Ontario

STANDARDS AND GUIDELINES FOR CONSULTANT ARCHAEOLOGISTS

Acknowledgement

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Contents

Standards and Guidelines for Consultant Archaeologists (2026)

Introduction

These Standards and Guidelines are for consultant archaeologists conducting land-based archaeology in Ontario. Consultant archaeologists undertake archaeological work for clients who are required to address archaeological considerations as part of the land use planning and development process.

Under the *Ontario Heritage Act,* R.S.O. 1990 c. O.18, anyone wishing to carry out archaeological fieldwork in Ontario must meet the following criteria:

- have a licence from the Ministry
- file a report with the Ministry containing details of the fieldwork that has been done for each project and any other information that the Ministry requires

Following standards and guidelines set out by the Ministry is a condition of a licence to conduct archaeological fieldwork in Ontario.

Under O.Reg. 8/06 of the *Ontario Heritage Act*, "consultant archaeologist" means "an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client".

Purpose

Standards set out the basic technical, process and reporting requirements for conducting archaeological fieldwork. They are practices that Ontario's community of consultant archaeologists have agreed should be followed for every project and will be the standards to which licensees will be held by the Ministry.

Guidelines give guidance or advice on good practice beyond the requirements of the standards or, under certain circumstances, provide an acceptable alternative to the standards when stated conditions are met. Following the guidelines is considered to be a matter of professional judgment on the part of the licensee.

These Standards and Guidelines give consultants:

- a benchmark for carrying out and documenting archaeological fieldwork in the land use development context, with the goal of ensuring that archaeological conservation in Ontario is carried out at a consistent and appropriate level
- additional guidance for carrying out and documenting certain aspects of archaeological fieldwork and optional practices considered acceptable under special conditions
- flexibility to exercise professional judgment, based on experience and research, to work beyond the minimum standards or respond to local conditions specific to a particular project
- a clear understanding of the Ministry's expectations, which will help to ensure that the review process is transparent, efficient, and timely

How the Standards and Guidelines were developed

These Standards and Guidelines replace the Ministry's *Archaeological Assessment Technical Guidelines* (1993). The new Standards and Guidelines are based on:

- the Archaeological Assessment Technical Guidelines (1993)
- the "primer" for non-specialists, Conserving a Future for Our Past: Archaeology, Land Use Planning and Development in Ontario (rev. 1998)
- responses to a questionnaire about best practices during Stage 4 activities that was circulated by the Ministry in 1996

- extensive research into standards and guidelines in Canadian and international jurisdictions
- input from a technical advisory group representing a cross-section of archaeologists with specific technical expertise and understanding of a range of contexts within which archaeological consulting is carried out. The group met for a number of intensive day-long workshops during 2004 and 2005.
- input on draft sections from regional stakeholder information and feedback workshops held from 2004 to 2006
- feedback on 2006 and 2009 drafts from archaeologists, archaeological organizations, and other stakeholders, and Indigenous communities, organizations and representatives
- In 2026, the ministry proposed targeted changes to the 2011 *Standards and Guidelines for Consultant Archaeologists* that would support streamlining assessments and make administrative updates to the document.

How to use this document

Section numbering and citation

These standards and guidelines are laid out in seven broad parts. The first four mirror the course of an archaeological consultant's fieldwork on a typical piece of property in Ontario (Stages 1 through 4); the next two deal with specific issues that span the fieldwork and reporting process (geospatial data documentation, and artifact analysis and documentation); and the last one deals with reporting the results to the Ministry.

The major parts are further subdivided into sections and subsections explaining details. Because of this detail and the need to be able to cite specific parts of the document, the Ministry used a standard hierarchical numbering system.

Reading the document

While the Ministry hopes that all readers take the time to go through the entire document, different readers will want different things from it. Everyone should read the glossary of special terms. Planners and development proponents should refer to the introduction for an outline of the fieldwork process.

Alternative strategies for special conditions

Where possible, the Ministry has provided standards, guidelines or both for acceptable strategies to be employed under special conditions, be they regional, geological, or related to the characteristics of a project area or archaeological site type. These alternative strategies are outlined in the relevant fieldwork sections.

Related sections

At the end of most sections is a list of other, related sections, including the relevant reporting sections. The Ministry recommends reading these along with specific fieldwork sections for a complete understanding of the documentation requirements.

Bulletins and Fact Sheets

Additional guidance material on key aspects of the *Standards and Guidelines for Consultant Archaeologists* is provided in a series of related bulletins and fact sheets. These are available on the Ministry website: www.ontario.ca/archaeology.

As of the date of the updated 2026 publication of the Standards and Guidelines, the available technical bulletins and fact sheets are:

Technical Bulletins

- *Engaging Aboriginal Communities in Archaeology* (draft)
- *Forest Operations on Crown Land*
- *The Archaeology of Rural Historical Farmsteads*

- *Winter Archaeology*

Fact Sheets

- *Inspections*
- *Report Review*
- *The Ontario Public Register of Archaeological Reports Fact Sheet*
- *Incomplete and Non-Compliant Reports*
- *Submitting a Complete Archaeological Report Package*

In addition, administrative bulletins with information on Project Information Forms (PIFs), Archaeological Reports, and Archaeological Site Forms, are available.

Glossary

A list of terms and their definitions can be found at the end of this document.

Further information

This document and further information is available on the Ministry website, www.ontario.ca/archaeology.

Archaeology in the Context of Land Use Planning and Development

Determining archaeological potential

Most land use planning and development legislation in Ontario identifies the conservation of archaeological sites as a matter of provincial interest. When a proposed development is likely to impact archaeological sites (has "archaeological potential"), the development proponent must ensure that the provincial interest is satisfied.

Normally, a non-specialist (someone who is not a consultant archaeologist) such as the approval authority or Ministry staff determines archaeological potential. Occasionally, a development proponent may choose to hire a consultant archaeologist to conduct a Stage 1 assessment to determine the archaeological potential of a project.

The non-specialist might use the following tools to help determine archaeological potential:

- the Ministry's Criteria for Determining Archaeological Potential
- archaeological management plans
- the Ministry's guidance materials related to renewable energy projects

These tools help determine the overall archaeological potential of a project. Where archaeological potential has been determined to exist, the development proponent will be required to retain a licensed consultant archaeologist to undertake an archaeological assessment.

The archaeological fieldwork process in land use planning and development

The archaeological fieldwork process followed by consultant archaeologists in Ontario has four stages. Not all stages will be necessary for all projects. The purpose of the first three stages is:

- to identify archaeological sites that are present within the lands that are part of the development project
- to assess the degree of cultural heritage value or interest of identified archaeological sites

- to recommend the most appropriate strategies for those archaeological sites where it has been determined that mitigation of impacts will be necessary

In the fourth stage, the consultant archaeologist carries out the recommended mitigation strategies

Stage 1: Background study

The consultant archaeologist reviews the geographic, land use, and historical information for the project (all lands that are part of the development proposal) and the relevant surrounding area through a background study.

Stage 2: Project area assessment

The consultant archaeologist conducts a general survey of the whole project area to identify all archaeological sites that may be present. The survey consists of walking a ploughed field looking for artifacts lying on the surface of the ground or test pitting unploughable areas (e.g., forested areas, woodlots, old pasture) at regular intervals and screening the soil for artifacts. Special conditions such as brownfield properties or deeply buried archaeological sites may require alternative strategies. If archaeological sites are identified, Stage 3 assessment is required.

Stage 3: Site-specific assessment

This stage focuses on the archaeological sites recommended for further assessment after Stage 2. Stage 3 includes mapping the surface extent of each archaeological site and excavating a number of test units and/or test trenches. The goal of this stage is to accurately determine the spatial extent of the archaeological sites, to more completely evaluate their cultural heritage value or interest and, where necessary, to make recommendations for conducting Stage 4 strategies to mitigate development impacts. For some archaeological sites, no further work may be recommended at the end of Stage 3. For those archaeological sites where it is recommended that Stage 4 is necessary, the process of formulating the appropriate mitigation strategy will require reviewing potential strategies with the client and may also require engaging Indigenous and local communities.

Stage 4: Mitigation of development impacts

Stage 4 includes implementing long-term protection strategies for archaeological sites to be impacted by the project. If protection of the site is not a viable option, the consultant archaeologist conducts an archaeological excavation to document the site and remove the artifacts before construction begins.

Northern Ontario and the Canadian Shield

It is recognized that much of northern Ontario and the Canadian Shield present obstacles to archaeological assessment including less detailed mapping and difficulties of access. Therefore, various exemptions and alternative strategies are included in the Standards and Guidelines to address the challenges of these different environments. These include alternative requirements for the background research involved in evaluating archaeological potential, and alternative requirements for the areas around features of potential that require test pitting. These alternative requirements are discussed in greater detail in the appropriate sections.

For the purposes of these Standards and Guidelines, northern Ontario is defined as Manitoulin Island, Muskoka, Haliburton and Nipissing Districts, and areas to the north. The Canadian Shield is defined as the area of Ontario underlain by the Precambrian Shield. If the consultant archaeologist intends to conduct fieldwork in accordance with the exemptions and alternative strategies, it must be documented that the lands to be assessed fall within those defined areas. The consultant archaeologist must not neglect any areas of potential (e.g., sand plains, clay plains, glacial beach ridges, etc.) that may possess a higher degree of potential and differing characteristics from most of the surrounding environment. Where such areas of higher potential are identified, complete assessments and systematic surveys must be done.

Engaging Indigenous communities in archaeology

Archaeology in Ontario is particularly relevant to Indigenous communities because it can help to document Indigenous histories and peoples and to identify sacred sites and ancestral remains. Engaging Indigenous communities in archaeology adds to the understanding of a project and enriches the archaeological record. The

process demonstrates respect for Indigenous heritage, recognizes Indigenous peoples' connection to the land, and allows everyone to benefit from their knowledge.

