

COUNCIL OF TEXAS ARCHEOLOGISTS

GUIDELINES AND STANDARDS FOR REPORTS

Prepared by the Report Guidelines Committee

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ABBREVIATIONS

- ACT – Antiquities Code of Texas
- APE – Area of Potential Effects (federal projects)
- AWOIS – Automated Wreck and Obstruction Information System
- BHT – Backhoe trench
- CTA – Council of Texas Archeologists
- ENC – Electronic Navigation Charts
- GLO – Texas General Land Office
- HPALM – Hybrid Potential Archeological Liability Maps
- NHPA – National Historic Preservation Act
- NOAA – National Oceanic and Atmospheric Administration
- NRHP – National Register of Historic Places
- PA – Project Area (state projects)
- PALM – Potential Archeological Liability Maps
- PI – Principal Investigator
- RMC – Resource Management Code
- ROW – Right-of-way
- SAL – State Antiquities Landmark
- ST – Shovel test
- TAC – Texas Administrative Code
- TARL – Texas Archeological Research Laboratory
- THC – Texas Historical Commission
- THPO – Tribal Historic Preservation Office
- TxDOT – Texas Department of Transportation
- UW – Underwater

I. INTRODUCTION

A. PURPOSE & SCOPE

The purpose of the Council of Texas Archeologists (CTA) archeological reporting standards and guidelines document is to assist professional archeologists and agency administrators in ensuring compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the Antiquities Code of Texas (ACT). This document was developed by the CTA in consultation with and approval by its membership and is intended to be used in conjunction with the other current professional guidelines and standards established by the CTA. It is recommended to also consult the Texas Historical Commission (THC) and CTA websites for additional resources and helpful links.

This document includes noted revisions to terrestrial report classifications and style, added guidance for underwater reports, provides updates to review and compliance procedures, and provides helpful strategies for report organization and recommended content.

The THC reviews reports in consultation with this document as enabled in the supporting rules of the ACT, the Texas Administrative Code (TAC), Title 13, Part 2, Chapter 26, Rule §26.16 (hereafter referred to as 13 TAC §26.16), 13 TAC §28.9, and 13 TAC §15.2.¹ Omissions or deviations from the standards and guidelines herein (or other specifications under 13 TAC §26.16) may result in rejection of submitted reports, requests for supporting documentation, requests for additional field or laboratory investigations, or requests for background/archival research. In some cases, however, contractual requirements, management, or research needs may justify a report structure that deviates from these guidelines. In these cases, contractors should consult with THC or the reviewing agency for approval to deviate from these guidelines.

Several matters in reporting involve essential ethical considerations. First, the obligation to report and disseminate the results of a project as thoroughly as possible in consideration of project schedules, budgets, and confidentiality constraints. Again, in some cases, legal requirements or management or research needs may justify a report structure that deviates from these guidelines. Alternate report format and content, when agreed to by the Principal Investigator (PI), the regulatory agency involved, and the sponsor, is then warranted.

Second, plagiarism, falsification, or misrepresentation of data cannot be condoned. Copyright laws must be obeyed. Observance of the rules of good scholarship and professional courtesy will help to ensure that copyright laws are not violated. Additionally, authorship credit should be given to all contributing writers of the report. Third, professional archeologists performing investigations must abide by the CTA and Register of Professional Archaeologists (RPA) governing ethics and their professional guidelines regardless of membership status. Descendent communities that provide content and research for the report should be clearly acknowledged.

¹ Previous versions of the Report Standards and Guidelines referred to reports as “short” and “long,” a practice that has been discontinued with the current document.

B. FORMATTING & STYLE GUIDELINES

Use consistent formatting following a widely recognized scientific technical writing style guide (e.g., Society for American Archaeology [SAA], Society for Historical Archaeology [SHA], the Chicago Manual of Style). The purpose of this section is to provide best practices for consistency and legibility.

- Captions: Figure and table captions should include the Figure/Table number and contain a complete and unique description of the Figure/Table. If the information presented relates to a site, the trinomial should always be included. Captions for scenery photos should also include information such as location and direction facing. Artifact photo captions should indicate the side shown, provenience information, and catalog number (if applicable). Lot numbers, specimen numbers and/or catalog numbers listed in artifact photo captions should match the artifact catalog submitted for curation (cross-referenceable);
- Figures: Figures should be appropriately sized and their message easily discernible to the intended audience(s) of the report. They should be clearly captioned following the guidelines described above;
- Fonts: Text, figures, and tables should all use font styles that are clearly legible. Use caution when employing serif fonts in figures and tables. Font sizes should always be at a readable size without the aid of magnification (i.e., 9-pt font or larger);
- Tables: A well-organized table will permit readers to understand the meaning of the data presented with ease. It should be clearly captioned following the guidelines described above. Column headings should be concise and descriptive, allowing readers to understand the components of the table quickly. Data should be separated horizontally using new rows rather than entering multiple lines within a single row. If a table extends onto multiple pages, column headings should be repeated on each page;
- Radiometric dates should follow the SAA style guide;
- Metric units should always be provided for all measurements presented in the text, maps, and figures, with the exception of the area of the survey which should be reported in acres. For historical site investigations/descriptions and sometimes artifact analysis, it may be appropriate to present measurements in standard English units with metric units presented in parentheses; and
- Artificial Intelligence (AI), appendices, figures and tables must have text references.
- Final PDFs should be accessible to people with disabilities in compliance with Section 508 of the Rehabilitation Act of 1973.

C. GRAPHIC DATA PRESENTATION

1) Photographs

With the exception of burial contexts, human remains, funerary objects, sacred sites, and other sensitive materials, photographs presented should include:

- Photographs of the PA/APE to contextualize the setting, topography, disturbances, etc.;
- Profile photos of backhoe trenches (BHTs), units, and/or a representative sample of shovel tests (STs), etc., demonstrating the typical profiles encountered in the PA/APE or at sites identified within the PA/APE;
- Site photos for both newly documented and revisited archeological sites;

- Photos of diagnostic and nondiagnostic artifacts, features, structures, site overviews, etc., in accordance with the minimum requirements in the CTA Intensive Terrestrial Survey Guidelines (2020); or
- Scales and north arrows should be used when depicting excavation units, artifacts or features; and
- Testing and data recovery reports should include additional photographs documenting the stages of excavation and findings (beyond the minimal documentation standards for survey level reports).
- In alignment with the ACHP 2023 Burial policy, the SAA and SEAC publication policies, photographs of burials, human remains, sacred sites, and funerary objects should not be included in CRM reports without providing documentation of ethical consultation with descendant communities. Illustrations will be accepted.

2) Tables

Tables presented should include:

- Results of investigations, such as auger test BHT/ST/unit logs;
- Artifact inventories, when appropriate, should (at minimum) include quantity, basic typology, provenience, and chronology (when possible) of materials observed;
- When there has been a large number of previous investigations, it is also often beneficial to use tables to summarize results of background research, such as previous investigations, previously documented archeological sites, and other relevant background data, though these tables are not always required; and
- When more than one site was investigated, a table summarizing eligibility recommendations for all sites should be included.

3) Charts and Graphs

These elements are not necessary for all report types but should be used for graphic representation of data when appropriate (i.e., testing and data recovery reports). When used in multiple sections, a best practice should include standardizing color schemes and symbols throughout the report.

4) Maps

At a minimum, all reports should contain the following maps:

- Project vicinity map, indicating the location of the project at an appropriate scale (such as city or county level). An inset of the PA/APE location within Texas is helpful but not required;
- PA/APE map(s) on a topographic basemap, preferably a 7.5-Minute map;
- Results map(s) on topographic and/or aerial basemap;
- Sketch map of each site from current project. Sketch map elements (symbols, fill, shading, etc.) should be easy to differentiate in both color and black-and-white versions of the map; and
- Relevant historical topographic and/or aerial maps with the PA/APE and/or documented site(s). If no base map is used, include relevant features such as topography.
- Legends should only include symbols visible within the extent of the displayed map frame; and
- In keeping with current CTA Intensive Terrestrial Survey Guidelines (2020), a map illustrating locations of relevant site/PA/APE photographs used in the main body of the report is to be included in the report. This can occur in the site map or as a separate figure.

