survey locates natural benches, quarries, or other cultural features, the visual testing is to be augmented with additional, selectively placed, STPs. Rockshelters identified during visual survey shall be noted on field maps, but no excavation is to be conducted without receiving the proper permit from the Virginia Department of Conservation and Recreation (DCR) and DHR. For large survey areas that utilize predictive models at the Phase I level to identify archaeological sites, verification of the model is to include testing of at least 10% of the areas identified as low probability.

Excavation of cylindrical STPs (not smaller than 15 inches in diameter) remains one of the most reliable means of site identification in areas of low surface visibility. Whenever possible, STPs are to be tied to a known datum or fixed reference point, with their location clearly marked on appropriate maps.

As a general rule STPs are to be excavated at intervals no greater than 50 feet and will continue to sterile subsoil, if possible. It is recognized that different site types, as well as soils and topography, may justify a larger STP interval. Justification for an STP interval greater than 50 feet shall be clearly presented in the report. Similarly, a tighter interval is to be considered if small, low-density sites are anticipated. The standard 50-foot interval for STPs may also be augmented by judgmental testing in:

- High probability areas;
- Map-projected site areas; and
- Areas containing vegetation or cultural landscape features associated with historic sites.

Additional STPs at tighter intervals shall be excavated to determine whether individual artifacts recovered from one STP with no adjacent positive STPs are isolated finds or small low-density sites. An attempt is to be made to estimate the site boundaries at this stage of the investigation. The boundaries for sites in areas of poor surface visibility may be defined by the excavation of STPs in a cruciform pattern or at radial transects.⁴

All soils from STPs must be screened through ¼-inch hardware cloth. All artifacts fifty years of age and over are to be retained with the exception of materials such as brick, shell, charcoal, etc., which may be quantified in the field, a sample retained and the remainder discarded.

Notes on all STPs and trenches will be recorded and are to include information on survey/site/transect identification and location, either a profile drawing or detailed description of strata, soil types, Munsell descriptions, depth measurement, and a list of artifacts (both those kept and discarded). It is important to note the environmental conditions under which any testing strategy was employed (for example, adverse weather, condition of ground surface, etc.).

A detailed map is to be prepared showing areas surveyed, areas eliminated from survey due to disturbance, slope, wetness, etc., and the location of the positive and negative STPs.

- **Remote Sensing**

Remote sensing may be used to augment more traditional survey methods by identifying high potential areas for subsurface testing. Remote sensing (using metal detectors,⁵ proton magnetometers and ground penetrating radar, etc.) may be appropriate for certain types of sites associated with the Contact Period or Civil War, and is particularly useful for identifying burials. In underwater survey, remote sensing is often effective in identifying targets for later diver verification. A specific case is to be made in the research design for the use of remote sensing, and its

⁴ Joseph L. Chartkoff, "Transect Interval Sampling in Forests," *American Antiquity*, 43:46-53.

⁵ Metal detecting has proven to be the most efficient way to identify and properly evaluate Civil War sites. Often the nature of military camps, in particular, makes them difficult to identify and evaluate using commonly accepted cultural resources management methodologies. In addition these sites are often missed due to their location in areas that are overlooked due to terrain slope or proximity to natural resources (see Clarence R. Geier, David G. Orr, and Mathew Reeves, *Huts and History: The Historical Archaeology of Military Encampment during the American Civil War* (Gainesville, Florida: University Press of Florida, 2006), and Susan E. Winter, "Civil War Fortifications and Campgrounds on Maryland Heights, the Citadel of Harpers Ferry", *Look to the Earth: Historical Archaeology and the American Civil War*, edited by C. R. Geier and S. E. Winter (Knoxville, Tennessee, 1994) p. 128–129). Metal detecting should be performed on all portions of a project area that are not disturbed or inundated; an appropriate methodology involves using a 25-foot transect grid established across the project area, then conducting metal detecting in a zig-zag pattern within each transect with approximately 6-foot wide sweeps to ensure maximum coverage. Positive contacts are to be identified with pin flags and the area around each positive contact intensely swept to determine if additional cultural materials are located in the region. The locations of the pin flags should be excavated to determine if the contact is positive for historic ferrous and/or non-ferrous metal artifacts, and all contacts positive for artifacts mapped, so that artifact distribution maps that show and discriminate between locations of military and non-military, possible dual use, and overtly military artifacts can be produced.

relationship to other survey methods made explicit.