This document includes standards and guidelines for engaging Indigenous communities during the archaeological fieldwork process, and for reporting on that engagement. The draft bulletin on *Engaging Aboriginal Communities in Archaeology* provides additional information and guidance for this important aspect of archaeological practice.

Role of the Ministry

The *Ontario Heritage Act* provides that the Minister may determine policies, priorities and programs for the conservation, protection and preservation of the heritage of Ontario. Part VI of the act deals with the conservation of sites of archaeological value.

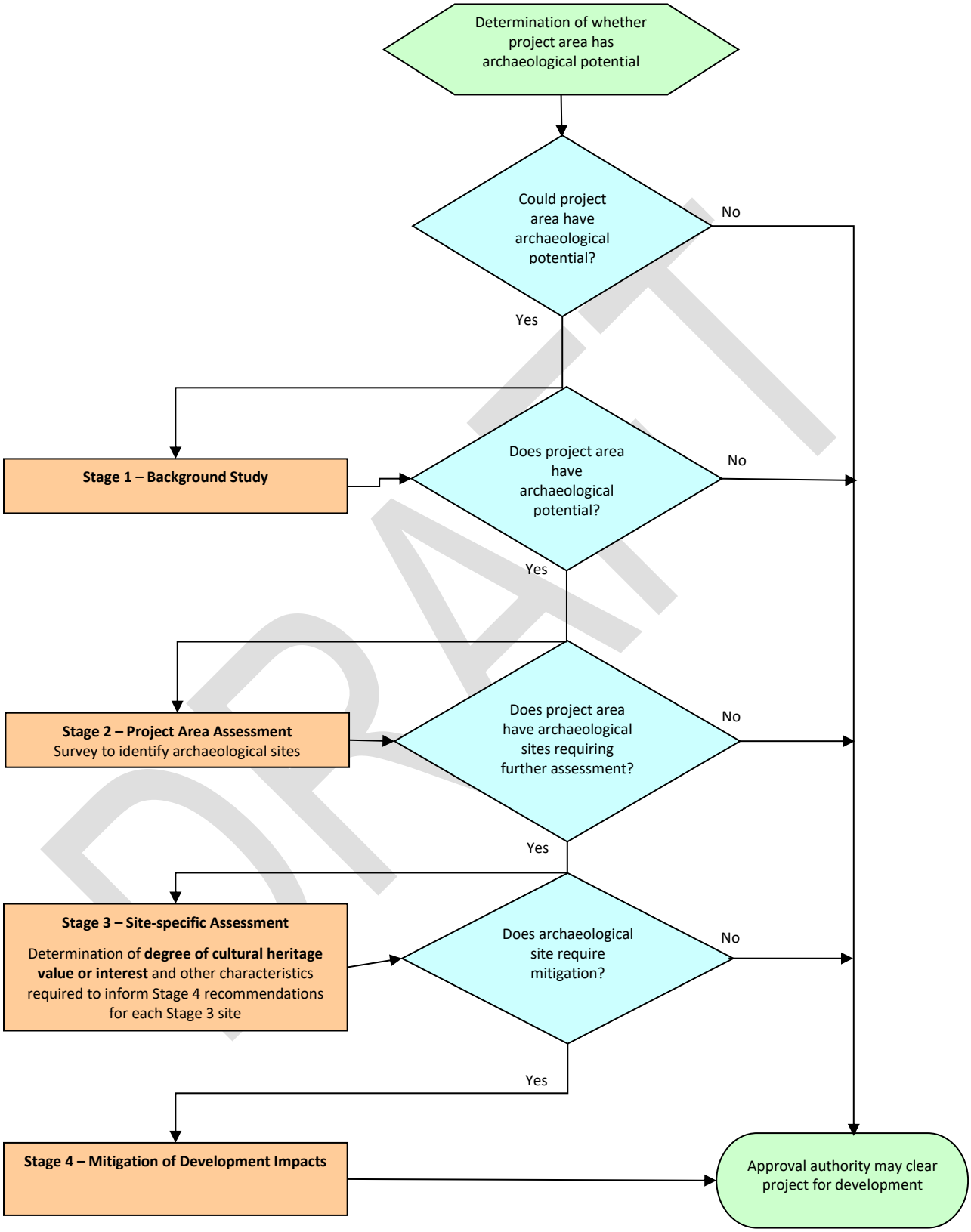
Under Section 65 of the *Ontario Heritage Act*, when so required by the Minister, licensees must file project reports with the Minister. The Ministry reviews such reports to determine whether the report complies with the standards and guidelines that are issued by the Minister and which form part of the terms and conditions of the licence issued under Part VI of the act.

After receiving a report, the Ministry will typically provide a written response. The response may advise the licensee that the report complies with the Standards and Guidelines issued by the Minister, and may further indicate that the report has been entered in the Ontario Public Register of Archaeological Reports (the Register) provided for in Section 65.1 of the *Ontario Heritage Act*. If the report does not comply with the Standards and Guidelines, the response from the Ministry may advise that the report has not been entered in the Register, and the report may be returned with a request for further archaeological fieldwork or revisions to the report. Please see the associated bulletin for further information on the Ministry's review process.

Uncovering human remains

The *Funeral, Burial and Cremation Services Act, 2002* require anyone who uncovers a burial site containing human remains to cease fieldwork or construction activities and report the discovery to the appropriate authorities (police or coroner). The terms and conditions of an archaeological licence require licensees to comply with all relevant provisions of the *Funeral, Burial and Cremation Services Act, 2002*.

Figure 1: The archaeological fieldwork process in land use planning and development



Stage 1: Background Study

Overview

Objectives
• To provide information about the project area's geography, history, previous archaeological fieldwork and current land condition • To assess in detail the project area's archaeological potential, which will support recommendations for Stage 2 survey to recommend appropriate strategies for Stage 2 survey
Background study Detailed documentary research providing a record of the project area's archaeological and land use history and present condition.
Analysis: Assessing archaeological potential The assessment will provide: • a clear description of all features of archaeological potential noted for the project area • a detailed assessment of the project area's archaeological potential

Assess archaeological potential	Recommended next step
Any part of the project area has archaeological potential	Stage 2 assessment of all of the project area
None of the project area has archaeological potential	End of assessment

Determining the Project Area

	Definitions
Project Area	The lands to be impacted by the project, e.g.: the area of a development application under the Planning Act; the area to be licensed under the Aggregate Resources Act; the area subject to physical alteration as a result of the activities associated with the project. This may comprise one or several properties, or parts of a property or several properties, and these properties may or may not be adjoining. However, all the properties must be part of one project that is being undertaken by one proponent.
Property	Section 47 of the *Ontario Heritage Act* defines "property" as "real property". "Real property" can be defined as a parcel of land or water as identified and defined through Ontario's land titles registration system.

1. The project area must include all intended and probable impacts, including but not limited to:
    a. permanent impacts such as buildings or infrastructure (e.g., roads, pipes)
    b. temporary impacts such as staging and storage areas, access roads or temporary structures.

2. When determining project area limits all relevant information must be considered, including:
    a. The applicable legislation, regulation, standards and any other direction from the approval authority
    b. The intent or purpose of the project
    c. Any direction, instruction, mapping or other information from the proponent

3. The project area must comprise one or more complete properties or all lands subject to a development application (e.g., Plan of Subdivision, Zoning Application, Aggregate Licence), with the following exceptions (see Table 1.1):
    a. Linear corridors
    b. Limited small-scale impact(s)
    c. Repeated small-scale impacts

Table 1.1 Standards for Determining Exceptions to Section 1.1, Standard 3

Project Type	Standards
Linear Corridors	1. A project area is considered a linear corridor where the project has all of the following characteristics: a. Impacts do not comprise complete properties b. Includes a continuous linear route of consistent width c. Is less than 20 m wide d. Is at least 50 times as long as it is wide
Limited Small-Scale Impacts	2. A project area is considered to have limited small-scale impacts where the project has all of the following characteristics: a. The impacts will be entirely within one property b. The property is privately owned, and the project is being carried out by the private landowner c. The project area must include all potential alterations or impacts, and a minimum 10 metre buffer that extends beyond the area of potential alterations or impacts d. The part of the property that is not included in the project area is more than 0.5 hectares e. The part of the property that includes the development impacts and 10 m buffer is 25 percent or less of the property f. The limits are defined so that no small fragments of unassessed land are created. An unassessed fragment is created when the project area limit is within 10 metres of the property limits or any other part of the project area. See Figure 1
Repeated small scale impacts	3. A project area is considered to consist of repeated small-scale impacts where the project has the following characteristics: a. Impacts involve multiple discrete locations b. Each location has impacts with approximately the same characteristics c. Each location is no more than 30 metres in diameter d. A minimum of 30 metres of no impacts separates each location

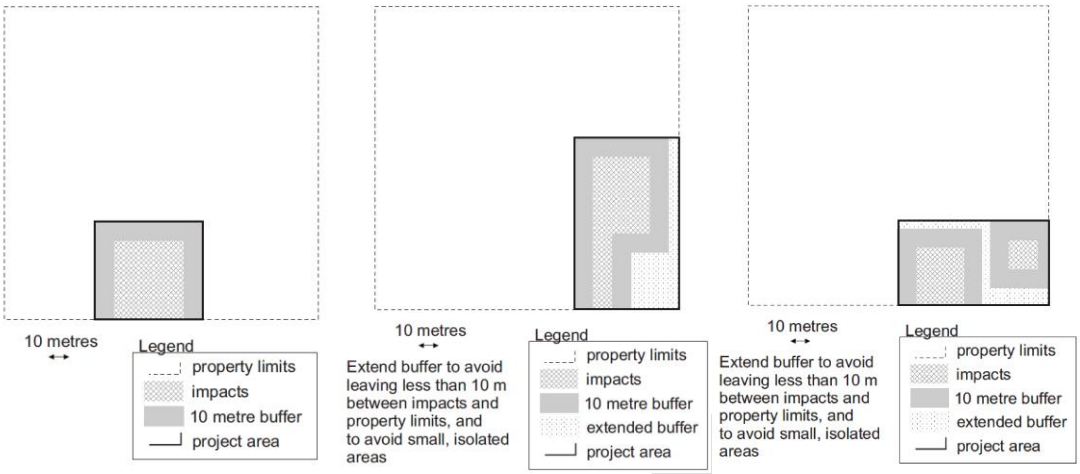


Figure 1. Left to right: Examples A-C of project area compliant with Table 1.1 Standard 2.