Specific map elements are required and include:

- North arrow;
- Scale with metric units in increments relevant to the data being presented (i.e., 10 m increments instead of 7.45 m increments). Secondary scale with English units is optional and should be at equitable relative scale;
- Consistent symbology should be used across maps within a report;
- For site maps, the following should be included: topography, disturbances, vegetation, expected project impacts; and
- Any basemap used should be identified in the figure or figure caption.

The following suggestions are recommended as map design best practices:

- Some projects may require additional maps to clearly depict the PA/APE and work completed;
- To clearly depict the entire PA/APE at a legible scale. Large area or long linear PA/APEs may require the PA/APE to be broken up over a series of multiple maps (a map book or map series). These connecting maps should contain an index to indicate how multiple maps paste together;
- Carefully consider the appropriate basemap to use. Although aerial photograph basemaps often provide valuable information and are recommended as supplemental information, consider that for some maps, such as site sketches, a basemap may detract from the intended purpose of the map and no basemap may be more appropriate to display the data; and
- Maps should conform to standard cartographic conventions. For this and other best practices, see Brewer, Cynthia A. 2016. *Designing Better Maps: A Guide for GIS Users*. 2nd ed. Esri Press, Redlands, California.

D. ELIGIBILITY AND EFFECT EVALUATION NOMENCLATURE

Reports for archeological investigations present investigative findings in compliance with applicable federal and/or state laws. The following provides suggested nomenclature:

- Federal: A historic property is a precontact or historical district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) under the National Historic Preservation Act (NHPA 36 CFR 800.16(i)(1)). This includes artifacts, records, and material culture related to such a property or resource. For projects conducted under Section 106 of the NHPA, all archeological sites and historic-age buildings and/or structures in the APE should be evaluated for eligibility for nomination to the NRHP;
- State: Archeological sites, buildings, structures, shipwrecks, and objects of historical, architectural, and archeological value may be designated as State Antiquities Landmarks (SALs) and eligible for official designation and protection under the ACT. Archeological sites and historic-age structures recorded for compliance with the ACT should be evaluated for **BOTH** NRHP eligibility and for designation as a SAL (13 TAC §26.16(a)(1)(C).

Eligibility status is recommended by the PI, but the final determination of eligibility is made by the appropriate regulating agency/agencies:

- ***Eligible***: The resource is eligible for listing in the NRHP under one or more of the four criteria as defined in Section 106 of the NHPA, and/or eligible for designation as a SAL under one or more of the five criteria as defined in the TAC.
- ***Ineligible***: The resource is not eligible for listing in the NRHP under any of the four criteria defined in Section 106 of the NHPA, and/or eligible for designation as a SAL under any of the five criteria as defined in the TAC.
- ***Ineligible within ROW/PA/APE***: The portion of the resource situated within a project Right-of-Way (ROW)/PA/APE is not a contributing element to the broader NRHP/SAL eligibility of the resource as a whole. This category is only appropriate for resources that are not fully physically investigated/delineated due to being partially situated outside a project ROW/PA/APE or outside of lands that are accessible to the surveyor. Site components outside the ROW/PA/APE are considered undetermined.
- ***Undetermined***: There is insufficient information to determine whether the resource is eligible or ineligible. The information deficiency should be explained, and recommendations made as to how to collect the needed data to make an eligibility determination. All sites must be evaluated for eligibility status with concurrence from relevant regulatory agencies before impacts can occur; otherwise, undetermined sites must be avoided.

Effects recommendations must be provided by the PI. Final determinations are made by the appropriate regulating agency/agencies:

- ***No historic properties affected***: No historic properties are present within the PA/APE, or there are historic properties present but the project will have no effect on them. The PI should recommend a finding of *No historic properties affected*.
- ***Adverse effect***: Should be recommended when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP; or for designation as a SAL.
- ***No adverse effect***: Should be recommended for sites that are eligible for listing in the NRHP or designation as an SAL, but the project or undertaking will not directly or indirectly alter the characteristics of the resource that qualify it for listing in the NRHP or for designation as a SAL.

II. REPORT SECTIONS

Reports are made up of three basic components: Front Matter, Body, and Back Matter. Some Front Matter content for archeological reports in Texas is required by 13 TAC §26.16, while other content derives from an expectation to have basic, yet critical, information presented in a consistent way.

The Front Matter is extremely important in conveying to the reader the project purpose, location, funding sources, regulatory nexus, who conducted the work, when it was accomplished, how and why the investigation was completed, what was discovered/determined, where the collection is curated, and what was recommended for the project. This is also where the reader can find the layout of the report content including the tables, figures, and appendices.

The Body of the report comprises the bulk of report content. It should include at a minimum an introduction, methods, results, discussion, and conclusion. It should include relevant context including but not limited to environmental and cultural background information as well as additional relevant pre-field research. In the methods, there should be an outline of the research design and methodologies for

the full investigation that reflect adherence to at least the minimum CTA standards. Results should clearly demonstrate the data that was collected from field investigations. In the discussion, include any analysis that was conducted with the collected materials, data, or additional archival research should be included and a synthesis of interpretations of that data. Then finally, the conclusion should include a summary of the Body and final recommendations.

The Back Matter comprises the supporting information presented in the text, such as references cited, appendices, and a glossary, the latter of which is usually reserved for more complex reports requiring definitions for the reader. The Back Matter represents the area to place supporting information and documentation of what was presented in the Body of the document. Without the materials presented in the Front and Back Matter sections, a report is incomplete. These sections prepare the reader for what will be presented in the Body as well as provide guidance to the source materials and supporting data of the Body.

In short, a well-prepared report streamlines the review process, is a record for curatorial purposes, and serves as a reference for future researchers. Although the bulk of the sections that follow pertain to terrestrial archeological reports, additional content for reports produced for underwater investigations is addressed in Section D.

A. FRONT MATTER

The Front Matter introduces the report and should consist of the following elements, some of which are required by the rules presented in 13 TAC §26.16. A Title Page, Abstract, and Table of Contents are always required. A Management Summary is commonly used by both federal and non-state agencies who are looking for a concise summation of the project and the nature of the resources documented for management purposes. Coordination with the lead agency is recommended regarding their particular Management Summary guidance. Similarly, a List of Acronyms is not always necessary in a report and will depend upon the complexity of the report and usage of specialized terms. Front Matter elements are presented below.

1) Title Page

- Project Name;
- County or Counties;
- Principal Investigator and Investigative Firm;
- Date of Publication (Month/Year);
- Texas Antiquities Permit Number;
- Lead agency and lead federal agency project or permit number, if applicable;
- Report Author(s) (if prohibited by formatting, please include in text; authors shall include those subconsultants who also wrote portions of the report);
- Indicate Draft or Final; and
- Some state agencies may require additional graphics and/or details and should be consulted prior to report submission.

2) Abstract

- Project name;
- Project sponsor, contracting party, landowner, and investigative firm;
- Regulatory trigger(s) & Texas Antiquities Permit number (if applicable);
- Nature of investigation (survey, data recovery, archival research, etc.);
- Project location;
- Project size, which should always be presented in three dimensions to indicate both areal size and depth below surface. Total acreage of the PA/APE must always be included, and length and width should be included for linear projects. If survey efforts did not include the entire PA/APE, the acreage actually investigated should also be included;
- Principal Investigator and field supervisor;
- Project fieldwork date range (start and finish) – a general date range is sufficient as long as the specific field dates are presented in the body or the report;
- Quantification of field efforts (e.g., number of auger tests/BHTs/STs/units);
- Description of findings: a description of all recorded and/or revisited isolated finds, sites, historical above-ground resources, and observed disturbance(s). All sites, new or revisited, should include trinomials and descriptions of the work performed;
- Recommendations should be made for each documented/revisited site and/or resource including: NRHP eligibility and SAL designation (as applicable with reference to applicable criteria), recommendations for protection/avoidance/minimization of impacts, additional work (testing or data recovery), discussion of project effect on historic resources;
- Discussion of artifact collection strategy; and
- Name and location of the repository where the collection will be submitted for final curation. For ACT projects, the repository must be approved through the THC Curatorial Facility Certification Program; and
- Name of federal and/or state agency if different from the project sponsor.