Four geophysical techniques are principally employed in archaeology: magnetometry, electrical resistivity, electromagnetic conductivity (EM), and ground-penetrating radar (GPR). For a discussion of each approach, their suitability in various environments, and the latest advances in the field of geophysical methods refer to 'Geophysical Surveys as Landscape Archaeology' by Kenneth L. Kvamme.⁶

- **Special Environment Surveys**

Deep Sediments – If colluvial, alluvial or aeolian deposits are known to be present in the survey area from background research or by field inspection, testing will be needed to identify buried sites or the potential for such sites. Testing may include a combination of geophysical methods such as coring, hand excavation of deep shovel tests or three-foot square units, or mechanical slit trenching. The choice of technique will depend upon the depth of the deposits. DHR strongly recommends that deep testing be performed on all parcels of alluvial or colluvial soil within the project area. If full-scale systematic testing of the project area is not feasible, a geomorphologist is to be employed to develop a sampling program that identifies soils suitable for the preservation or formation of cultural deposits.

When deep testing is accomplished by the use of mechanical equipment, care must be taken to avoid excessive damage to fragile archaeological sites. Slit trenching with heavy equipment such as a backhoe (preferably toothless) is to be used in situations where deep sediments cannot be reached through hand excavation. Trenches are to be placed in a manner suitable to reconstruct the past and present landforms. For large continuous sections of terrain, the testing is to be adequate to reconstruct the alluvial history of the floodplain. The excavations are to continue until a depositional environment not favorable for formation or preservation of cultural horizons is found. In special circumstances where the terrain limits the access of heavy equipment and hand excavation is not feasible, coring or augering may be implemented. The soils from the cores are to be extracted in a controlled manner and sifted when appropriate.

After excavation, the trench profile will be troweled to inspect for stratigraphy and cultural features. A detailed profile drawing and description shall be completed. If a geomorphologist is used, he or she is to assist in the placement of trenches, evaluation, and interpretation of the excavation profiles. The evaluation may include tests for soil type and texture, standardized color descriptions, and grain size distributions. The geomorphologist will submit a detailed interpretive analysis on the deep testing that will be included as an appendix to the full technical report of investigations. This analysis will address the issues of site depositional processes, their effects on archaeological preservation, visibility of archaeological sites, and landform evolution over time. A summary and discussion of the results should be presented in the body of the technical report.

⁶ *American Antiquity*, 68: 435-457.

In most cases it will not be possible to determine if buried cultural artifacts are present simply by visual inspection of the profile alone. Therefore hand excavation will be required. Preferably, a three-foot square test unit will be excavated at the margin of each backhoe trench where favorable soil horizons have been identified. The test unit will be excavated in a series of arbitrary and/or natural stratigraphic levels until soil horizons not favorable to the formation or preservation of cultural horizons have been identified. All soil will be sifted through ¼-inch mesh hardware cloth and the artifacts retained according to level. As conditions dictate, alternate sampling strategies may be implemented to evaluate the integrity, age and cultural period of the soil profile. For example, in consultation with the geomorphologist, recent fill layers or very recent alluvium may be removed without sifting. However, the researcher must justify that the sampling strategy is satisfactory to identify historic resources that may be present. In addition, if cultural material is encountered during deep testing and a geomorphologist is not already employed, arrangements are to be made to use a geomorphologist in an evaluation of all the trenches.

Urban Sites – Archaeological testing in urban settings often involves unusual circumstances. We recommend that research designs for urban Phase I surveys be discussed in advance with DHR staff. Prior documentary research is critical because the spatial limits of urban archeological deposits often cannot be defined in the same manner as the boundaries of non-urban sites. Such research may aid in determining the historical boundaries of streets, blocks, house lots, etc. In general, identification efforts in an urban area are to include:

- Test units (in most cases larger than STPs) based upon available documentary evidence and current site conditions.
- Identification of the presence, distribution, and preservation of architectural evidence, site stratigraphy, features, and assessment of site significance based upon all available documentary evidence. Previous work at urban sites indicates it is useful to target midlot and backlot areas for cellars, privies, wells and cisterns.
- Recordation and assessment of features containing large numbers of artifacts.
- The use of mechanized equipment, such as backhoes, excavators, front end loaders, etc. Mechanized equipment is efficient for exposing buried deposits, particularly when the overburden of fill is deep. It should be recognized, however, that the fill may be seen as part of the history of the site itself and not simply as a modern intrusion. Mechanized equipment must be used with care to complement more traditional archaeological strategies.
- Sampling strategies for artifact recovery. Sampling strategies are to be addressed on an individual basis and the method chosen justified in the research design.
- Recordation of excavation procedures including drawings and photographs.