Background research

A background study documents the project area's archaeological and land use history and present condition.

A non-licensee may complete background research (e.g., archival research); however, the interpretation of all background research and reporting on the background study is the responsibility of the licensed consultant archaeologist.

Standards

1. The Background Study must include:
    - The most up-to-date (as of the date of submission of the Project Information Form) listing of sites from the *Ontario Archaeological Sites Database* for a radius of 1 km around the project area.
    - Information from reports of previous archaeological fieldwork within a radius of 50 m around the project area.
    - information about any archaeological sites for which any part is within 50 metres of the project area
    - topographic maps at 1:10,000 (recent and historical) or the most detailed scale available
    - historical settlement maps (e.g., historical atlas)
    - when available, aerial photographs (both recent and historical)
    - When relevant, geotechnical studies (e.g., soil studies, hydrogeological studies)
    - when available, archaeological management plans or other archaeological potential mapping
    - when relevant, information from commemorative plaques or monuments
2. Use the highest quality and most detailed mapping that is available. See Section 7.4.12.
3. For projects that will impact lands within or adjacent to a cemetery or burial:
    a. provide detailed background research to confirm if the boundaries of cemeteries are known
    b. provide the cemetery locations (information from cemetery owners/operators, archival research, information from the Bereavement Authority of Ontario, mapping, deeds, etc.) in supplementary documentation

Guidelines

1. The Background Study may also include research information from the following sources as available and relevant to the project:
    - a listing of sites from the *Ontario Archaeological Sites Database* beyond a radius of 1 km around the project area
    - reports of previous archaeological fieldwork beyond a radius of 50 m around the project area
    - information on possible traditional Indigenous use areas and sacred and other sites on or around the project area.
    - title deeds or other land registry documents
    - historical land use and ownership records (e.g., assessment rolls, census records, commercial directories)
    - individuals with oral or written information about the land use of the area (e.g., the proponent, professional and avocational archaeologists, municipal heritage planners, local residents)
    - organizations with oral or written information about the land use of the area (e.g., local museums, archaeological or historical societies)
    - primary historical document sources (e.g., diaries, manuscripts)
    - secondary historical document sources (e.g., local and regional histories, academic research)
    - municipal engineering studies and maps, municipal planning studies, or insurance and fire studies and maps

Analysis and recommendations: Assessing archaeological potential

The Stage 1 background study leads to an assessment of the project area's archaeological potential.

The licensed archaeologist will assess archaeological potential and develop subsequent recommendations based on a detailed analysis of all features present within the project area that can indicate archaeological potential.

When assessing the archaeological potential of a project area, the licensed archaeologist will not use checklists or other tools designed for nonspecialists for determining whether to trigger an assessment.

Standards

1. If the assessment indicates that there is archaeological potential anywhere within the project area, a Stage 2 assessment is required.
2. For a limited small-scale impact(s), the Stage 1 assessment of archaeological potential must include the entire property. The Stage 2 assessment may be reduced (see Table.1 Standard 2).

Guidelines

Features indicating archaeological potential

The following are features or characteristics that indicate archaeological potential:

- previously identified archaeological sites within or in close proximity to the project area
- water sources (it is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees):
    - primary water sources (lakes, rivers, streams, creeks)
    - secondary water sources (intermittent streams and creeks, springs, marshes, swamps)
    - features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches)
    - accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)
- elevated topography (e.g., eskers, drumlins, large knolls, plateaux)
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground
- distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings.
- resource areas, including:
    - food or medicinal plants (e.g., migratory routes, spawning areas, prairie)
    - scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert)
    - early Euro-Canadian industry (e.g., fur trade, logging, prospecting, mining)
- areas of early Euro-Canadian settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.
- early historical transportation routes (e.g., trails, passes, roads, railways, portage routes)
- property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial or municipal historic landmark or site

- property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations

Features indicating that archaeological potential has been removed ('disturbed')

Archaeological potential can be determined not to be present for either the entire project area or a part(s) of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. This is commonly referred to as 'disturbed' or 'disturbance', and may include:

- quarrying
- major landscaping involving grading below topsoil
- building footprints
- sewage and infrastructure development

Activities such as agricultural cultivation, gardening, minor grading and landscaping do not necessarily affect archaeological potential.

Archaeological potential is not removed where there is documented potential for deeply buried intact archaeological resources beneath land alterations, or where it cannot be clearly demonstrated through background research that there has been complete and intensive disturbance of an area. Where complete disturbance cannot be demonstrated in Stage 1, it will be necessary to undertake Stage 2 assessment (see Section 7.6.2 Standard 3 for details regarding documenting complete disturbance).

Alternatives for assessment of archaeological potential in special conditions: Canadian Shield

For the purposes of these Standards and Guidelines, the Canadian Shield is defined as the area of Ontario underlain by the Precambrian Shield. Survey areas may be reduced and recommended for alternative strategies for Stage 2 survey on the Canadian Shield according to the following standards:

Standards

3. The lands to be assessed must be demonstrated to be located on the Canadian Shield.
4. There may be small pockets (e.g., sand plains, clay plains, glacial beach ridges, etc.) that possess a higher degree of potential and differing characteristics from most of the surrounding environment that should still be considered to have potential. Where such areas of higher potential are identified, undertake a complete assessment and systematic surveys.

Guidelines

Alternatives for assessment of archaeological potential in special conditions: Remote areas

This applies when assessments of archaeological potential are being made for project areas that are remote and difficult to access. In such situations, it may be acceptable to make recommendations that project areas have low archaeological potential and will not require Stage 2 assessment under the following conditions:

Standards

1. The degree of remoteness must be documented in sufficient detail to demonstrate that there are practical obstacles to achieving access. This will be primarily a matter of distance and a lack of available transportation infrastructure (i.e., roads, trails) along with factors of visibility (e.g., forest cover). Factors relating to seasonality (e.g., snow cover, flooding) should not be a factor in demonstrating difficulties of access.
2. Aerial photos, detailed engineering plans or other detailed mapped information may be used to determine that areas are of low potential. This information must be at a scale and of a sufficiently detailed quality that allows for accurate evaluation of the presence and character of features of potential. The characteristics and quality of the sources of information (e.g., scale, source, how recently the information was acquired, general reliability) must be documented in sufficient detail to demonstrate its ability to support accurate assessment of potential.

Guidelines

Stage 2: Project Area Assessment

Overview

This stage carries out inspection to confirm potential, archaeological survey to identify any archaeological sites and makes an evaluation of whether those archaeological sites have further cultural heritage value or interest.

Objectives

- To confirm and document archaeological potential within the project area
- To document all archaeological sites within the project area
- To determine whether the project area contains archaeological sites of further cultural heritage value or interest. To recommend appropriate Stage 3 assessment strategies for identified archaeological sites

Fieldwork

- On-site identification and documentation of the geography, topography, and current conditions and to assess and map archaeological potential of the project area.
- On-site identification and documentation of all archaeological sites through systematic means as appropriate to the characteristics of the project area
- The chosen survey methods depend on project area characteristics such as the nature and extent of ground cover, the possible depth at which archaeological resources might be located, and the degree and characteristics of past disturbances. The survey consist of one or more of the following:
- Inspection: A visual inspection only and does not include excavation or collection of archaeological resources.
- Pedestrian survey: Systematic walking of open ploughed fields
- Test pit survey: Systematic walking of the project area, excavating small pits by hand at regular intervals and examining their contents, in areas where ploughing is not possible
- Mechanical excavation in deeply buried contexts: Either as directed by an archaeologist or archaeological monitoring of construction excavation as appropriate

Analysis: evaluating the cultural heritage value and interest of archaeological sites

- Analysis of data to determine the characteristics of archaeological sites found
- Measuring archaeological sites against set criteria to determine whether they have further cultural heritage value or interest requiring further assessment

Assessment results	Recommended next step
Archaeological sites with cultural heritage value or interest found in a project area	Stage 3 site-specific assessment for each archaeological site
No archaeological sites with cultural heritage value or interest found in a project area	End of assessment

Project area assessment

On-site documentation and inventory of all archaeological sites is done through systematic means as appropriate to the characteristics of the project area.

The chosen survey methods depend on project area characteristics such as the nature and extent of ground cover, the possible depth at which an archaeological site may be located and the degree and characteristics of past disturbances.

Standards

1. Inspect all parts of the project area to confirm Stage 1 assessment of archaeological potential. Document all areas of low potential through mapping and photography.
2. Survey all parts of the project area with archaeological potential.
3. Survey must include lands immediately adjacent to built structures (both intact and ruins).
4. Survey is not required for areas documented as:
    a. permanently wet
    b. exposed bedrock
    c. steep slopes (greater than 20°) except in locations likely to contain pictographs or petroglyphs
    d. having no or low potential based on the Stage 2 identification of extensive and deep land alteration that has severely damaged the integrity of archaeological resources as further discussed in Section 1.3.2
    e. recommended to not require Stage 2 assessment by a Stage 1 report, where the Ministry has accepted the Stage 1 report into the Register.
    f. designated for forest management activity without potential for impacts to archaeological sites, as determined through the Stage 1 forest management plans process (see *Forestry Operations on Crownland Bulletin*)
    g. having archaeological potential but no impacts will result from the project, and where the following criteria are met:
        i. The approval authority provides written confirmation by letter that the approval of the development application will not authorize any impacts within that part, and
        ii. The part is intended to be transferred to a public body and that public body provides written confirmation by letter recognizing that the part has archaeological potential and further confirming that any future development will be preceded by archaeological assessment
5. Survey the project area when weather and lighting conditions permit good visibility of land features. Do not survey when weather and lighting conditions (e.g., snow cover, frozen ground, conditions of excessive rain or drought, heavy fog) reduce the chance of finding evidence of archaeological resources.