3) Management Summary (if applicable)

- Project sponsor;
- Landowner;
- Project location and size of PA/APE;
- Quantify which portion of the PA/APE was investigated (e.g., number of acres in PA/APE vs number of acres surveyed, depth of investigations vs. projected impacts);
- Purpose of the sponsor in funding the investigation;
- Investigating firm or institution;
- Personnel employed in the investigation and their respective roles;
- Texas Antiquities Permit number and/or other applicable permit numbers;
- Quantification of level of effort (i.e., number of auger tests/BHTs/STs/units etc.);
- Project field dates (start and finish) – please use specific days and not just month/year;
- Resources recorded/revisited and the nature of those identified resources;
- NRHP or SAL eligibility recommendations for identified resources, if warranted;
- Recommendations for further investigation, if any; Name and location of the repository to which the collection was submitted for final curation. For ACT projects, the repository must be approved through the THC Curatorial Facility Certification Program; and
- Name of federal and/or state agency if different from the project sponsor.

- 4) Acknowledgements (if applicable)
- 5) Table of Contents
- 6) List of Tables
- 7) List of Figures
- 8) List of Appendices
- 9) List of Acronyms/Abbreviations (if applicable)

B. REPORT BODY

1) Introduction

The abstract and/or management summary and the introduction will contain similar elements to a certain extent, in that much of the information presented in the former should also appear in the latter. However, the introduction should be directed to a different audience. The introduction should address not only the sponsor and relevant agencies, but also a more general readership, including other researchers. Its function is not to abstract information of a specialized nature, but to provide a more generalized orientation to and summary of the purpose and content of the report.

The following information should be included in the introduction:

Summary of the archeological investigation(s):

- A brief summary statement describing the type of investigation, for example: reconnaissance survey, intensive survey (with shovel testing and/or deep prospection), eligibility testing, data recovery, etc.;
- Fieldwork date range and project length – specify the dates between which each phase of the project occurred;
- Quantification of field efforts (e.g., number of auger tests/BHTs/STs/units);
- Total number of sites investigated or newly-recorded; and
- Identity of fieldwork, analysis, and report staff and other personnel directly responsible for the data collection, analysis, and report preparation.

The nature of the proposed construction work, including:

- Summarize the proposed work, (e.g., natural gas pipeline, lignite coal mine, roadway construction, oyster reef, beach nourishment project, etc.);
- Description of the proposed project, including its location and boundaries (PA/APE). Vertical depths of the proposed ground disturbing impacts, or estimates thereof, should also be included. Include acreage for the total PA/APE and the acreage surveyed as well as length and width for linear projects;
- Definition of the proposed PA/APE for archeological resources and, if appropriate, non-archeological historical resources (i.e., direct vs. indirect vs. visual, as appropriate) and projected

impacts of the proposed activities including the horizontal and vertical impacts of the sponsor's proposed activity on the study area. This description needs to include staging areas, utilities, vessel anchorage areas, etc.; and

- Map of project location with the PA/APE clearly marked.

Identities of the proposed project's partners including:

- Lead public agency or entity (federal and/or state) triggering compliance with federal or state laws;
- Project sponsor (who is paying for the construction project);
- Contracting party(ies);
- Investigating cultural resource management firm;
- Landowner (i.e., whether the property is under private ownership, or the name of the federal, state, or political subdivision); and
- Other public funding sources and/or public stakeholders.

Regulatory framework (when applicable):

- Federal/state/dual jurisdiction – list lead federal, state and any applicable municipal reviewing agencies. Include references to appropriate regulations (e.g., compliance with the ACT and associated regulations [13 TAC 26, 28], or Section 106 of the NHPA and associated regulations [36 CFR 800], specifying the trigger for each statute (e.g., federal funding, federal permit, federal or state land ownership or control);
- The purpose of the sponsor in initiating the investigation, (i.e., to identify any archeological resources within the PA/APE, evaluate the eligibility of those resources for inclusion in the NRHP and designation as a SAL, and make recommendations for management of such resources by avoidance, preservation, or further investigation; and
- Indicate which specific federal and/or state practices or standards guided the fieldwork and reporting. If the project diverged from these recognized practices or standards, the report should include the dates of the coordination letters with reviewing agencies where this methodology was approved. If unanticipated onsite field conditions result in divergence from federal or state standards, the submitted scope of work for the permit application, or a previously approved alternative field methodology plan, the report must include a detailed description and justification as to how the revised effort was equal to or sufficient towards meeting regulatory compliance. Acceptance or rejection of any divergence from pre-field coordination or accepted federal/state standards is within the purview of the THC/SHPO.

Curation:

- The repository of the records and artifacts deriving from the project (i.e., where the collection will be curated). When applicable, this should also briefly discuss discard requests or other curation specific correspondence relevant to the project. Relevant documents and/or correspondences should be included as an appendix to the report.

2) Environmental Background

The purpose of the Environmental Background chapter or section is to contextualize the PA/APE regarding its natural setting, both past and present. This chapter should provide a summary of regional and locally specific data including recent sources (i.e., all references should not be 50+ years old). The information presented in the environmental background should directly relate to anthropogenic use of the PA/APE, both past and present. Discuss paleoenvironmental data (where available) and how these conditions may

have affected potential site types and distributions within the PA/APE, natural resources available to site inhabitants, site formation processes, and site preservation. Describe present environmental conditions, how they differ from past conditions, and if the present environment affected the selection of field methods and preservation of cultural deposits. An effective Environmental Background should be included in reports, regardless of positive or negative archeological findings; however, the level of detail and depth of research should be appropriate to the project. To this end, Environmental Background sections should include the following, though it is recognized some information may not be available or applicable to every project:

- Topography- elevations across the PA/APE and specific landforms found in or near the PA/APE. Topography should be discussed in terms of how it may have affected settlement patterns or other human behaviors;
- Hydrology- natural or artificial streams, springs, or bodies of water found within or near the PA/APE, and how they may have changed over time;
- Soils/Geology- mapped soil units throughout the PA/APE and their potential to contain or affect buried cultural deposits. Underlying geology of a PA/APE may be relevant as it affects overlying soil types or lithic resource outcrops;
- Climate data (e.g., annual rainfall and temperature) as it relates to current conditions as relevant to site preservation, implemented survey methods, land use, etc. Paleoenvironmental data, when applicable, should be discussed here;
- Flora and Fauna- plants and animals that would have been available to past inhabitants of a PA/APE. Note if this has changed significantly over time; and
- Land use history- known previous uses of land within the PA/APE and how this relates to the likelihood of finding specific site types or intact cultural deposits.

3) Cultural Background

The Cultural Background comprises a summary of a region's cultural history with an emphasis on precontact and historical settlement and activity in the specific PA/APE. The length of the cultural and historical background content should be commensurate with the scale, complexity, and results of the project. An effective Cultural Background chapter or section should be included in reports, regardless of positive or negative results, and will accomplish several objectives relative to the level of investigation:

- Contextualize the reported archeological work with a cohesive narrative that employs the material and written records as well as oral traditions where available;
- Present contextual evidence towards potential identification of discovered sites and unanticipated discoveries;
- Provide the context by which to evaluate cultural resources for eligibility for listing in the NRHP and/or as a SAL;
- Establish that the PI is sufficiently knowledgeable about regional and local culture history; and
- Facilitate education of the client on the importance of cultural history.

The Cultural Background should incorporate verifiable sources that are collectively up-to-date and relevant to the information presented (i.e., the majority of sources should not be 50+ years old). It should be tailored towards documented broad periods of occupation within and around the PA/APE. The Cultural Background should describe each major archeological period and subperiod of history (e.g., precontact, historical) but must be tailored to emphasize those periods or subperiods that are relevant to the PA/APE. It is important to include all major periods of history in case of unexpected discoveries; however, site-specific reports need only include contextual historical backgrounds relevant to that associated time

period, unless other material culture is discovered that warrants a broader discussion. It is important to employ only verifiable sources of information for the Cultural Background. Verifiable sources are produced by individuals or organizations knowledgeable in the subject at hand.