Military Sites – Conventional survey employing shovel testing at military sites has consistently proven to be unsuccessful in identifying these types of sites. Military sites such as encampments and battlefields are to be considered sensitive resources as many contain unmarked burials. Surveys in areas having potential for military sites need to be sensitive to the following:

- 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.⁷

A system of interpreting battlefield landscapes known as the KOCOA system (explained below) 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:

K: Key terrain (terrain that must be taken or held to obtain victory)

O: Observation and fields of fire (terrain that permits observation of enemy movements and avenues of approach)

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

O: Obstacles (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: Avenues of approach (terrain by which the enemy may be approached – this can be anything from an established roadway to an open field)

Underwater Sites – Archaeological testing in underwater settings often involves unusual circumstances. Research designs for underwater Phase I surveys are to be discussed in advance with DHR staff. In general, identification efforts in an underwater setting are to include:

- Placement of test units based on remote sensing results and knowledge of the sunken vessel or submerged cultural remains.
- Use of mechanized equipment where extensive modern overburden is present.
- Careful examination of air-lifted and water-dredged soil samples. The soil samples must always be screened through mesh or net bagging.

⁷ Conner and Scott 1998; Espenshade et al. 2000

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- Recordation of the excavation procedure to include drawings and photographs if visibility permits.
- Compliance with safety standards of nationally recognized diving organizations (PADI, Instructors NAUI, SSI, etc.).

• **Phase I Field Documentation**

The choice of methods for recording Phase I survey field data are to be based on a research design and enable independent interpretation. At a minimum, the following information shall be recorded:

STP documentation is to include the following:

- Provenience;
- Name of excavator;
- Date;
- Description of cultural material;
- Soils; and
- Profile.

Project maps are to include the following:

- Orientation and scale; and
- Location of all STPs and all above ground cultural features, including cultural landscape features and any previously disturbed areas.

Photographs are to be taken of:

- All site locations;
- All cultural features evident on the surface (for example, mounds, cellar depressions, etc.); and
- All cultural evidence beneath the surface (for example, features, significant stratigraphy, etc.).

Evaluation (Phase II)

The goals of Phase II evaluation survey are:

- To determine whether the site is eligible for the NRHP; and
- To provide recommendations for future treatment of the site.

Phase II evaluation will accurately assess the horizontal and vertical integrity of the site as well as define the site boundaries. The level of effort and the methods employed will vary depending upon the environmental setting and site type. The site shall be evaluated in its entirety, not just within the immediate project boundaries. However, testing strategies for Phase II evaluation studies may focus primarily on that portion of the resource to be directly affected by the proposed project.

Phase II analysis is to be oriented toward evaluation of the site and its ability to answer important research questions. This may be accomplished by:

- Examination of intra-site structure;
- Discussion of the relationship between surface and subsurface remains;
- Tabulation of data on provenience;
- Radiocarbon dating;
- Identification of feature flotation samples.

The evaluation will take into account the percentage of the site area excavated and consider how well the excavated portion represents the site as a whole.

- **Phase II Background Research**

Background research shall be conducted prior to the initiation of any fieldwork. Background research is to be sufficient to form research questions and to develop relevant historic contexts to aid in determining the site's eligibility for the VLR and the NRHP.

Phase II background research will expand upon and refine the research conducted during the Phase I identification by addressing the following:

- Placing the study in a regional research context;
- A more intensive examination of reports and records consulted during the Phase I survey;
- More in-depth interviews with informants; and
- Examination of more detailed records, (for example, deed records, tax records, census records, probate records, circuit court records, etc.).

Background research for prehistoric period sites is to focus on gathering more detailed information concerning site chronology, function, and regional settlement and subsistence patterns. For historic sites, background research will focus on site-specific data such as site chronology, function, and the ethnicity and socioeconomic status of site occupants.

- **Phase II Methods**

The choice of field methods is to be based upon a research design and shall always reflect the current state of professional knowledge.

Accurately defining site boundaries is a goal that can often be accomplished by conducting a controlled surface collection for those sites having good ground surface visibility. Previously plowed sites with poor surface visibility may require re-plowing, within the depth limits of the existing plow zone, and exposure to rainfall to enhance artifact visibility. In forested settings a more intensive systematic subsurface testing program to establish boundaries may be necessary.

Testing strategies will take into account the following:

- Results of the Phase I testing;
- Results of background research;
- Cultural or natural features located on the surface (for example, mounds, cellar depressions, fence lines, avoidance of previously disturbed areas, large trees etc.);

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- Systematic or probability-based sampling schemes; and
- Remote sensing results.

Plow disturbed sites constitute one of the most frequent classes of resources within the Commonwealth. In investigating these sites at the Phase II level, the initial goals are to be to evaluate the depth of plow disturbance, the quantity and taxonomic variety of artifacts present, and the extent and cultural integrity of spatial distributions. Strategies useful in attaining these goals may include high-density STP excavation (10-foot interval), high resolution surface collection (10-foot grid), and the hand excavation of larger test units.