Guidelines

1. When permanent fixed reference landmarks (e.g., Ontario Land Surveyor benchmarks, standard iron bars) are present, it is acceptable to record the locations required by Standard 4 of this section using methods such as total station, transit and tape, or stadia rod. The minimum GNSS readings required in section 5 must still be taken.
2. Fieldwork may include the use of geophysical survey methods to assist in the identification of archaeological resources. Such methods may be used to supplement other methods of survey, but not as an alternative.

6. Using the Global Navigation Satellite System (GNSS) according to the requirements set out in Section 5, record the locations of the following:
    a. all diagnostic artifacts
    b. sufficient surface artifact find locations, positive test pit locations, or limits of deeply buried artifact finds to provide an estimate of the limits of the archaeological site
    c. all fixed reference landmarks
7. Map all field activities (e.g., extent and location of survey methods, survey intervals) in reference to fixed landmarks, survey stakes and development markers. Mapping must be accurate to 5 m or to the best scale available. Use any mapping system that achieves this accuracy.
8. Photo-document examples of all field conditions encountered (e.g., ploughed field, pasture or woodlot, disturbances).
9. Do not use heavy machinery (e.g., gas-powered augers, backhoes) to remove soil, except when removing sterile or recent fill covering areas where it has been determined that there is the potential for deeply buried or sealed archaeological sites (e.g., in urban areas, floodplains).

Inspection

Standards

1. Inspect the entire project area and its periphery. The inspection may be either systematic (e.g., every 30 m) or random spot-checking. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential.

2. Inspect the project area when weather conditions permit good visibility of land features. Do not inspect when weather conditions (e.g., snow cover, frozen ground, excessive rain or drought) may reduce the chances of observing features of archaeological potential.

3. Confirm that previously identified features of archaeological potential are present where they were previously identified, e.g.:

- watercourses are present where mapped and are not artificial or altered
- land formations are natural and not artificial

4. Identify and document additional features of archaeological potential not visible on mapping, e.g.:

- knolls, ridges or plateaux too small to show on large-scale topographic maps
- relic water channels
- glacial shorelines
- patches of well-drained soils in areas of heavy soil
- slightly elevated areas in low and wet areas

5. Identify and document features that will affect assessment strategies, e.g.:

- woodlots
- small bogs, swamps or permanently wet areas
- steeper grade than indicated on maps
- overgrown vegetation that does not allow ploughing
- heavier soils than expected
- recent land disturbances such as regrading, depositing fill or clearing vegetation

Guidelines

Pedestrian survey

This survey method involves systematically walking the project area, mapping and collecting artifacts found on the ground surface.

Standards

1. Any actively or previously cultivated land where ploughing is possible or viable must be subject to pedestrian survey.
2. Land to be surveyed must be recently ploughed. Use of chisel ploughs is not acceptable. In heavy clay soils ensure furrows are disked after ploughing to break them up further.
3. Land to be surveyed must be weathered by one heavy rainfall or several light rains to improve the visibility of archaeological resources.
4. Provide direction to the contractor undertaking the ploughing to plough deep enough to provide total topsoil exposure, but not deeper than previous ploughing.
5. At least 80% of the ploughed ground surface must be visible. If surface visibility is below 80% (e.g., due to crop stubble, weeds, young crop growth), ensure the land is re-ploughed and weathered before surveying.
6. Space survey transects at maximum intervals of 5 m (20 survey transects per hectare).
7. When archaeological site are found, decrease survey transects to 1 m intervals over a minimum of a 20 m radius around the find to determine whether it is an isolated find or part of a larger scatter. Continue working outward at this interval until the full extent of the surface scatter has been defined.
8. Collect all formal artifact types and diagnostic categories. For 19th century archaeological sites, also collect all refined ceramic sherds (or, for larger sites collect a sufficient sample to form the basis for accurate dating).

Guidelines

1. For orchards, vineyards or comparable situations where the open space to be ploughed between plants measures more than 5 m, strip-ploughing is an acceptable alternative to full ploughing.
2. When appropriate based on crop conditions, (e.g., corn fields where herbicides have prevented weed growth, young winter wheat without weed growth between the rows), survey transects at intervals of less than 5 m may be used to achieve the minimum 80% visibility.
3. Stage 3 controlled surface pick-up (CSP) may be completed during Stage 2, following Section 3.2.1

Test pit survey

This survey method involves systematically walking the project area along regularly spaced transects, excavating small pits by hand at regular intervals and examining their contents.

Standards

1. Test pit survey only on terrain where ploughing is not possible or viable, as in the following examples:
    a. wooded areas
    b. pasture with high rock content
    c. abandoned farmland with heavy brush and weed growth
    d. orchards and vineyards that cannot be strip-ploughed (planted in rows 5 m apart or less), gardens, parkland or lawns, any of which will remain in use for several years after the survey
    e. properties where existing landscaping or infrastructure would be damaged. The presence of such obstacles must be documented in sufficient detail to demonstrate that ploughing or cultivation is not viable.
    f. narrow (10 m or less) linear survey corridors (e.g., water or gas pipelines, road widening). This includes situations where there are planned impacts 10 m or less beyond the previously impacted limits on both sides of an existing linear corridor (e.g., two linear survey corridors on either side of an existing roadway). Where at the time of fieldwork the lands within the linear corridor meet the standards as stated under the above section on pedestrian survey land preparation, pedestrian survey must be carried out.
2. Space test pits at maximum intervals of 5 m (400 test pits per hectare) in areas less than 300 m from any feature of archaeological potential.
3. Space test pits at maximum intervals of 10 m (100 test pits per hectare) in areas more than 300 m from any feature of archaeological potential.
4. Test pit to within 1 m of built structures (both intact and ruins), or until test pits show evidence of recent ground disturbance.
5. Ensure that test pits are at least 30 cm in diameter.
6. Excavate each test pit, by hand, into the first 5 cm of subsoil and examine the pit for stratigraphy, cultural features, or evidence of fill.
7. Screen soil through mesh no greater than 6 mm.
8. Collect all artifacts according to their associated test pit.
9. Backfill all test pits unless instructed not to by the landowner.

Guidelines

1. While maintaining standard survey grids as closely as possible, the consultant archaeologist may vary from standard survey grids as necessary, based on professional judgment. Document and explain the rationale for all variations in the Stage 2 report.
2. Randomly spaced or clustered test pits may be excavated in addition to, but not instead of, standard transects.
3. Pedestrian survey may augment test pit survey in pockets of land that can be ploughed to the required standards.
4. It is not necessary to document the characteristics or locations of individual negative test pits. For negative test pits, only document the extent negative test pits within the surveyed area.

Test pit survey – when archaeological sites are identified

The initial finds of archaeological sites through test pitting may be insufficient to make it clear that a Stage 3 archaeological assessment is necessary, and it may therefore be desirable to carry out further work within Stage 2 rather than proceeding to Stage 3. If that is the case, the following requirements must be met in determining whether a Stage 3 should be carried out.

Standards

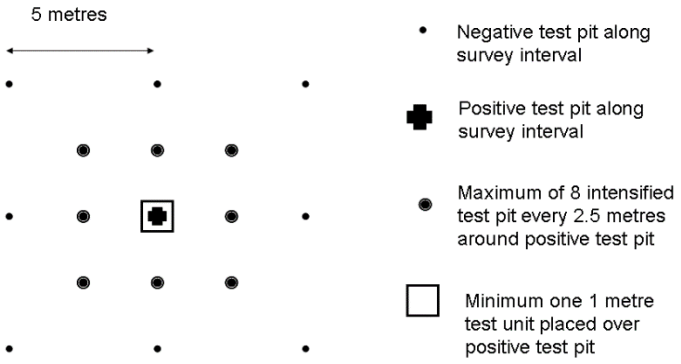
1. Continue test pit excavation on the survey grid to determine whether there are further positive test pits. This may produce sufficient artifacts or other evidence to meet the criteria for making a recommendation to carry out a Stage 3 assessment, in which case do not carry out further test pit survey on the site.
2. When insufficient artifacts or other evidence are found through continued survey on the grid to meet the criteria for continuing to Stage 3, intensify survey coverage around the positive test pit to determine whether a recommendation for a Stage 3 assessment can be supported. Use one of the following strategies (**Option A or B**):

   Option A: See figure below. Reduce the distance between test pits to a maximum of 2.5 m within a radius of 5 m around the positive test pit.

   Excavate:

   a. a maximum of eight additional test pits within this intensified area, ***and***

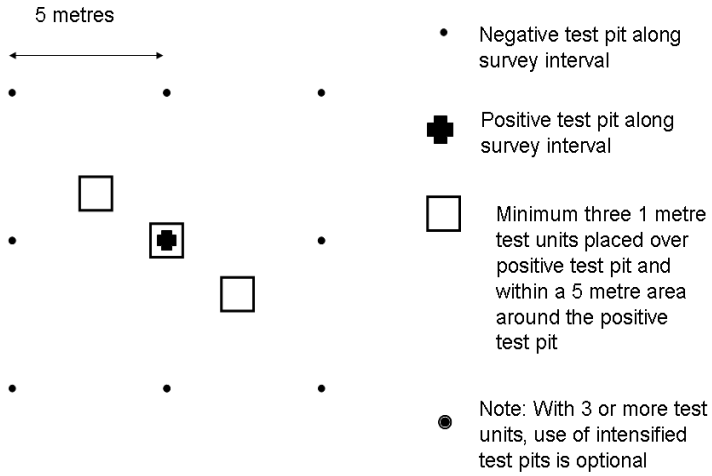
   b. one or more 1 m test units, placing at least one unit over the positive test pit (see section 3 *Stage 3: Site-specific Assessment* for test unit standards and guidelines).