Appropriate sources of information for the Cultural Background include:

- Pertinent gray literature – survey, testing, and data recovery reports, site forms, etc.;
- Published regional archeological syntheses/regional histories – academic press publications, agency or tribal publications, peer-reviewed journals, etc.;
- Reputable tribal histories – those produced by a tribe or in consultation with a tribe;
- Primary sources – newspapers, deeds, photographs, etc.; and
- Sources on ethnohistorical and historical contact or descendent communities.
- The Cultural Background must cite sources appropriately, including when paraphrasing. Authors should not paste lengthy (more than one paragraph) quotations in lieu of writing a Cultural Background or large sections therein.

4) Pre-Field Research

An important step in any successful cultural resource investigation is a review of relevant databases, maps, and other sources to:

- Determine the presence/absence of previously documented cultural resources or significant remote-sensing targets (as defined in 13 TAC §28.2) within and immediately adjacent to the PA/APE;
- Determine whether any part of the PA/APE has been previously assessed for cultural resources in accordance with current standards;
- Determine if the physiography and hydrology of the PA/APE is indicative of areas that are typical of prior human habitation or utilization;
- Determine if past land-use has degraded the potential for the PA/APE to contain buried, stratified, and intact cultural deposits;
- Allow for predictions regarding site types and distributions within a PA/APE; and
- Determine the overall probability/potential for the PA/APE to contain undocumented cultural resources based on the criteria above.

Pre-field research is often conducted during the development of project scopes or permit application process and is included in the report as background influencing the research design and methodology. The research should be conducted during the project planning process to allow for the early identification of potentially significant cultural resources within the PA/APE and to allow for maximum flexibility in the project design if avoidance of cultural resources may be necessary.

What to Include

To provide the reader a clear and concise picture of the background of a PA/APE, the Pre-Field Research chapter or section of a report should:

- Use an appropriate review radius/perimeter around a PA/APE to identify relevant cultural resources or prior investigations within or immediately adjacent to the PA/APE. A greater or lesser distance may be used as appropriate on a project-by-project basis;

- Include a review of relevant databases and historical maps as well as other forms of information that were utilized, such as landowner/informant interviews, consultation with Native American tribes, as appropriate, etc.;
- Provide the results of the research in a clear and concise summary format which may be supplemented by a table, if relevant. The summary should include the name and/or trinomial of the noted cultural resources, a brief description of each including depth of cultural deposition if known, the determined or recommended NRHP/SAL eligibility status of each, the distance/direction of each resource from the PA/APE, and whether the project has a potential to directly affect each resource;
- Provide a map of documented cultural resources and previous investigations within the review radius/perimeter. Maps, photos, and/or tables that illustrate or provide site locational data should state in the caption that site location information is not for public release or display;
- Discuss the results of previous cultural resources investigations within the PA/APE and whether they were conducted in accordance with current standards; to the extent and depths appropriate for the current project impacts; and
- Present an opinion regarding the assessed potential for undocumented cultural resources within the PA/APE.

Database Review

The Database Review is necessary to determine the location of documented cultural resources as well as prior cultural resources investigations within the PA/APE. Recommended sources include but are not limited to:

- Electronic sources of maps and site forms (e.g., THC's Archeological and Historic Sites Atlases, National Park Service's NRHP website, Texas Freedom Colonies Atlas); see the CTA website for specific examples compiled as a supplement to the report guidelines;
- Sufficient effort should be demonstrated to check non-electronic sources of site information (e.g., THC county files); and
- In-person visits to the site files and site location maps contained at the Texas Archeological Research Laboratory (TARL) and the THC.

Please note that, rather than individually plotting all site locations for large projects, digital geospatial files of site locations for large PA/APEs such as extensive, cross-country pipelines or large seismic surveys can be requested directly from TARL for a fee.

Historical Map and Aerial Photograph Review

It is often the case that cultural resources investigations focus on the precontact human history of an area and neglect to account for more recent historic-era occupations or utilization. For this reason the background research conducted for a PA/APE should include a review of historical maps, imagery, and databases to determine the potential locations of historical resources (50+ years old) such as buildings, bridges, dams, etc., as well as larger complexes such as plantations, farmsteads, abandoned town sites, prisons, etc. For underwater archeological reports and reports with PA/APEs near a body of water, this includes historical charts/maps that illustrate and compare modern and historical marine/riverine delineations of the PA/APE.

Informant Interviews

Aside from the database and map reviews, one of the best sources for the types/locations of cultural resources within a PA/APE often comes from the people who previously or currently occupy the property,

have traversed its acreage over the years, and are familiar with its resources. Include current/past landowners, occupants/tenants, and Native American tribes with direct ties to the area. While such sources are often hard to identify, may have left the area, or are deceased, efforts to interview any available sources should be made in order to document their insight into the PA/APE as well as to record site data or artifacts they may have accumulated during their occupation. Use of informant interviews should be considered a best practice and conducted in accordance with the complexity of the project.

Probability Assessment

Finally, the result of the database reviews, map reviews, and informant interviews should guide development of a probability assessment of the PA/APE to contain undocumented cultural resources. This assessment should lead to a summary that justifies the Methods employed (Section 5 below). The probability assessment should be based on:

- The results of the environmental and cultural background sections or chapters;
- The locations/settings/landforms of previously recorded cultural resources within and immediately adjacent to the PA/APE;
- The locations of any structures, features, or land modifications noted during the historical map review;
- The results (positive or negative) of prior cultural resources investigations conducted within the boundaries of the PA/APE;
- Potential Archeological Liability Maps (PALMs) and Hybrid Potential Archeological Liability Maps (HPALMs) maintained by the Texas Department of Transportation (TxDOT) for precontact archeological site potential;
- Recognition that unknown or abandoned cemeteries may be present in the PA/APE (refer to CTA Intensive Terrestrial Survey Guidelines [2020]);
- The soils/geomorphology within the PA/APE; and
- Prior land use and other disturbances that may have reduced the potential for identifiable and/or significant archeological deposits within the PA/APE.

5) Research Design & Methods

The Research Design and Methods sections are critical for understanding why and how a project was conducted. While discussed separately below, the nature and scope of a project will determine whether this will be a single comprehensive section or distinct sections. For example, these sections can typically be combined for a survey. However, for testing and data recovery projects where specific research questions are presented and multiple methods may be employed, it is often more appropriate to present these as separate chapters.

Research Design

Per 13 TAC §26.13(d), the intent of a research design is to ensure the success of scientific objectives, resource management decision-making, and project management. The research design and scope of work should be developed in consultation with the appropriate agencies. It is important for researchers to consider the nature of the resource(s), incorporate existing bodies of data and successful approaches to similar sites, and tie the research to state-wide/regional preservation plans. 13 TAC §26.13 specifies required elements of all research designs submitted for projects subject to the ACT.

The size and scope of a project will determine the complexity of the research design. An intensive survey research design may simply state the objectives of the survey, how new sites will be assessed, and if any previous resources will be revisited. However, testing and data recovery/mitigation projects should also

present specific research questions grounded in theoretical frameworks and research perspectives. Regardless of the scale of a project, a research design should minimally include:

- A statement of objectives and how these objectives will be achieved (i.e., methodology for carrying out the work);
- The basis of evaluation of significance/eligibility for NRHP and/or SAL;
- Research perspectives/research questions (if applicable); and
- Modifications to original/approved research design (if applicable).

Methods

The methods section should clearly convey how the project was conducted throughout all phases, from pre-field research to reporting and curation. Survey standards change over time and simply citing the CTA Intensive Terrestrial Survey Guidelines without specifying the version and describing the methods in detail is insufficient. It is critical that the methods used be clearly defined, and the rationale for how they will achieve the stated aims of the research design be directly addressed. Please note that investigative results should not be discussed in the Methods section. Methodology should be presented in a logical manner, following the progression of a project from background and pre-field research methods to the analysis and the curation preparation methods.