These efforts should result in the recovery of a representative sample of artifacts and an initial assessment of activity areas within the site boundaries prior to any mechanical removal of the plowzone. It is to be understood that any mechanical removal is a sampling strategy. Complete removal of the plowzone may preclude other treatment options, such as avoidance, and in the context of the 106 process may therefore be considered an adverse effect.

Phase II investigations are to also determine if subsurface cultural features are present beneath the plow horizon. Appropriate methods may include hand excavation and sifting of the plow layer, and/or the use of mechanical equipment to expose the underlying horizon. Once the surface layer has been removed the base of the excavation is to be troweled or shovel shaved to expose any soil anomalies. Each soil discoloration shall be investigated to determine if it is a cultural feature. It is recommended that 2-10% sample of the surface area within the site boundaries be exposed and that mechanical means be used only after artifact concentrations have been thoroughly recorded through hand excavation and screening. The investigator shall also be aware that silt fencing may be required to stabilize the landscape if more than 100 contiguous square feet of soil is disturbed through testing.

On a case-by-case basis sampling of features may be needed to verify their cultural association and to determine their age, function and research potential. During this process, each feature is to be scale-drawn in plan and profile and photographed. Feature fill is to be water screened through 1/16th-inch mesh screen and volumetrically large matrix samples are to be processed by water flotation. All of the materials recovered by screening, and the flotation fractions, shall be sorted, identified, and bagged by provenience. Also, organic samples are to be retained for dating. When previously recovered data addresses the issues of feature integrity and age, additional feature excavation should not be undertaken. Again, it is to be understood that sampling of features at the Phase II level will focus on limited and well-defined goals. While it is impossible to define a point applicable in all instances at which Phase II testing (evaluation) ends and data recovery (Phase III or treatment) begins, a rule of thumb is that Phase II testing is completed when sufficient information has been gathered to make a determination of eligibility or a management decision. "Testing" that destroys large portions of a site prevents the consideration of other site treatment alternatives and shall be avoided at the Phase II level. In the context of the 106 process, excessive testing at the Phase II level may result in a finding of Adverse Effect and sanctions to the responsible agency. When in doubt, consult with DHR staff about the percentage of features or levels proposed for sampling.

A permanent, fixed datum is to be established on all sites recommended for Phase III data recovery.

- Special Environments

Testing strategies in deeply buried floodplain sites, urban settings, and underwater sites are to be based on the results of intensive archival research and of Phase I testing. Safety factors shall be considered in determining the need for further work to be conducted in special environments. This includes properties with documented hazardous material, as well as deeply buried sites. Appropriate safety standards must be adhered to in all cases.

- **Phase II Field Documentation**

As with Phase I identification, the choice of methods for recording Phase II evaluation field data will be based on a research design and enable independent interpretation. At a minimum, the following information is to be recorded:

Test unit documentation will include the following:

- Provenience;
- Name of excavator;
- Date;
- Description of cultural material;
- Soils;
- Profile; and
- Planview.

The site map will include the following:

- Orientation and scale;
- Location of all STPs, larger size test units, and all above ground cultural features, including cultural landscape features and any previously disturbed areas;
- Site datum; and
- Site boundaries.

Photo documentation is to be provided for

- All cultural features evident on the surface (for example, mounds, cellar depressions, etc.); and
- All cultural evidence beneath the surface (for example, features, significant stratigraphy, etc.).

Provenience documentation is to be provided for the horizontal and vertical provenience of each artifact or collection of artifacts.

Evaluation of Human Remains and Cemeteries

Human burials represent a unique resource and require special consideration during archaeological recovery and evaluation for inclusion on the NRHP. In Virginia, the archaeological removal of human remains and/or associated grave goods requires a permit issued by DHR in accordance

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with *Code of Virginia* 10.1-2305. The exception would be the removal of Native American remains and funerary objects on federal (or tribal) land. Such removal must proceed in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). The research design is to be coordinated with development of the Plan of Action under NAGPRA in accordance with 43 CFR 10.⁸

For specific guidance on criteria for listing cemeteries, refer to the NPS's National Register Bulletin 41, *Guidelines for Evaluating and Registering Cemeteries and Burial Places*. When evaluating burials for listing on the NRHP, DHR and the National Park Service consider the following:

- Historic documentation, if applicable;
- Association with a person or event of significance;
- Funerary monuments/buildings/landscapes with significant artistic or stylistic merit;
- Clearly delineated features (grave shafts), presence of associated artifacts, and/or good bone preservation;
- Potential to address specific research questions; and
- Applicability of NRHP Criteria Considerations.