   Option B: See figure below. Excavate additional 1 m test units, as required, within 5 m of the positive test pit. If excavating three or more 1 m test units, intensified test pitting may be omitted.

Guidelines

1. Stage 2 assessment around a positive test pit may be done using the described strategies or a recommendation may be made on the basis of professional judgment to proceed directly to a Stage 3 assessment.



d. If the area for test pit survey was reduced in Stage 1 under a special condition, and if archaeological resources are found during test pit survey within 50 m of an area recommended for exemption under that special condition, survey must be extended into the exempted area until survey has extended at least 50 m from the positive test pit.

Alternative strategies for special survey conditions: Test pit survey in northern Ontario and on Canadian Shield terrain

As an alternative to general test pit survey standards 1 and 2, a modified test pit survey strategy may be used for northern Ontario and Canadian Shield terrain:

Standards

1. Where the identified feature of archaeological potential is a modern water source, test pitting is required between 0 and 50 m from the feature. Space test pits at maximum intervals of 5 m. Survey is not required beyond 50 m.
2. For features of archaeological potential other than modern water sources (e.g., historic water sources such as glacial shorelines), test pitting is required as follows:
    a. space test pits at maximum intervals of 5 m between 0 and 50 m from the feature of archaeological potential
    b. space test pits at maximum intervals of 10 m between 50 and 150 m from the feature of archaeological potential
    c. survey is not required beyond 150 m
3. While maintaining standard survey grids as closely as possible, the consultant archaeologist may vary from standard survey grids as necessary, based on professional judgment. Document and explain the rationale for all variations in the Stage 2 report.

Guidelines

1. Clustered test pits may be used to survey small areas of archaeological potential located in areas otherwise determined to be of low archaeological potential.

Alternative strategies for special survey conditions: Test pit survey in areas with complex combinations of archaeological potential

In the course of surveying areas previously identified as having archaeological potential, the consultant archaeologist may determine that an area consists of a complex combination of land conditions such that there are small areas of archaeological potential intermixed with areas of low potential. Examples include small pockets of soil scattered throughout a broader bare limestone plain, or dry areas scattered throughout broader wetlands. These small areas of archaeological potential must be surveyed, but it may not be possible to maintain a regular test pit grid or provide precise mapping of all the surveyed areas.

Standards

1. Survey all parts of these areas that are determined to have archaeological potential using standard test pit survey intervals.
    - While maintaining standard survey grids as closely as possible, the consultant archaeologist may vary from standard survey grids as necessary, based on professional judgment. Document and explain the rationale for all variations in the Stage 2 report.
2. Record surveyed areas and areas of low potential not surveyed to the greatest degree of precision possible given the available base mapping.
    - Based on professional judgment, the consultant archaeologist may map an area containing complex combinations of conditions as one unit. Where this approach is followed, record the characteristics of the area through photographs and detailed written field notes (e.g., percentages of different physical features and areas of potential, percentages surveyed and not surveyed, degree of variation within the area).

Guidelines

Survey in deeply buried conditions

In urban and brownfield properties, on floodplains, or where soil or sediments have been deposited in the past, original ground surfaces may be deeply buried, and the sequence of deposition is often complex. These conditions require modified survey procedures to reduce the potential of damage to intact archaeological sites.

Where archaeological sites are identified in these conditions, it will often be most practical to proceed immediately to Stage 3. In some cases, however, the methods used in Stage 2 will be sufficient to accomplish the objectives of Stage 3, in which case the Stage 2 work may be deemed to have accomplished Stage 3 assessment.

Standards

1. Survey strategies must be designed to be most effective in identifying potential archaeological resources (e.g., ensure that excavation covers all areas identified in Stage 1 as possessing historic structures, or ensure that buried natural soil horizons are fully investigated).
2. For properties where there is the potential for both deeply buried archaeological sites and for archaeological sites to be present near the surface, and where it is viable to carry out surface survey methods (i.e., pedestrian survey or test pitting), survey of the upper layers to identify any archaeological sites and to determine the extent and degree of disturbance must be carried out prior to using more invasive methods such as backhoe trenching.
3. Use backhoes or equivalent heavy excavating machinery instead of shovels when deep subsurface excavation is necessary to verify the presence of and to assess deeply buried archaeological resources. Excavate trenches within the core of the planned development area and over any areas of archaeological potential:
    a. at maximum intervals of 10 m within those areas
    b. to obtain sections and clear profiles of those areas
4. If other techniques have not made a conclusive determination regarding the presence of deeply buried archaeological sites expected as a result of Stage 1assessment, the consultant archaeologist must monitor excavation and the removal of fill as follows:
    a. Conduct on-site monitoring where and when work is proceeding in areas where archaeological sites are predicted to exist, or where construction excavation is extending to a depth that warrants concern. (On-site monitoring may not be required across the entire development site or at all times during construction.)
    b. Prepare, in consultation with the proponent and contractors, a contingency plan outlining procedures, documentation, and time requirements in the event that archaeological sites are exposed.

Guidelines

1. Obtain technical advice as appropriate to the type of deeply buried context. For example, where buried geomorphological features may be encountered, obtain advice from a geoarchaeologist, geomorphologist or soil expert.
2. When conditions make it impractical or ineffective to use backhoes or equivalent heavy excavating machinery, use appropriate alternative means such as:
    a. hydraulically activated coring as a means of assessing stratigraphy
    b. augering as a means of recovering archaeological materials in specific strata that have been identified by coring

c. Recover all diagnostic artifacts related to the archaeological site of cultural heritage value or interest that are exposed during monitoring. Do not recover diagnostic artifacts related to 'fill'.

5. If an archaeological site (i.e., artifacts or features possessing sufficient cultural heritage value or interest to support a recommendation to proceed to Stage 3) is uncovered or affected, construction and monitoring activities must cease in that location.

Survey to confirm previous disturbance

A combination of inspection and test pitting may be used when initial Stage 2 results determine that all or part of the project area may in fact be disturbed. The Stage 2 survey may then consist of a detailed inspection, combined with test pitting.

Note that this strategy is not acceptable for project areas where there is any potential for deeply buried archaeological sites such as those in many urban and brownfield properties or in floodplains.

Standards

1. Inspect and document the disturbed areas according to the standards for inspections.
2. Place test pits throughout the disturbed areas (as defined by the inspection and where physically viable) to confirm that these areas have been completely disturbed.

Guidelines

Survey of undisturbed forest floors

Test pit excavation can be difficult or impossible in undisturbed forest floors that exhibit shallow soil horizons. In these conditions, archaeological sites are often visible to surface inspection only once vegetation is cleared. This method may be used at the discretion of the licensed archaeologist in either Stage 2 or 3, as appropriate.

Standards

1. Carry out surface inspection of the forest floor in addition to test pit survey, as appropriate.
2. If soil horizons are absent or very thin, conduct a surface inspection of the forest floor as an alternative to a test pit survey.
3. When clearing vegetation for surface inspection:
   a. Use a soft-toothed leaf rake.
   b. Clear areas at least 2 m in diameter, spaced at no more than 5 m intervals between the centres of cleared areas.
   c. When live vegetation cover is dense, augment raking with close ("hands and knees") visual inspections.
   d. When archaeological resources are found, clear a 10 m square centred on the positive cleared area. If positive cleared areas continue beyond this area, resume clearing 2 m areas at 5 m intervals, noting where the positive cleared areas end.

Guidelines

Determining the limits of archaeological sites and evaluating whether there is further Cultural Heritage Value or Interest

When determining whether archaeological sites require Stage 3 assessment, bear in mind that Indigenous communities may have an interest in the identification of all Indigenous archaeological sites that may be affected. Where a consultant archaeologist assesses an Indigenous archaeological site as meeting the criteria for Stage 3 and as clearly having cultural heritage value or interest, with a high potential to go to Stage 4, informing interested Indigenous communities at the end of Stage 2 is a recommended first step toward preparing for their engagement in Stage 3. Early engagement with relevant Indigenous communities is strongly recommended. For more information, see the draft bulletin on *Engaging Aboriginal Communities in Archaeology*.

Limits of archaeological sites

Standards

1. The limits of the archaeological site must include all identified artifacts.
2. Any artifacts that are located less that 20 metres apart must be considered part of one archaeological site.

Guidelines

Evaluating further Cultural Heritage Value or Interest

Standards

1. Artifacts, groups of artifacts or archaeological sites meeting the following criteria must be recommended to have further cultural heritage value or interest and require Stage 3 assessment:
   a. pre-contact diagnostic artifacts or a concentration of artifacts (or both):
      i within a 10 m by 10 m pedestrian survey area:
         (1) at least one diagnostic artifact or fire-cracked rock in addition to two or more non-diagnostic artifacts
         (2) in areas east or north of the Niagara Escarpment, at least five non-diagnostic artifacts
         (3) in areas on or west of the Niagara Escarpment, at least 10 non-diagnostic artifacts
      ii within a 10 m by 10 m test pit survey area:
         (1) at least one diagnostic artifact from combined test pit and test unit excavations
         (2) at least five non-diagnostic artifacts from combined test pit and test unit excavations
   b. single examples of artifacts of special interest:
      i Indigenous ceramics
      ii exotic or period-specific cherts
      iii an isolated Paleo-Indian or Early Archaic diagnostic artifact
   c. post-contact archaeological sites containing at least 20 artifacts that date the period of use to before 1900. (Further guidance for evaluating the potential cultural heritage value or interest of post-1830 Euro-Canadian domestic sites is provided in 3 *Stage 3: Site-Specific Assessment.*)
   d. twentieth century archaeological sites, where background documentation or archaeological features indicate possible cultural heritage value or interest

Guidelines

1. The licensed consultant archaeologist may engage with relevant Indigenous communities to determine their interest (general or site-specific) in the Indigenous archaeological sites found during Stage 2 and to ensure there are no unaddressed Indigenous archaeological interests connected with the land surveyed or sites identified.
2. Based on professional judgment, the licensed consultant archaeologist may recommend Stage 3 archaeological assessment for archaeological sites even if they do not meet the above criteria.
3. Using professional judgment, the licensed consultant archaeologist may determine on a case-by-case basis whether concentrations of five to nine non-diagnostic artifacts found in areas on or west of the Niagara Escarpment require Stage 3.