- **Background and pre-field research methods** should identify the sources consulted. When applicable, cite the Texas Archeological Sites Atlas for background research; site form authors should be individually cited. Please specify the quad/years of aeriels and topographic maps consulted. The author should properly cite any on-site archival research conducted for historic-age resources. Archival research sources should provide enough information for the reader to relocate the documents and include, at a minimum, the archive/document location, date, and type of document. For cemetery investigations, a summary of the history of the cemetery and how the cemetery or graves were identified should be included in this section of the report of investigations.
- **Field methods** should describe in detail the following: sampling strategies employed; transect intervals; types of investigative units employed (i.e., auger tests, BHTs, STs, units); vertical and horizontal dimensions of investigative units; spacing and anticipated/estimated number of investigative units; types and measurements of levels used (e.g., 10-cm arbitrary levels or natural levels); screening equipment and techniques; site definition used and site delineation methods employed; artifact collection policy, including details on field documentation and analysis of artifacts on non-collect or partial collect surveys; collection methods and strategies of any samples for special analyses; any in-field conservation practices; and documentation methods, including note-taking, photography, geospatial data standards, and submission of site recording and site revisit forms. If limitations were encountered in the field that necessitated any deviation from the intended methods, these should be generalized in the methods, and then fully described and justified in the Results section.
- **Laboratory processing methods** for artifacts and special samples should detail any steps taken that could alter the physical or chemical properties of an artifact, such as cleaning techniques for different artifact types, drying/storage conditions, chemical treatments, labeling solutions applied, and any conservation measures taken.
- **Analysis methods** should include discussion of classification schemas and relevant theoretical frameworks, diagnostic criteria, specialized equipment used, and identification of personnel conducting analyses. The experience of the analysis personnel should be appropriate to the project goals and specifications in the research design. Consultants with special expertise should be identified. For testing and data recovery projects in which geoarcheology and/or other special analyses are conducted and presented as separate chapters, a best practice would be for these

methods to be only summarized in the Methods section, as long as they are detailed within the analysis chapter.

- **Methods section** should address artifact and records curation and should cite the *CTA Guidelines and Standards for Curation*. This will include a brief statement regarding the ownership of artifacts and documents (State, Federal, or Private project), the curation repository used and associated repository-specific curation guidelines, whether items were curated or if there was a no-collect policy, and any artifact disposal policies. If nothing was curated, because artifacts were returned to the landowner, re-deposited at the site, or otherwise disposed of, this should be explicitly stated. Records generated through artifact disposal requests (i.e., specimen inventories, photos, analysis, relevant records, etc. for the disposed artifacts) should be included as an appendix to the report.

6) Results of Investigations

Results should reference pertinent environmental and historical background information as appropriate to interpreting the results of the field investigations. The format of presentation is an editorial decision, but, for positive findings reports, the basic unit of provenience should be the individual site or architectural feature (newly recorded or revisited).² Details regarding separate standing structures or features that occur within an archeological site boundary need to be independently detailed within that site boundary, as well as information regarding subsurface or surface investigations of the site and/or cultural materials of the site documented.

Survey

The results for archeological surveys should present a project overview that includes:

- A statement of objectives, field observations of the land-use description and setting, the total mileage/acreage surveyed, the limitations to survey (interferences, land access restrictions), and survey completion status;
- A summary of the work completed, the methods employed and associated quantities of investigative units (i.e., number of STs, BHTs, units, etc.), and an explanation for changes/modifications to methods;
- A statement describing federal/state jurisdiction, private land ownership with reference to subsurface investigation units;
- An interpretative narrative summary of the PA/APE including soil profiles, a description of encountered disturbances affecting archeological probability assessments, the average depth of ST/BHT termination and reason(s) for termination, and a statement of compliance with federal/state standards;
- Survey results map(s), overview photographs of survey area(s), ST/BHT descriptions in tabular format (in the report body, or an appendix), and other supporting documentation as warranted; and
- Site descriptions that provide a summary of the site forms and site revisit forms submitted to TARL along with the dates the forms were submitted.

There are several elements of site discussion that are crucial for reporting survey results:

² Standing structures should be assessed for archeological significance, but significance regarding Architectural Historical criteria of eligibility should be assessed by an appropriate Secretary of Interior qualified architectural historian.

- **Work Performed:** Describe the site delineation efforts (both horizontal and vertical) and, when applicable, the collection/documentation strategy (specify collection vs. observation strategy), and staff roles. If the site was not delineated outside the PA/APE, explicitly state this and specify the direction(s) of any potential unevaluated deposits. In cases of cemetery investigations, include a statement of potential for graves outside the PA/APE, such as African American graves outside of, or near, a white family cemetery on a property where enslaved African Americans formerly lived. In cases of historical sites, include archival research, landowner or other informant interviews, and other relevant research that was conducted to aid in the evaluation of the site (see CTA Guidelines for Historic Cemeteries and Unmarked Historic Graves, THC's Guidance for Studying Late 19th-Century and Early 20th-Century Sites, and others as appropriate (<https://counciloftexasarcheologists.org/Standards-and-Guidelines>));
- **Site and Site Area Descriptions:** Include the trinomial, whether it is a revisit or newly recorded, the site type (specify cultural components), its temporal/cultural affiliation, and its location within the PA/APE and broader setting. Discuss site size, site components, the topographic and environmental setting, and the condition and depth of cultural deposits. Describe each structure/feature and its respective diagnostic characteristics. Such analysis should include individual site sketch/GIS maps, site overview photographs, artifact/structure photographs, and synthesis of ST/BHT data within site contexts. Photographs of the site are required and should include photos of the site setting, artifacts, structures, etc., and should create a representative visualization of the various site components and site area.
- **Analysis of Material Culture:** Include a tabular synthesis of artifact assemblages collected or observed, a discussion of temporal/cultural affiliation of diagnostic collections, and horizontal and vertical distribution of artifacts. This could be presented as a table or a narrative synthesis depending on the scale of the collection;
- **Research Value/NRHP/SAL Criteria Evaluation:** If the full extent of site was not investigated (i.e., the site was only investigated within the PA/APE), provide an eligibility recommendation for the portion of the site within the PA/APE. See Section I(D) for recommended terminology. If a site is a previously recorded resource, provide a brief overview of the previous investigations specific to the site, its condition and NRHP/SAL eligibility status, and recommendations for further work; and
- **Previous and/or Anticipated Impacts:** If the site is to be avoided or protected from project impacts, please detail how that will be accomplished.

Testing & Data Recovery/Mitigation

The results section of testing and data recovery/mitigation reports should provide a detailed synthesis of new data collected. The format should mirror that of the approved research design, demonstrating how the testing/mitigation program applied specific investigatory techniques to procure necessary data that would address relevant research questions. The general guidelines relevant to provenience and descriptive detail presented in the preceding report-class outlines also apply here. Additionally, the intra-site provenience of artifacts, features, or associated materials should be provided in the greatest detail possible to clearly demonstrate horizontal or vertical patterning. Emphasis should be placed on gaining as complete an understanding of each site or structure as possible. All previous data, including efforts by previous investigations (professional or non-professional), should be considered.

Other required elements:

- Data tables for collected materials (legible format);
- Photographs of site elements, deposits, units, artifacts, etc.;

- Overview of methods/types of special samples/techniques applied;
- Appropriately scaled maps showing topography, limits of site, locations of all investigations; and
- Detailed plans and profiles for documented features, plan view showing locations of features with reference numbers within site contexts and associated descriptions.

7) Analysis & Discussion (Testing & Data Recovery)

The scope of the project and nature of the data collected will typically dictate whether the analysis and discussion of results should be presented in a single section or multiple chapters, whether analysis should be broken up into multiple chapters, and whether analyses performed by subconsultants should be incorporated in the main body of the report or provided as appendices. For a small testing project with low artifact yield, it may be sufficient to combine all the artifact analyses into a single chapter. However, a large data recovery project with multiple specialized analyses to address complex research questions may require several chapters. As a general guideline, if a combined single section would require more than two or three levels of subheadings, consider presenting the analyses and/or discussion in separate chapters.

Analysis

Testing and data recovery/mitigation projects, and occasionally other projects as well, typically entail the detailed analysis of artifacts and special samples and may also require geoarcheological or other specialized data analysis. Results from archival research conducted on historical sites would also fall in this category. The results of these analyses should be presented in a coherent fashion prior to interpretation and synthesis of the site in the Discussion section. Any artifacts or analyses mentioned in the research design should be directly addressed, even if that particular line of inquiry proved fruitless.