In the event that a cemetery is recommended eligible under NRHP criteria A, B, or C, it must also meet (at minimum) Criteria Considerations C and D. Cemeteries and archaeological sites recommended eligible under Criterion D are not required to meet the Criteria Considerations. In general, burials must have good bone preservation in order to be eligible under Criterion D. However, it may be possible to demonstrate significance without good bone preservation if documentation, along with artifacts, can establish a secure date for the remains and demonstrate the ability of the resource to provide significant new information on topics such as mortuary practices.

Phase III Data Recovery

All due consideration is to be given to practical methods of preserving significant archaeological sites in place. However, when appropriate consultation has taken place and it is agreed that preservation in place is not practical, data recovery may be appropriate. Data recovery will address defined and defensible research questions. It is to be conducted in the most efficient manner possible. In the context of the 106 process, data recovery is defined as an adverse effect, and as such, requires consultation with DHR and other consulting parties toward the development of a Memorandum of Agreement (MOA). The nature, scope and boundaries of the data recovery will be determined by the parties consulting on the project. On prehistoric sites, the Virginia Council on Indians (VCI) and the affected tribe(s) are participants in the consultation.

In terms of the substantive content, it is recommended that the research design be guided by certain basic principles presented in the Advisory Council on Historic Preservation's *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites*.⁹ In particular, the research design shall take the public benefit into account and provide for a plan to make the information available to the interested public as well as the archaeological community. The preparer of a data recovery plan is to ensure that:

⁸ Refer to the NAGPRA web site for additional information, at http://www.cr.nps.gov/nagpra/TRAINING/Intentional_Excavations.pdf.

⁹ This document is available online at <http://www.achp.gov/archguide.html>.

- The amount and areas of the site to be excavated are reasonable given the anticipated project impacts to the site, and the questions posed in the data recovery plan are answerable given the excavation strategy;
- The research questions appear logical, current and answerable in terms of the potential information the site(s) can be expected to yield given the amount and nature of excavation proposed; and
- The proposed field and laboratory methods for retrieving the information are consonant with the questions asked of the data.
- The laboratory methods shall, when appropriate, incorporate state-of-the-art analytical procedures such as radiocarbon dating, neutron activation, mass spectrometry, infrared spectroscopy, and other suitable analytical methodologies to evaluate relevant research questions.

All data recovery plans are to include the following elements:

- Information on the archaeological property or properties where data recovery is to be carried out, and the context in which such properties are eligible for listing in the NRHP;
- Discussion of the research questions to be addressed through the data recovery, with an explanation/justification of their relevance and importance;
- Description of the recovery methods to be used, with an explanation of their pertinence to the research questions;
- Information on arrangements for any regular progress reports or meetings to keep agency managers, DHR, and other consulting parties up-to-date on the course of the work;
- Description of the proposed disposition of recovered materials and records, along with evidence of agreement regarding curatorial responsibilities;
- Proposed methods for disseminating results of the work to the interested public (for example, presentation during Virginia Archaeology Month, etc.); and
- Proposed methods by which any relevant Indian tribes, local governments and other specific groups will be kept informed of the work, and if human remains or grave goods are expected to be encountered, information on consultation with the VCI and any other relevant Indian tribe regarding final disposition of the materials. On federal land this will be included in the Plan of Action required under NAGPRA.

Curation of Artifacts and Documentation

Archaeological investigations usually result in the retrieval of archaeological materials (for example, cultural artifacts, soil, zooarchaeological items) and production of original data (notes, records, photographs) for a project. Artifacts and data are an integral part of the documentary record of an archaeological site and are to be curated to ensure their stability and availability for future research.

Artifacts that are removed from private lands in connection with a federal action are generally the property of the land owner. Notes, records and photographs generated as a result of a federal action are the property of the federal government, regardless of the location of the archeological site. Provision for the costs of curation may be made a condition of the issuance of a federal license or permit. When the owner cannot provide proper curatorial care, the federal curation standards recommend but do not require that the federal agency seek title to the collection.

The place where a project's artifacts and original data will be curated is to be determined before

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beginning fieldwork. DHR encourages placement of collections with the State Collection Management Facility, managed by DHR, which is the principal repository for archaeological materials recovered from sites in Virginia. Prior to acceptance of a collection, DHR requires documentation of ownership or a Memorandum of Understanding (MOU) with the involved state or federal agency clearly establishing curation responsibilities. The current fee is \$350.00 per Hollinger box.