Where a cemetery or an archaeological site with cultural heritage value or interest is known to be located immediately adjacent to the project area that has been surveyed, Stage 3 assessment to confirm whether that cemetery or archaeological site extends into the project area under assessment may be recommended. The Stage 3 archaeological assessment may be recommended regardless of whether artifacts were recovered by the Stage 2 survey in the part of the project area adjacent to that cemetery or archaeological site.

e. the presence of human remains

When archaeological sites are identified

Under the *Ontario Heritage Act* in accordance with subsections 48 (1) and 48 (3) a known archaeological site must not be altered until such time as archaeological fieldwork has taken place by a licensee and an archaeological report is submitted by the licensee to the Minister stating the site has no further cultural heritage value or interest and the report is entered into the *Ontario Public Register of Archaeological Reports* (the Register)

Standards

1. For all archaeological sites, initial site information must be submitted within the time period prescribed by the Ministry. The site information must include:
   a. preliminary estimated time period and site type, and
   b. preliminary location information (see Section 5), and
   c. preliminary mapping of site limits and 50m buffer.

Guidelines

Related sections

1	Stage 1: Background Study
3	Stage 3: Site-specific Assessment
5	Geospatial Data Documentation
7.7	Project reports: Stage 2

Stage 3: Site-specific Assessment

Overview

The purpose of Stage 3 is to evaluate the cultural heritage value or interest of each archaeological site identified in Stage 2, to determine whether it has been sufficiently documented or further measures are required to protect or document the site fully.

Objectives

- To determine the extent of the archaeological site and the characteristics of the artifacts
- To collect a representative sample of artifacts
- To evaluate the cultural heritage value or interest of the archaeological site
- To determine the need for mitigation of development impacts and recommend appropriate strategies for mitigation and future conservation

Historical documentation

- Detailed documentary research of the land use and occupation history specific to the archaeological site, when available
- Supplements the Stage 1 background study

Archaeological site assessment

- Archaeological fieldwork to gather data from each archaeological site identified in Stage 2 as having cultural heritage value or interest
- Assessment methods depend on field conditions, methods used in the Stage 2 survey, and the type of archaeological site:

Controlled surface pick-up (CSP)	• An examination of the archaeological site's ground surface, mapping and collecting artifacts on the surface • For open ploughed fields where archaeological sites were discovered through Stage 2 pedestrian survey
Test unit excavation	• Controlled excavation of 1 m square test units, in selected locations, to • determine the presence of buried artifacts, structures, stratigraphy and cultural features and • collect a representative sample of artifacts • Done as follow-up to CSP and for archaeological sites discovered through Stage 2 test pit survey

Analysis: Evaluating cultural heritage value or interest

- Analysis of the data and artifacts to evaluate the archaeological site's cultural heritage value or interest in order to determine the need for mitigation of development impacts

Evaluated cultural heritage value or interest	Recommended next step
The archaeological site has cultural heritage value or interest requiring mitigation of development impacts	Stage 4 mitigation of development impacts through avoidance and protection or excavation
The cultural heritage value or interest of the archaeological site has been sufficiently documented or mitigated	Fieldwork and documentation complete – no further fieldwork or mitigation of development impacts required

Historical documentation

When historical documentation is available, detailed documentary research of the land use and occupation history specific to the archaeological site is required. This research supplements the Stage 1 background study done for the project area.

Standards

1. Research the following information sources when available and relevant to the archaeological site:
    a. features or information identifying an archaeological site as sacred to Indigenous communities
    b. individuals or communities with oral or written information about the archaeological site (e.g., Indigenous communities, the proponent, professional and avocational archaeologists, local residents)
    c. historical settlement maps
    d. land titles or records, land registry documents
    e. historical land use and ownership records (e.g., assessment rolls, census records, Indigenous land use records, commercial directories)
    f. primary historical document sources (e.g., diaries, manuscripts)
    g. secondary historical document sources (e.g., local and regional histories, academic research)

Guidelines

1. Research other information sources as deemed relevant by professional judgment.

Archaeological site assessment

Archaeological site assessment consists of archaeological fieldwork to gather data from each archaeological site identified in Stage 2 as having cultural heritage value or interest. Where appropriate, controlled surface pick-up (CSP) is carried out first. The assessment must always include test unit excavation. The use of CSP and the number and placement of test units will depend on field conditions, methods used in the Stage 2 survey, and the type of archaeological site.

Standards

1. Before carrying out fieldwork, review (when available) all relevant reports of previous fieldwork on the archaeological site or for that project area.
2. Carry out the archaeological site assessment when weather and lighting conditions permit good visibility of all parts of the archaeological site. Do not carry out the archaeological site assessment when weather and lighting conditions (e.g., snow cover, frozen ground, excessive rain or drought, heavy fog) reduce the ability to identify and document any part of the archaeological site.
3. Using the Global Navigation Satellite System (GNSS) according to the requirements set out in section 5, record the location of a permanent datum that can be tied to a development map.
4. Provide representative photographs of all field conditions (e.g., ploughed field, pasture or woodlot, disturbances).

Guidelines

1. Fieldwork may include the use of geophysical methods to support site interpretations and recommendations for Stage 4 mitigation strategies.

Controlled surface pick-up (CSP)

Controlled surface pick-up (or collection) consists of further detailed survey of the ground surface of the archaeological site to locate, map and collect artifacts on the surface. This method is used in open ploughed fields where archaeological sites were documented through a pedestrian survey. The goal of a CSP is to gather information that will assist in documenting the characteristics and extent of the archaeological site.

Standards

1. If ground surface visibility has decreased in the time between the Stage 2 survey and the Stage 3 CSP, ensure that the site area is re-cultivated and weathered, following the standards set out for pedestrian survey in 2: *Stage 2: Project Area Assessment.*
2. Accurately map the location of all artifacts on the ground surface using a total station, transit and tape, stadia rod, or GNSS unit. Record and catalogue artifacts by their mapped location, recording any relevant information (e.g., spatial relationship of diagnostics, artifact concentration areas). Tie this map to the general site GNSS readings by recording a central point in the scatter.
3. For very large and dense surface scatters, conduct a full CSP by grid units (maximum 5 m by 5 m units) over the archaeological site. Record and catalogue artifacts with their grid unit designation.
4. Ensure that the type and number of artifacts collected allow for a comprehensive analysis of the archaeological site (e.g., to conduct further assessment, define a protected area or conduct excavation).
5. Collect all formal artifact types and diagnostic categories, including, for 19th century archaeological sites, all refined ceramic sherds.
6. Collect a representative sample of non-diagnostic artifacts, taking into consideration the archaeological site type, type and frequency of non-diagnostic artifacts, and the likelihood that further fieldwork will be required.

Guidelines

1. In some cases, no artifacts are recovered through an initial CSP, despite the site having previously been recommended for Stage 3. Based on professional judgment, the consultant archaeologist may proceed to verify that the previously identified site has been adequately addressed by doing the following:
   a. Allow further weathering and conduct a second CSP. The second CSP should account for possible errors in the Stage 2 recording of the site location.
   b. Where no artifacts are recovered by the second CSP, excavate five or more test units focused as closely as possible on the location recorded for the archaeological site in Stage 2.

Test unit excavation

The purpose is to use controlled and systematic excavation to document the presence and extent of buried artifacts, structures, stratigraphy and cultural features, and to collect a representative sample of artifacts, across the entire archaeological site.

Standards

1. Excavate by 1 m square units.
2. To determine the placement of test units, establish a grid on the site based on the permanent datum to at least the accuracy of transit and tape measurements. Placing test units in unmeasured, estimated locations is not acceptable.
3. Excavate test units by hand. Do not use heavy machinery (e.g., gas-powered augers, backhoes) except to remove sterile or recent fill covering confirmed, deeply buried or sealed archaeological sites (e.g., in urban areas, floodplains).
4. Excavate test units by systematic levels (stratigraphic or standardized).
5. Excavate test units into the first 5 cm of subsoil, unless excavation uncovers a cultural feature.
6. If test unit excavation uncovers a cultural feature, do not excavate into feature fill. Instead:
    a. Record the exposed plan of the feature.
    b. Place geotextile fabric over the unit floor and backfill the unit.
7. Screen all excavated soil through mesh with an aperture of no greater than 6 mm. For confirmed single component Paleo-Indian and Early Archaic archaeological sites, for a sample of units (at least 20% of the total number of units in sandy soil and at least 10% of the total number of units in heavy soil), screen the entire contents of each unit through mesh with an aperture of no greater than 3 mm.
8. Unless otherwise specified in Tables 6.1 and 6.2 in section 6, or in the site-specific requirements stated in section 4.2, collect and retain all artifacts. Record and catalogue them by their corresponding grid unit designation.

Guidelines

1. Based on the consultant archaeologist's professional judgment, when the site type indicates that artifacts measuring less than 6 mm may be present (e.g., very small lithic flakes, seed beads) and should be recovered, some or all excavated soil may be screened through 3 mm mesh or water screened.
2. Very heavy soils may be water screened.
3. Based on the consultant archaeologist's professional judgment that the information is required to inform Stage 3 recommendations, exposed cultural features may be excavated, provided that both of the following conditions are met:
    a. All test units over the cultural features are first excavated to expose the complete plan of the features. This is not applicable to deeply buried deposits.
    b. The cultural features are excavated to Stage 4 excavation standards (see section 4.2 Approach 2: Excavation).