While it is appropriate to provide test results as appendices (radiocarbon dating, INAA, lipid analysis, OSL, etc.), detailed analyses conducted by subconsultants should be incorporated into the body of the report, when possible, particularly if they were conducted to address key research questions. For example, ceramic analysis should be presented in the body of the report, while the tables containing the sherd-by-herd data and results of radiocarbon dating organic residue found on the sherds should be presented as an appendix. All artifact analysis results not included in the body of a report should be provided as an appendix (see section IIC for more guidelines on appendices). Examples of this include, but are not limited to:

- Archival research for historical sites (see THC’s Guidance for Studying Late 19th-Century and Early 20th-Century Sites for requirements). Note for survey projects, this information is usually more appropriately presented in the site results;
- Artifact analysis; and
- Specialized studies & analyses (geoarcheology, macrobotanical, ceramic, etc.).

Discussion

The discussion section should synthesize the results of the background research, field investigations, and analyses to provide interpretation of the site and address the research questions outlined in the research design. All research questions presented in the Research Design should be directly addressed in the Discussion. If the data obtained were insufficient to fully address the question, that should be clearly explained.

For **testing** projects, the recovered data should be synthesized on both an intrasite and intersite level of analysis. The improved evaluations of the significance of the site made possible by testing should be discussed, and the overall effectiveness of the testing program should be assessed.

For **data recovery and mitigation**, the results of investigative studies and explanation of avoidance/protection should each be separately synthesized and assessed. The two should then be correlated to provide an evaluation of the effectiveness of the overall strategy. A synthesis and interpretation of the investigative studies should address both their resource management effectiveness and their research-oriented conclusions and include intrasite and intersite level of analysis.

8) Summary & Recommendations

The summary and recommendations section of the report serves to concisely reiterate pertinent information discussed in detail in the analysis, discussion, and results sections. It presents recommendations for project clearance or further investigations justified by the gathering and interpretation of the archeological evidence. For ease of the reader, a summary table may be included as appropriate.

Required information in the summary and recommendations section:

- Summarize work conducted (e.g., how many STs/BHTs/units and/or cubic meters of soil were excavated, number of artifacts collected/analyzed, etc.). For a survey aiming to examine a larger area for resource predictability and management, this would include a discussion of the character, density, and distribution of cultural resources in the study area. For NRHP testing or data recovery, a summary of the site interpretation should be included;
- Provide trinomials of sites revisited and recorded and indicate general site type for each (e.g., historical farmstead versus precontact campsite, etc.);
- For Section 106 and ACT-permitted projects, present NRHP eligibility recommendations for each identified site;
- For ACT-permitted projects, specify SAL recommendations for each identified site;
- Indicate which of the sites, if any, would be adversely affected by the proposed work or explicitly recommend a finding of no historic properties will be affected;
- Provide recommendations for resource avoidance, protection, minimization of impacts, or further investigations, as necessary;
- Include a statement suggesting what the project sponsor should do if unanticipated discoveries are made during construction; and
- Provisions for the discovery of human remains.

C. BACK MATTER

The back matter of the report should consist of:

1) References Cited (Alphabetical by author's last name or organization name)

2) Appendices (as appropriate)

- Maps or project area figures that illustrate site and cemetery locations if not included in main body of the report (versions of these figures for public release should be restricted and pulling appendices for redaction are often easier);

- ST/BHT/auger tables, if not presented in report text; appropriate presentation area may be dependent upon scale of results:
 - Should be organized by site STs, then general survey STs
 - Should include soil type and Munsell colors documented by stratigraphic levels and depths, total shovel test depth, reason for termination, and artifacts encountered.
- Submitted Site Form and Site Revisit Form data from TexSite should be included either as an appendix to the report, or submitted as a separate file at the time of Draft Report submission;
- Artifact catalogs and analysis tables;
- For some complex projects, it may be useful to provide final agency concurrence in the final report as well as any relevant agency correspondence;
- Any other documents relevant for the project history and regulatory communications; and
When appropriate, proposed avoidance measures for each site with a signed letter of commitment from the project sponsor.

3) Glossary (when appropriate)

D. ADDITIONAL GUIDELINES FOR UNDERWATER INVESTIGATION REPORTS

Reports submitted for underwater archeological investigations have unique additional considerations due to the underwater environment itself and the nature of the data collection and interpretation of remote-sensing data that constitutes a majority of the underwater investigations. Additional content is necessary for understanding the context of the historical and geophysical environment and the remote-sensing data. Each relevant section that requires additional content is discussed below.

1) Abstract

In addition to listing any recorded archeological sites within the PA/APE, the abstract needs to include all remote-sensing anomalies recommended for avoidance using the assigned anomaly numbers.

2) Introduction

Delineate the specific roles for each team member including participation in the on-site field survey/investigation (and their individual specific responsibilities), collection of remote-sensing data, processing of data, interpretation of data, and reporting roles such as author, editor, and production of GIS/CAD images, when applicable.

When discussing applicable federal and state statutes and rules, make sure to include the sections of the TAC that address underwater archeology. This includes chapter 13 TAC 28 and sections of 13 TAC 26.

A 50-m or 150-m added survey margin around the PA/APE is required as an element in the design of the remote-sensing project area (13 TAC §28.6). Please illustrate both the PA/APE and added survey margin in the PA/APE figure to demonstrate this area was considered and included in the archeological investigation.

3) Environmental Setting

For underwater reports produced for Texas Antiquities Permits, this section should discuss, to the extent possible, the relevant riverbank or shoreline changes occurring over time. Often this includes historical

charts/maps that illustrate and compare modern and historical marine/riverine delineations of the PA/APE. Major components of this section should include:

- Historical shoreline changes;
- Water depths of the survey area and if this has changed, including erosion or accretion of landforms;
- Sediment type and sedimentation rate (if known) should be included as it relates to the underwater environment and its potential for the preservation of archeological resources; and
- Land-use History. For submerged PA/APEs, a summary of modern and historical navigational improvements in or near a PA/APE is crucial to understanding the potential adverse or beneficial impacts on historic underwater properties in the PA/APE. This section should include, but not be limited to, a discussion of improvements such as channel dredging, jetty construction, shoreline armoring, shoreline stabilization projects, and creation of borrow or spoil areas. These activities should be discussed in relation to their potential to impact underwater historic properties directly or indirectly.

4) Background/Pre-Field Research

Reports for underwater remote-sensing investigations have two major added components for this section that assist in better understanding the potential for archeological sites within the proposed PA/APE.

Previously Recorded Remote-Sensing Targets

Discuss recorded remote-sensing targets discovered by previous underwater archeological surveys that have intersected or lie within or adjacent to the PA/APE. The authors need to review not just the center point of the targets but also the avoidance buffers that extend 50 m or 150 m from the perimeter of the anomaly's acoustic target and/or magnetic signature, as per state requirements in 13 TAC §28.2 and §28.9. The avoidance boundary must be maintained if it lies within the PA/APE, even if the target itself is outside the PA/APE. Removing or renegotiating avoidance areas must be coordinated through the THC.

Reported Shipwrecks in the Proposed PA/APE

In addition to the discussion of recorded archeological sites and previously discovered remote-sensing targets, this section of the report should contain a discussion of reported shipwrecks in the PA/APE. There are three main sources for these Texas data, although others may also be consulted.

THC Archeological Sites Atlas: The Atlas contains the shipwreck database created and maintained by the THC's Marine Archeology Program (MAP). Use of the database is restricted to archeological professionals approved during the Atlas registration process to have access to sensitive archeological data. This shipwreck database contains more than 1,900 reported historical shipwrecks in Texas state waters as derived from U.S. Coast Guard records, newspapers, memoirs, archival research, coastal charts, and other primary and secondary sources. This is the most extensive database available for reported Texas shipwreck losses. Only a small portion are recorded archeological sites. When using the MAP database's shipwreck layer in Atlas please consider:

- If a reported shipwreck has been discovered and verified, its trinomial is included as a field in the shipwreck's information window. Recorded archeological sites that do not yet have assigned trinomials will have the abbreviation "TBA (to be announced)";
- For discussing shipwrecks near the PA/APE use 1 mile instead of 1 km as the search radius;
- Review the positional accuracy of the reported shipwreck. If it says "exact" and also includes a trinomial or "TBA" in its data, then it is a recorded archeological site. Most reported shipwrecks have positional accuracies of 0.25 miles or greater (sometimes 10+ miles). Make sure the

positional accuracy of shipwrecks outside of the PA/APEs is considered, in case less specific positions place them potentially within the PA/APE.