The NPS has established federal curation standards, entitled *Curation of Federally Owned and Administered Archeological Collections* (36 CFR 79), which apply to surveys, excavation or other studies conducted in connection with a federal action, assistance, license or permit. In 1993 (revised 2007), DHR, in consultation with the Council of Virginia Archaeologists (COVA), established minimum standards for the processing and curation of archaeological collections.¹⁰ These standards are to be followed for all collections to be curated by DHR. DHR recommends adherence to these requirements for all archaeological collections generated in Virginia, in order to standardize curation practices, ensure professionalism in the treatment of archaeological materials, and to assure the availability of collections and documentation for future research.

Any repository that is providing curatorial services for a collection subject to the federal regulations must possess the capability to provide adequate long-term curatorial services, as set forth in 36 CFR 79, to safeguard and preserve the associated records and any material remains deposited in the repository. There is no grandfather clause in the federal regulations. This applies equally to repositories that agree to preserve collections after the effective date (October 12, 1990), as well as repositories that agreed prior to that date. If a repository's officials find that they are no longer able to provide long-term curation, they have the responsibility to consult with the federal agency responsible for the project regarding an acceptable repository for the existing collections.

Personnel

The Principal Investigator has the responsibility to conduct field investigations in a manner that will add to the understanding of past cultures and will develop better theories, methods and techniques for interpreting the archaeological record while causing minimal attrition of the archaeological resource base. All archeological investigations are to be conducted by or under the direct supervision of individuals meeting appropriate professional qualifications for archaeology. The *Secretary of the Interior's Professional Qualification Standards*, part of the *SOI Standards*, establish the following minimum professional qualifications in archaeology:

The minimum professional qualifications in archaeology are a graduate degree in archaeology, anthropology, or closely related field, plus:

- At least one year of full-time professional experience or equivalent specialized training in archaeological research, administration or management;
- At least four months of supervised field and analytic experience in general North American archaeology; and
- Demonstrated ability to carry research to completion.

An individual meeting the *Professional Qualification Standards*, whether the Principal Investigator or Field Supervisor, should be present on site at least 75% of the time and has the ultimate

¹⁰ See Appendix F.

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responsibility for the overall quality of the project and for achieving the objectives of the research design. In addition, the Principal Author of all reports (if he or she is not the same individual as the Principal Investigator) must meet the *Professional Qualification Standards*. Also, any geomorphologist conducting work associated with an archaeological investigation is to have professionally peer-reviewed publications within the field of geoarchaeology and two years of experience in supervising deep testing programs.

Analysis of human skeletal and/or nonskeletal remains must be performed by, or under the direct and constant supervision of, an individual meeting the following requirements:

- Graduation from an accredited anthropology program with an advanced degree in physical anthropology, human osteology, or biological anthropology;
- Demonstrated experience in the handling, reconstruction, and analysis of human remains recovered from an archaeological context; and
- Demonstrated ability to bring research to completion.

The skills of all other investigative personnel must be appropriate to the requested task, the nature of the project, and to the goals and specifications delineated in the research design.

Permits

The following permits may be necessary to conduct archaeological work in the state. The Principal Investigator is responsible for ensuring that any applicable permits are acquired.

- **Human remains** (administered by DHR, *Code of Virginia* 10.1-2305): General cemetery protection laws deem it a felony to remove human remains from a grave without a court order or appropriate permit. The archaeological removal of human remains and associated funerary artifacts requires a permit from DHR. The exception applies to the removal of Native American remains on federal land covered by NAGPRA in that situation. The regulations governing the state permit process require a detailed research plan and both a qualified archaeologist and a qualified physical anthropologist (unless waived by the Director of DHR in deference to the wishes of the descendants) to perform the recovery and skeletal analysis. The application for the archaeological removal of human remains is available on DHR's web site, at http://www.dhr.virginia.gov/pdf_files/Permit-RemovalOfHumanBurials.PDF.
- **State-owned and/or state-controlled lands** (administered by DHR, *Code of Virginia* 10.1-2302): DHR is charged with coordinating all archaeological field investigations and survey conducted on state-controlled lands (10.1-2301;1,2). DHR is given exclusive right and privilege to conduct field investigations on state lands but may grant those privileges to others through a permit process (10.1-2302 and 2303). DHR also has final authority to identify and evaluate the significance of sites and objects of antiquity found on state lands (10.1-2301;3). Applications for archaeological investigations on state-controlled land are available on the DHR web site at http://www.dhr.virginia.gov/pdf_files/StateLandsApp.PDF.
- **Cave permits** (administered by DCR, *Code of Virginia* 10.1-1000-1008; Cave Protection Act): The Cave Protection Act protects from vandalism all geological, biological, and historic features in caves regardless of ownership. A permit is required from DCR, Natural Heritage

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Division, for research within caves and rock shelters. The concurrence of DHR is required before the issuance of a permit.