Determining the location and number of test units

The location and number of test units required varies depending on the type of site. Standards for the most common types of archaeological sites are shown in Table 3.1.

The objectives of a test unit placement strategy are to:

- provide a uniform level of data collection from across the site
- focus testing on key areas (e.g., site core, site periphery, areas of lower artifact concentration, isolated concentrations of diagnostics or classes of artifacts), as deemed appropriate based on professional judgment

- gather a representative artifact sample from across the site
- determine the nature of subsurface deposits
- determine the extent of the archaeological site
- support the recommendations for Stage 4 mitigation strategies

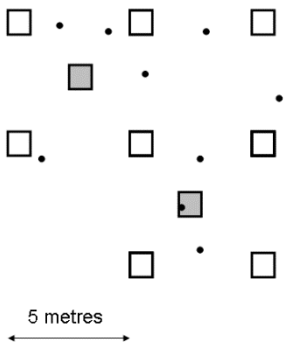
Standards

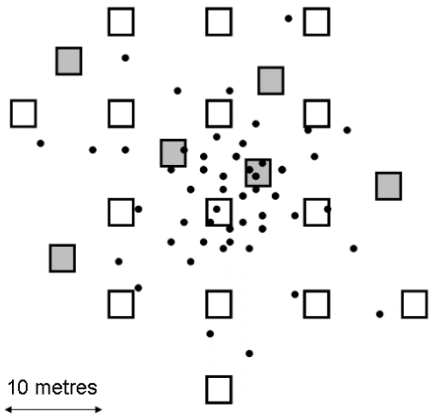
1. Use Table 3.1 to determine the location and number of test units appropriate to the site type.

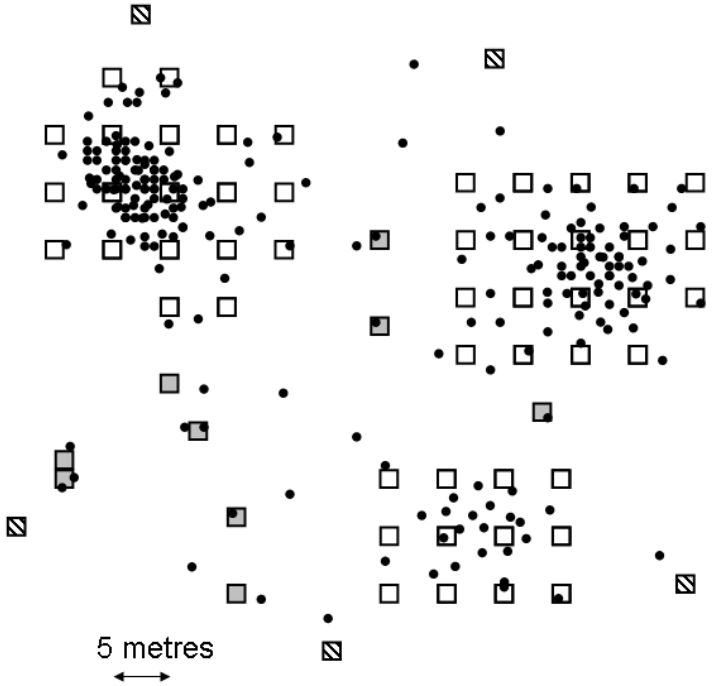
Guidelines

1. The limits of the area of the archaeological site may be established through the achievement of sterile test units (yielding no artifacts or cultural features) or may be established at an earlier point using professional judgment based on:
   a. permanent physical constraints of a natural form (e.g., river edge, cliff edge) or cultural form (e.g., road, building)
   b. repetitive low yields on the periphery of the site
   c. typical characteristics of sites within the same region
   d. typical characteristics of sites of a similar type as documented through the archaeological literature

Table 3.1 Standards for determining the location and number of test units

Site type	Test unit strategy - Standards
Small pre-contact and post-contact sites where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4	1. Place and excavate 1 m square test units in a 5 m grid across the site (white squares below). 2. Place and excavate additional test units, amounting to 20% of the grid unit total (e.g., if the grid has 40 units, an additional 8 units), focusing on areas of interest within the site extent (such as distinct areas of higher concentrations within a broader artifact concentration or adjacent to high-yield units (shaded squares)). 
Small pre-contact and post-contact sites where it is clearly evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4	3. Place and excavate 1 m square units in a 10 m grid across the site (white squares below). 4. Place and excavate additional units, amounting to 40% of the initial grid unit total (e.g., if the initial grid has 40 units, an additional 16 units), focusing on areas of interest within the site extent (such as distinct areas of higher concentrations within a broader artifact concentration, or adjacent to high-yield units (shaded squares)).

Site type	Test unit strategy - Standards
	
Plough-disturbed, large, multi- or single-component lithic scatters	5. Place multiple grids over areas of artifact concentration (e.g., greater surface densities of artifacts, concentrations of diagnostics, apparent single-component concentrations, defined activity areas) and excavate 1 m square test units across those grids at 5 m intervals (white squares below). 6. Place and excavate additional test units, amounting to 20% of the initial grid unit total (e.g., if the initial grid has 40 units, an additional 8 units), between the areas of concentration to document areas of lower concentration (shaded squares). 7. Place and excavate further additional units, amounting to 10% of the initial grid unit total (e.g., if the initial grid is 40 units, an additional 4 units), on the periphery of the surface scatter to determine the site extent and sample the site periphery (hatched squares).

Site type	Test unit strategy - Standards
	
Large multi- or single-component lithic scatters found solely through a test pit survey	8. Place and excavate 1 m square test units in a 10 m grid across the site. 9. Place and excavate additional test units, amounting to 40% of the initial grid unit total (e.g., if initial grid is 40 units, an additional 16 units), focused in areas of interest within the site extent (such as small artifact concentrations or adjacent to high-yield units).
Woodland village sites	10. Place multiple grids, over all areas of artifact concentration indicating possible plough-disturbed middens. Excavate 1 m square test units across those grids at 5 m intervals. 11. Place and excavate an equal number of additional test units (e.g., if the grids over middens total 40 units, an additional 40 units) across the remainder of the site, either in a systematic grid or in focused areas, to recover a sample of topsoil deposits. 12. See section 3.3.2 *Alternative Strategies: Large Woodland villages* regarding test unit strategies for further information on defining the extent of this type of site.
Intact sites found in undisturbed contexts	13. Place and excavate 1 m square test units in a 5 m grid across the site. 14. In order to define site extent, place and excavate at least three adjacent test units along each grid line until yields of five or fewer artifacts are obtained for each test unit.
Other contexts (e.g., 19th century villages, industrial complexes)	15. Place and excavate 1 m square test units according to a strategy that balances systematic and focused test excavation across the site.

Alternative strategies for special conditions

Large sites

For some large sites, it may be possible to recover enough information to determine the site characteristics and support recommendations for appropriate Stage 4 mitigation strategies before all test units within the standardized grids have been completed.

Do not use this approach for plough-disturbed lithic scatters where the extent of the grid is already limited to areas of surface concentration.

Standards

1. Test unit excavations may be discontinued if all information required to fully inform recommendations for Stage 4 mitigation of impacts has been collected and the following minimum level of work has been completed:
    a. at least 50% of the units that should be excavated based on Table 3.1 have been excavated
    b. grid units have been excavated around the entire site extent, confirming the limits of the site
    c. at least 50% of the additional "infill" units have been excavated
    d. test units have been excavated within all concentrations of artifacts identified through test pit survey

Guidelines

Large Woodland villages

The test unit strategies in Table 3.1 may not be sufficient to accurately define the extent of large Woodland village sites, since there may often not be a close correspondence between the artifact scatter and the underlying settlement pattern surviving in the subsoil.

To help define the extent of a Woodland village, mechanical topsoil removal may be used as a method to excavate test trenches beyond the archaeological site limits established by surface artifact scatter and positive test units. (See section 4.2 *Approach 2: Excavation* for complete standards and guidelines for mechanical topsoil removal.)

Standards

1. Mechanically remove topsoil from trenches of no more than 5 m in width with no more than 20 m intervals between trenches.
2. Do not excavate trenches where the site limits are defined by physical constraints (e.g., steep slopes, edge of waterway, low wet areas, modern cultural features such as roads).
3. Excavate trenches inwards towards the archaeological site from a minimum of 20 m outside the limit of the previously mapped extent of artifacts (as determined by surface artifact scatter or test unit artifact drop-offs).
4. Excavate trenches until cultural features are identified or until the excavations reach the limits of the previously mapped extent of artifacts. If cultural features are identified, cease excavating in towards the archaeological site.
5. Trenches must be sterile for a minimum of 20 m outwards from the outermost cultural feature encountered or from the limits of the previously mapped extent of artifacts. This will establish the limits of the 20 m buffer area where that may be required for avoidance and protection.
6. If excavation of trenches uncovers a cultural feature, do not excavate into feature fill. Instead:
    a. record the exposed plan of the feature
    b. place geotextile fabric over the unit floor and backfill the unit

Guidelines

1. Based on the consultant archaeologist's professional judgment that the information is required to inform Stage 3 recommendations, exposed cultural features may be excavated, provided that both of the following conditions are met:
    a. All test units over the cultural features are first excavated to expose the complete plan of the features. This is not applicable to deeply buried deposits.
    b. The cultural features are excavated to Stage 4 excavation standards (see section 4.2: Approach 2: Excavation).

Assessment of sites in deeply buried conditions

Where archaeological sites have been identified in deeply buried conditions, Stage 3 assessment of those sites should continue using the same methods and approaches as followed in Stage 2. (This may be one continuous process). The approach should reflect the Stage 3 objectives and incorporate any further information acquired during Stage 2 and that may have resulted from additional Stage 3 historical documentation.