National Oceanic and Atmospheric Administration’s (NOAA) Automated Wreck and Obstruction Information System (AWOIS): The AWOIS database has two separate components and includes shipwrecks and obstructions recorded and listed on navigation charts. These vessels can be much older than their charted date; for example, some Civil War-era Texas wrecks first appeared on modern charts, providing the impression they are twentieth-century wrecks. AWOIS records have not been updated since 2016, so the most current information is presented in NOAA’s online electronic navigation charts (ENC)—often these are a duplication of AWIOS data.

Texas General Land Office’s (GLO) Resource Management Code (RMC): This online database includes codes created by the THC MAP to identify areas having a high or low probability to contain shipwrecks (MK and MJ codes, respectively). The THC manages these data and it is hosted online by the GLO (<https://www.arcgis.com/apps/webappviewer/index.html?id=559e3ee98e0f43c084ba0adb5a2177f1>; see the MK and MJ links under “Miscellaneous” in the GLO Viewer).

A full list of RMC code definitions can be found at the following link:

https://gisweb.glo.texas.gov/RMC/instructions/Revised_RMC_all_20141009.pdf

- MJ – Cultural resources may be present. These tracts lack sufficient data regarding the presence of submerged cultural resources. An archeological remote-sensing survey, issued under a Texas Antiquities Permit, may be required for proposed work that introduces bottom disturbing activities such as dredging and/or creation of sediment placement areas. Consult with the Texas Historical Commission for more information.
- MK – Avoid impacts to cultural resources. SALs or other cultural resources protected by state law are known to be or may be located on this tract and should not be disturbed. An archeological remote-sensing survey, issued under a Texas Antiquities Permit, may be required prior to commencement of activities. Consult with the Texas Historical Commission for more information.

Texas Shipwreck SALs

Many Texas shipwrecks in the Atlas Shipwreck layer are designated as SALs due to a process implemented in the 1980s. All reported pre-twentieth century shipwrecks in the THC’s database were designated as SALs regardless of whether they were recorded archeological sites. Therefore, hundreds of shipwrecks have this protected status though they have yet to be discovered. It is common to have a SAL shipwreck that does not also have a NRHP evaluation, because it has not been recorded through archeological investigations. A SAL shipwreck in Texas is most frequently a reported but not a recorded site.

5) Research Design & Methods

Most underwater permits are issued for underwater remote-sensing surveys. The minimum requirements for data collection procedures and equipment are listed in the 13 TAC §28.6. The research design for underwater archeological surveys should describe the methods and tools including:

Survey

- Name (if applicable), size, and draft of the research vessel;
- Manufacturer and models of the remote-sensing equipment;
- Equipment range and resolution settings used for the survey;
- Collection sample rate;
- Transect line spacing;

- Software used in the collection and processing of data; and
- Processing and analytical methods used for magnetometer, sonar, and when applicable, sub-bottom profiler data.

Ground-Truthing

- Detailed discussion of ground-truthing techniques (probes/cores/augers) including proposed depths and diameters. This should detail how the probe/core positions were recorded and how the probe/core locations were selected; and
- For diving projects, include details of the dive operation including personnel, roles, total bottom time, water depths, and visibility.

For underwater permits, conservation of artifacts is required for testing and excavation permit categories 13 TAC §26.16 (11) (13). In addition to guidance already presented in this document, keep in mind that reports for underwater data testing and data recovery projects should address conservation and include discussion of such methods.

6) Results

Remote-Sensing Surveys

Underwater archeological investigations are heavily dependent on the collection and interpretation of remote-sensing data. Because the ability to interpret and present remote-sensing data in a report is intrinsically dependent on the archeologist's experience and training in these methods, additional sections are to be included in the report to describe this information. Each underwater report, regardless of positive or negative findings, must include a section describing magnetometer interpretive methodologies historically and currently used in the discipline. This helps demonstrate the archeologist's familiarity with both the technology and analytical methods. This discussion is presented either in the Research Design/Methods or Results and should be a comprehensive discussion of the cumulative interpretative models and not just those used specifically toward the report recommendations.

Within the Results, the investigator must also include the minimum criteria used by the authors to select the significant remote-sensing targets recommended for avoidance. This information needs to be clearly denoted and separate from the interpretive model history. As part of this discussion, describe why specific interpretive/analytical models were used for the current project type or location.

Specific requirements for the presentation of remote-sensing data for reports produced for Texas Antiquities Permits are presented in 13 TAC §28.9. As added guidance, the contoured magnetometer data and sonar mosaic for the PA/APE should be presented at a scale that can be reviewed by the THC MAP using the criteria defined by the authors. It is recommended that the data be presented on magnetic contour maps at no greater than 500 to 700 ft to an inch (1:6000-1:8400 scale). Sonar mosaics and bathymetry maps can be produced at 2000 ft to an inch (1:24000) for large survey areas. Additional considerations include:

- Do not obscure the magnetometer and sonar data with labels or icons placed over the magnetometer contours or sonar targets;
- Ensure the Railroad Commission of Texas (RRC) oil features have been compared to the data and accordingly label these features on the contour map(s);
- Per 13 TAC §28.9, vessel transects in the magnetometer contour maps must be included. Do not include vessel transects on the sonar mosaic;

- If sub-bottom data are included in the investigation, please ensure an adequate number of figures are included that define paleo river channels in the sub-bottom data and overall map figures;
- Per 13 TAC §28.9(7), include a figure that shows both the planned and actual survey transects;
- As stated in 13 TAC §28.9(2), include additional large-scale figures for each recommended magnetometer anomaly/sonar target in addition to the magnetometer map and sonar mosaic figures. Such enlarged images should include vessel transects for the magnetometer targets;
- As per 13 TAC §28.2(1) and §28.9(6), illustrate the avoidance buffers for recommended targets in magnetometer contour maps and the sonar mosaics. Illustrate these buffers as circles and not amorphic shapes. Data should be represented in this way as it is easier to understand the avoidance buffer as a radial distance from the target center point that takes into account the maximum extent of the magnetic target or cluster and the 50 or 150 m avoidance buffer; and
- It is preferred that magnetometer targets are labeled by their combined dipole/anomaly cluster and not as individual anomalies within a cluster.

Target Ground-Truthing

THC survey-level underwater permits include basic, intrusive methods to identify a buried historical or precontact site through probing/hydroprobing, coring, or limited removal of sediment overburden through diver-controlled dredging. The presentation of results for such investigations should include a geo-rectified image of the magnetometer anomaly, anomaly cluster, or feature with the positions of the probes and/or cores. Probe or core results for each target should be presented as a tabular summary that includes:

- Probe/Core number;
- Coordinates (WGS84 UTM preferred);
- Method (probe length);
- Depth of penetration; and
- Material encountered/soil description.

7) Summary & Recommendations

For underwater investigations, recommendations include not only the archeological sites, but also the remote-sensing targets that are recommended for avoidance. As with the Abstract and Results, these need to be listed by the numbers assigned to each target by the authors. It is not necessary to recommend the NRHP/SAL eligibility status of a buried remote-sensing anomaly only identified as a magnetometer target, unless it has been ground-truthed and there is additional information by which to form a hypothesis.

The THC also requires in 13 TAC §28.9(8) that these significant targets be summarized in a table. This is often presented as a non-disclosure appendix. This table typically includes:

- Target number(s);
- Coordinates and coordinate system (WGS84 UTM preferred);
- Gamma/nT minimum and maximum range;
- Peak-to-peak amplitude and linear duration (in meters or feet) of magnetometer targets;
- Recommended avoidance radius from the anomaly center point;
- Identity as a monopole, dipole, or larger cluster;
- Dimension and shape/description of sonar targets; and
- Water depths.

III. CHECKLISTS

The following checklists serve as both quick references to specific sections in the CTA report guidelines and as helpful guides for ensuring reports include relevant information. These checklists are meant to summarize the above information presented. Not all checklist items may be applicable to each individual report.