- **Underwater permits** (administered by the Virginia Marine Resources Commission (VMRC), *Code of Virginia* 10.1-2214 and 28.2-1203, and the United States Army Corps of Engineers (COE), Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403), and Section 404 of the Clean Water Act [42 U.S.C. § 7506(c)]): Exploratory permits are issued without DHR concurrence and allow limited recovery of artifacts, generally no more than seven. The VMRC recommends an exploratory permit for all scientific studies, including remote sensing. Once a historic site is identified, a recovery permit granting exclusive rights is to be requested. At that stage, a permit from the COE will also be needed regardless of the amount of dredging involved.
- **Federal lands permit** (Archeological Resources Protection Act of 1979 (ARPA) 16 U.S.C. §§ 469-469c): ARPA permits are issued by the federal agency owning the land when the archaeological investigations are not conducted by, or contracted on behalf of, the responsible federal agency.
- **Local permits as required:** The appropriate local officials must be contacted to inquire about and obtain any necessary permits, and to find out about any local regulations that apply to archaeological investigations.

CHAPTER 7

ORGANIZING ARCHAEOLOGICAL SURVEY MATERIALS

Department of Historic Resources Identification Numbers

Before a file on a surveyed resource is placed in the Department of Historic Resources (DHR) Archives, it must receive a DHR identification number. This unique number is used in the identification, filing, and entering of information into the Data Sharing System (DSS). The DHR Archives arranges archaeological site files by county or city, and then sequentially by identification number within each locality.

For all archaeological sites, DHR archaeological site numbers are assigned by the DHR Archaeology Inventory Manager. Before issuing numbers, the Archivist must receive a completed DSS form and United States Geological Survey (USGS) topographic quadrangle mapping identifying newly surveyed sites. Please see below for details on mapping requirements

Sites are assigned a three-part identifier that is unique to that site. The first part refers to the state identifier for Virginia, which is 44. The next part is a two-letter county or city abbreviation. Finally, the third part consists of a four-digit number assigned to an individual site in that particular county or city. The three parts of the identifier are combined to create one state archaeology site number. For example, three sites located during a survey in Albemarle County would be given the following sequential state site numbers: 44AB0001, 44AB0002 and 44AB0003. Please note that zeros are used as placeholders for unused digits.

In some cases, a four-digit tertiary number may be assigned in addition to the site number. The tertiary number is used to define a specific context that falls within a larger archaeological complex. For example, a historic house within the Buckland Archaeological District would be issued the number 44PW1659-0001. These numbers are to be assigned sequentially, unless the consultant chooses to use a historic land lot number as well. Each tertiary number must have an accompanying DSS site form specific to this site and be mentioned generally in the parent site form.

In instances where a submerged site in open water does not fall within a county boundary, it will be recorded as though within the nearest county.

Archival Management

An individual DHR Archives archaeological survey file consists of the following materials:

- A DSS-generated survey form printed single-sided on standard archival paper and clipped with plastic clips (such as *Plastiklips*).
- A digital section or high-quality photocopy of a USGS topographic quadrangle map (typically 1:24,000 scale) on which the identified site's boundaries are clearly marked. The DHR identification number and name of the quadrangle map must be clearly indicated.

The DHR survey file will be prepared by DHR Archives staff upon assignment of a DHR identification number and receipt of relevant mapping in hard-copy or electronic form.

Data Sharing System (DSS) Forms

An archaeology site inventory record is to be submitted through the DSS with a temporary site Number in the place of the DHR identification number on the first screen. Once the site information has been entered into the DSS, it is submitted to DHR for review. The Archaeology Inventory Manager will review the electronic record. A permanent DHR identification number will be assigned to replace the temporary identification number originally submitted. The paper copy DSS record is filed at DHR with the original map and other supporting material, once the record is complete and has been accepted by DHR. For more information about DSS data entry for archaeological survey, consult the DSS User Guide and DSS Data Entry Manuals available at www.dhr.virginia.gov, or contact the Archaeology Inventory Manager at (804) 367-2323.

To update a DSS form for a previously recorded site, please contact the DHR Archaeology Inventory Manager. The form will be placed in the appropriate edit box to receive updates. There is a maximum of three months for individuals to update the site form. Once additions are finished, the updated site form shall be submitted for review to the DHR Archaeology Inventory Manager. If a site boundary needs to be altered, an updated map with the new boundary will also be required by DHR.

USGS Topographic Quadrangle Maps

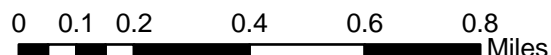
For all archaeology surveys, a section in digital format of the appropriate USGS topographic quadrangle map(s), or clear paper copy map, clearly showing the boundaries of the identified site(s) and temporary DHR identification number are required. DHR prefers that the map is in color and that the shape of the site boundary is created from data collected by a Global Positioning System (GPS). However, other maps may be submitted upon approval from the Archaeology Inventory Manager. DHR will not accept black and white photocopies or faxes of quadrangle maps if contour lines, roads, and other features are not visible due to low resolution. Mapping may be accomplished using DSS or the in-house geodatabase and ESRI ArcGIS Mapper in DHR's Archives (contact the DHR Archivist for further information).

The map submitted must also include the following¹¹:

- **Name of USGS Quadrangle:** The name of the USGS quadrangle must be present on the map.
- **Date of Production:** The interpretation and accuracy of a map is time-sensitive. DHR requires the map to be labeled with the month and year of the map's production. The production date is to be separate from the dates located in the data sources.

¹¹ When creating a map in DSS, the name of the USGS quadrangle and cartographer information need to be added. This may be accomplished using the "Print" function and typing the information into the "Map Description."

- **Cartographer:** The name of the preparer and his or her affiliation are to be included on the map.
- **Scale and Scale Bar:** A scale bar with digits rounded appropriately must be present, along with the scale. The unit of measurement is to be in miles or feet. The map must be in a scale between 1:10,000 and 1:24,000, depending on the size of the site. If the scale of a quadrangle map is not sufficient to clearly provide locations of surveyed properties, a new one will be requested. Styles of scale bars may vary; an example is provided below:



- **North Arrow:** An arrow or compass pointing to true north is required. DHR will also accept a north arrow pointing to magnetic north when present in conjunction with true north. Styles of arrows and compasses may vary; an example is provided below:



- **Sources of Information:** Consultants must identify the sources of their data so readers may track information and interpretation. Most importantly, the map is to indicate the firm that has compiled the data as well as its age for every data set. For data obtained by the consultant, it is also required to indicate how the data was processed or created.

For information regarding the curation of photos, slides, field notes, and other archaeological materials, refer to the Curation Management Guidelines in Appendix F.

GIS Spatial Data

DHR requests that GIS spatial data for archaeological surveys be provided when available. Contact the DHR Technology Administrator/DSS Manager at (804) 367-2323 for additional information.

Archaeological Site Confidentiality and Security

According to the National Park Service (NPS), information about sensitive archaeological sites shall be restricted if its publication is likely to endanger the resource, worsen existing damage, endanger the resource's setting, or cause desecration of a site used in traditional cultural

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practice.¹² Legal authority for restricting site information is provided by the National Historic Preservation Act (NHPA)¹³, Archaeological Resources Protection Act (ARPA)¹⁴, and the Code of Virginia.¹⁵ No information about the character or location of any archaeological site, regardless of restrictions, will be given to any persons outside of the archaeological community.

All DHR staff members and accredited archaeologists may obtain information on a restricted site, upon agreeing to the condition that their intentions will not cause harm in any of the manners listed above and spelled out in the state and federal guidance materials referenced above. A written agreement may be required before access to restricted information is allowed. To inquire about obtaining access to information on a restricted site, contact the DHR Archaeological Inventory Manager or DHR Archivist at 804-367-2323.

¹² John Knoerl, Diane Miller, and Rebecca H. Shrimpton, National Register Bulletin 29: *Guidelines for Restricting Information About Historic and Prehistoric Resources* (U.S. Department of the Interior, National Park Service [n.d.]).

¹³ Section 304 of the NHPA states, "The head of any Federal agency, after consultation with the Secretary [of the Interior], shall withhold from disclosure to the public, information relating to the location or character of historic resources whenever the head of the agency or the Secretary determines that the disclosure of such information may create a substantial risk of harm, theft, or destruction to such resources or to the area of place where such resources are located."

¹⁴ Section 9(a) of the ARPA states, "Information concerning the nature and location of any archaeological resource for which the excavation or removal requires a permit or other permission under this Act or under any other provision of Federal law may not be made available to the public under any other provision of law unless the Federal land manager concerned determines that such disclosure would further the purposes of this Act of the Act of June 27, 1960 (16 U.S.C. 469-469c) and not create a risk of harm to such resources or to the site at which such resources are located."

¹⁵ Section 2.2-3705.7(10) of the Code of Virginia includes in limitations on release of information, "Records containing information on the site specific location of rare, threatened, endangered or otherwise imperiled plant and animal species, natural communities, caves, and significant historic and archaeological sites if, in the opinion of the public body that has the responsibility for such information, disclosure of the information would jeopardize the continued existence or the integrity of the resource."

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