SUGGESTED SCOPE OF WORK CHECKLIST

___ General Project Information

- Project Name
- Project Location/County (Nearest City)
- Project Partners
 - Lead Agency
 - Sponsor
 - Contracting Party/Investigative Firm
 - Landowner
- Principal Investigator
- Regulatory Framework
- Funding/Permitting/Approval
- Land Ownership (Federal/State/Private)
- Applicable Regulations
- Federal and/or State Permit Number(s)
- Description of Project/Undertaking

___ Project Area Description

- PA/APE Map (show project components)
- PA/APE Description
- Project Partners
 - Lead Agency
 - Sponsor
 - Contracting Party/Investigative Firm
 - Landowner
- PA/APE Definition
 - Total Acreage
 - Direct/Indirect/Visual PA/APE Acreage
 - Corridor Length/Width for linear projects (metric)
 - Horizontal and Vertical Impacts (metric)
 - Investigative Acreage/Depth (if differs from PA/APE)

___ Research Design & Methodologies

- Type of Archeological Investigation
- Statement of Objectives/Purpose
- Field Methodologies
 - Standards Used
 - Sampling Area/Intensity
 - Transect Intervals and Est. Quantity
 - Investigative unit type(s) (ST, BHT, etc.)
 - Unit Dimensions/Spacing
 - Estimated Quantity
 - Site Definition and Methodology
 - Justification for Trenching or Not
- Marine Survey Methodologies
 - Transect Line-Spacing
 - Equipment
 - Sampling Rate
- Artifacts
- Collection Policy
- Field Documentation/Analysis
- Field Samples
- Documentation Methods
- Laboratory & Analysis
- Processing & Conservation
- Classification/Theoretical Framework
- Diagnostic Criteria
- Specialized Equipment
- Curation
- Ownership
- Repository/Artifact Disposition/Disposal
- Reporting
- Unanticipated Discoveries Protocol

REPORT GUIDANCE QUICK REFERENCE

Please note italicized items are required for reporting under the Texas Administrative Code §26.16. Items specific to underwater reports are marked with (UW).

FRONT MATTER (CTA II[A])-----

__ Title Page

- | | | |
|--|---|---|
| <input type="checkbox"/> <i>Project Name</i> | <input type="checkbox"/> <i>Investigative Firm</i> | <input type="checkbox"/> Lead Agency |
| <input type="checkbox"/> <i>County or Counties</i> | <input type="checkbox"/> <i>Date of Publication</i> | <input type="checkbox"/> Report Author(s) |
| <input type="checkbox"/> <i>Principal Investigator</i> | <input type="checkbox"/> <i>Antiquities Permit Number</i> | <input type="checkbox"/> Mark as Draft or Final |

__ Abstract

- | | |
|---|--|
| <input type="checkbox"/> Project Name | <input type="checkbox"/> Project Impact Depth/Depth Investigated |
| <input type="checkbox"/> Location of Study | <input type="checkbox"/> Project Field Dates/Duration |
| <input type="checkbox"/> Type of Investigation (survey, etc.) | <input type="checkbox"/> <i>Description of Findings</i> |
| <input type="checkbox"/> Regulatory Framework | <input type="checkbox"/> <i>List of Recorded/Revisited Sites (with trinomials)</i> |
| <input type="checkbox"/> Project Partners (project sponsor/landowner) | <input type="checkbox"/> List of Significant Targets to be Avoided (UW) |
| <input type="checkbox"/> Principal Investigator/Field Supervisor | <input type="checkbox"/> Recommendations |
| <input type="checkbox"/> Description of Project/Undertaking | <input type="checkbox"/> Artifact Collection Policy |
| <input type="checkbox"/> <i>Project Acreage/Acreage Investigated</i> | <input type="checkbox"/> <i>Curation Policy and Repository</i> |

__ Table of Contents

__ List of Tables

__ List of Figures

__ Management Summary (if appropriate)

__ Acronyms (if appropriate)

__ Acknowledgements (if appropriate)

REPORT BODY (CTA II[B], CTA II[D])-----

__ Introduction

- | | |
|--|--|
| <input type="checkbox"/> Project Name | <input type="checkbox"/> Project Acreage/Acreage Investigated |
| <input type="checkbox"/> Location of Study | <input type="checkbox"/> Project Impact Depth/Depth Investigated |
| <input type="checkbox"/> Type of Investigation (survey, etc.) | <input type="checkbox"/> Project Field Dates/Duration |
| <input type="checkbox"/> Regulatory Framework | <input type="checkbox"/> Description of Findings |
| <input type="checkbox"/> Project Partners (project sponsor and/or landowner) | <input type="checkbox"/> Identity/Roles of Field Crew, Analysis and Report Staff |
| <input type="checkbox"/> Description of Project/Undertaking | <input type="checkbox"/> Artifact Collection Policy |
| <input type="checkbox"/> PA/APE Definition | <input type="checkbox"/> Curation Policy and Repository |
| <input type="checkbox"/> <i>Project Vicinity Map</i> | |

__ Environmental Background

- | | |
|--|--|
| <input type="checkbox"/> Topography | <input type="checkbox"/> Land Use History |
| <input type="checkbox"/> Hydrology | <input type="checkbox"/> Historical Shoreline Changes (UW) |
| <input type="checkbox"/> Climate, Flora, and Fauna | <input type="checkbox"/> Navigation Improvements (UW) |
| <input type="checkbox"/> Soils and Geology | |

__ Cultural Background, Precontact and Historical

- Major cultural periods within the PA/APE
- PA/APE specific cultural histories and periods

__ Pre-Field Research

- Sources Consulted (Databases, etc.)
- Vicinity Previous Investigations
- Vicinity Sites and Targets
- Vicinity Recorded and Reported Shipwrecks (UW)
- Historical Aerial Photos, Maps, and Charts
- Probability assessment for PA/APE

__ Research Design & Methods

- Type of Investigation
- Statement of Purpose/Objectives
- Research Perspectives/Questions
- Deviation from Original Research Design
- Standards Applied
- Survey Methodology
- Deep Prospection Methodology
- Site Definition/Delineation Methodology
- Excavation Methodology
- Field Artifact Documentation and Analysis
- Laboratory Analysis and Procedures
- Artifact Collection Policy
- Curation Policy and Repository
- Underwater Survey Methods (UW)
- Magnetometer/ Sonar Data Interpretation (UW)
- Underwater Data-Processing Procedures (UW)

__ Results

- Summary of Work Performed
- Result Logs/Tables (may be Appendix)
- Compliance with Federal/State Standards
- PA/APE Field Observations Summary
- Research Value/NRHP/SAL
- Site Area/Units/Components/Structure
- Site Investigative History
- Discovered Prior Impacts
- Maps Containing Site Locations
- Scaled Site Maps*
- PA/APE Representative Photos (may be Appendix)
- Material Cultural Description and Table(s)
- Map of Planned/Actual Transects (UW)*
- Large Images of Recommended Targets (UW)*
- Magnetometer/Sonar Maps (UW)*
- Significant Magnetic Target Selection Criteria (UW)

__ Analysis and Discussion (Testing & Data Recovery)

- Archival Research
- Specialized Studies (geoarcheology, macrobotanical, etc.)
- Material Cultural Discussion (alternative to presentation in Results)
- Address Research Questions

__ Summary and Recommendations

- Summary of Investigation
- NRHP and/or SAL Eligibility*
- Sites Adversely Affected by Proposed Work
- Summary table of sites with eligibility recommendations
- Recommendations for Project
- Avoidance/protection plan, if applicable
- Unanticipated Discoveries Plan

BACK MATTER (CTA II[C])-----

__ Glossary (CTA II[C][1])

__ References Cited (CTA II[C][1])

__ Appendices (CTA II[C][2], CTA II[D][6], CTA II[D][7])

- Restricted Maps
- Figures with Site Locations/Cemeteries
- Project Areas with Discovered Sites
- ST/BHT/Auger Tables
- Artifact catalogs and analysis tables
- Supplemental photographs

- Magnetometer Contour Maps (Positive Findings; UW)
- Sonar Mosaics (Positive Findings; UW)
- Table of Recommended Remote Sensing Targets (UW)
- Trench Photos and profiles
- Site Forms
- Agency Correspondence/Concurrence (Final Report)

__TAC REPORT SUBMITTAL (13 TAC §26.16) -----

- PA Shapefile (with draft report)
- Abstract Form (after final approved)

- Curation Form
- Public Report Copies (after final approved)