Standards

1. For properties where there is a combination of both deeply buried archaeological sites and archaeological sites present near the surface, and where it is viable to carry out test unit excavation, test unit excavation must be carried out prior to using more invasive methods (e.g., backhoe trenching).
2. Use heavy excavating machinery when deep subsurface excavation is necessary to assess a deeply buried archaeological site, to reach sterile subsoil or to excavate through materials (e.g., modern fill) where it is not viable to excavate by hand.
3. Excavate according to a strategy that balances systematic and focused test excavation across the site. The testing strategy should ensure that:
    a. areas of artifact concentration are sampled
    b. the full depth and extent of the archaeological site has been determined
    c. stratigraphy is sufficiently well understood to inform the Stage 4 mitigation strategy
    d. major parts or components of the archaeological site have been identified
4. If other strategies have not allowed for or are not viable for the purpose of making a conclusive assessment of a deeply buried archaeological site, monitor excavation and the removal of fill as follows:
    a. Conduct on-site monitoring where and when work is proceeding. (On-site monitoring may not be required across the entire development site or at all times during construction.)
    b. Prepare, in consultation with the proponent and contractors, a contingency plan outlining procedures, documentation, and time requirements in the event that any part of the archaeological site is exposed unexpectedly or in an unplanned manner.
    c. Recover all diagnostic artifacts (those related to the archaeological site that is of cultural heritage value or interest, not those related to fill) exposed and removed from context during monitoring.
5. If any part of the archaeological site is sufficiently well exposed and documented to support a recommendation to proceed to Stage 4, construction and monitoring activities must cease in that location. Take appropriate steps to stabilize the exposed areas and to ensure avoidance until Stage 4 mitigation can be accomplished.

Guidelines

Analysis: Determining whether an archaeological site requires mitigation of development impacts

The information collected in Stage 3 is used to evaluate the cultural heritage value or interest of the archaeological site in order to determine whether Stage 4 mitigation of impacts is required, and as the basis for formulating Stage 4 strategies.

Archaeological sites with cultural heritage value or interest require Stage 4 mitigation of development impacts by avoidance and protection or excavation if they have not been completely excavated and documented by the end of Stage 3.

Standards

1. The following site types always require Stage 4 mitigation:
    a. archaeological sites identified as sacred or as containing burials
    b. rare (unique, unusual) archaeological sites
    c. Paleo-Indian archaeological sites (shows the earliest human occupation of the province), regardless of size or artifact yield
    d. large, dense lithic scatters (very high yields of artifacts per unit)
    e. Woodland period archaeological sites
    f. post-contact archaeological sites dating to before 1830
    g. late 19th and 20th century archaeological sites where background research (from any stage) or archaeological features clearly document cultural heritage value or interest
2. Indigenous communities must be engaged when evaluating the cultural heritage value or interest of an Indigenous archaeological site that is known to have or appears to have sacred or spiritual importance, or is associated with traditional land uses or geographic features of cultural heritage interest, or is the subject of Indigenous oral histories. This will have been determined through background research in Stage 1, detailed documentary research on the land use and occupation history early in Stage 3, and/or analysis of artifacts and other information recovered through archaeological fieldwork.

Guidelines

Site-specific criteria: Small or diffuse lithic scatters

Lithic scatters can range from small sites consisting of a few lithic flakes, with or without diagnostic artifacts, to large dense scatters of lithic debris and formal tools, and from single-component Archaic sites to multi-component Archaic and Woodland sites. Large, dense, lithic scatters automatically have high cultural heritage value or interest and require Stage 4. The cultural heritage value or interest of small or diffuse lithic scatters is more difficult to evaluate.

Standards

1. Small or diffuse lithic scatters possessing at least one of the following characteristics have cultural heritage value or interest and require Stage 4:
    a. one or more test units yielding 10 or more artifacts
    b. one or more test units yielding five to nine artifacts, including at least one diagnostic artifact
    c. one or more Indigenous ceramic sherds
    d. one or more sub-surface cultural features

Guidelines

1. In sites that do not meet the above standards, Stage 4 mitigation of impacts is not required. However, Stage 4 may be recommended, based on professional judgment, if the site has at least one of the following characteristics:
    a. one or more exotic or rare artifacts, indicating possible trade, spiritual/religious or ceremonial activity
    b. location associated with unique or unusual landscape features
    c. if the archaeological site meets the criteria for cultural heritage value or interest only marginally (e.g., a complete test unit strategy, as outlined in Table 3.1, resulted in only a few units that yielded 10 or more artifacts), the consultant archaeologist has two options:
        i move on to Stage 4.
        ii continue further Stage 3 test unit excavation. If further test unit excavation continues to confirm low counts, Stage 4 is not required but follow-up documentation must meet the requirements for complete documentation of comparable sites where Stage 4 is carried out.

Site-specific criteria: Domestic archaeological sites dating after 1830

In general, use the cultural heritage value or interest criteria in Table 3.2 to evaluate 19th century archaeological sites (commercial, industrial, institutional, religious and military) dating after 1830. The standards below apply to 19th century house and homestead archaeological sites, when neither the background documentation (from any stage) nor the archaeological features clearly indicate cultural heritage value or interest.

Standards

1. Sites with at least one of the following characteristics have cultural heritage value or interest and require Stage 4:
   a. In southern Ontario: most (80% or more) of the time span of occupation of the archaeological site dates to before 1870
   b. throughout Ontario (especially northern Ontario): the archaeological site is associated with the first generation of settlement of a pioneer or cultural group, even when the settlement was after 1870

Guidelines

Site-specific criteria: Other

Archaeological sites not addressed by the above general and site-specific criteria may still possess cultural heritage value or interest and require Stage 4 mitigation of development impacts.

Standard

1. Apply the general criteria and indicators outlined in Table 3.2, *Cultural heritage value or interest criteria*, to determine whether Stage 4 mitigation of impacts is recommended.

Guidelines

Table 3.2 Indicators showing cultural heritage value or interest

Information value The archaeological site contributes to local, regional, provincial or national archaeological history.	
Criteria	Indicators
Cultural historical value	Information from the archaeological site advances our understanding of: • cultural history—locally, regionally, provincially or nationally • past human social organization at the family, household or community level • past material culture—manufacture, trade, use and disposal
Historical value	The archaeological site is associated with: • oral histories of a community, Indigenous community, or specific group or family • early exploration, settlement, land use, or other aspect of Ontario's history • the life or activities of a significant historical figure, group, organization, or institution • a significant historical event (cultural, economic, military, religious, social or political)
Scientific value	The archaeological site contains important evidence that contributes to: • paleo-environmental studies • testing of experimental archaeological techniques
Rarity or frequency	The archaeological site is: • unique—locally, regionally, provincially or nationally • useful for comparison with similar archaeological sites in other areas • a type that has not been studied, or has rarely been studied, and is therefore under-represented in archaeological research
Productivity	The archaeological site contains: • large quantities of artifacts, especially diagnostic artifacts • exotic or rare artifacts demonstrating trade or other exchange patterns
Integrity	• The archaeological site is well preserved and retains a large degree of original material.
Value to a community The archaeological site has intrinsic value to a particular community, Indigenous community or group.	
Criteria	Indicators

The archaeological site has traditional, social or religious value.	The archaeological site: • contains human remains • is identified as a sacred site • is associated with a traditional recurring event in the community, Indigenous community or group (e.g., an annual celebration) • is a known landmark
Value as a public resource The archaeological site contributes to enhancing the public's understanding and appreciation of Ontario's past.	
Criteria	**Indicators**
The archaeological site has potential for public use for education, recreation or tourism.	The archaeological site: • is or can be made accessible to tourists, local residents or school groups • is or can be incorporated into local education, recreation or tourism strategies and initiatives

Formulation of Stage 4 strategies

Where the Stage 3 assessment results in a recommendation for Stage 4 mitigation of development impacts, the Stage 3 report will recommend strategies to be employed (avoidance and protection or excavation). Fieldwork requirements and alternatives are described in detail in the Stage 4 section. Standards and guidelines for making those recommendations are described in detail in the Stage 3 Project Reporting section.

The avoidance and protection of sites is always the preferred approach to the Stage 4 mitigation of impacts to archaeological sites. Where Stage 4 is recommended, the consultant archaeologist will need to review the viability of Stage 4 protection options with the client.

The following approaches can be used singly or in combination to reduce or eliminate impacts to archaeological sites:

- **Project redesign**: Changing the design, layout, extent, location or timing of the proposed project or planned construction within the project area. The redesign could include relocating or repositioning proposed buildings, roadways, lot sizes or layouts, or project facilities (e.g., construction staging areas or stockpiles).
- **Excluding the area of the archaeological site**: Redrawing the boundaries of the area proposed for development so as to exclude the area of the archaeological site from the final development application (e.g., a proposed quarry is reduced in scale, a proposed highway or pipeline is diverted from the protected area). In this way, the area of the archaeological site is no longer part of the proposed development. Exclusion is usually viable only before a development application has been submitted, and when the archaeology fieldwork has been completed in the pre-submission phase.
- **Incorporating the area of the archaeological site**: including that area in the final development plans, but without land alteration of any kind in the area containing the site (e.g., the site will be within an open space, woodland or parkland setting, restrictive setback, or protected environmentally sensitive area).

Standards

1. Indigenous communities must be engaged when formulating Stage 4 mitigation strategies for the following types of Indigenous archaeological sites:
   a. rare Indigenous archaeological sites
   b. sites identified as sacred or known to contain human remains
   c. Woodland Indigenous sites
   d. Indigenous archaeological sites where topsoil stripping is being contemplated
   e. undisturbed Indigenous sites
   f. sites previously identified as being of interest to an Indigenous community
2. A Stage 3 report recommending excavation must include documentation that excavation was only chosen as the approach to mitigation of impacts after careful consideration had determined that avoidance and protection was not viable.
3. When considering mitigation strategies for rare archaeological sites (e.g., archaeological sites in unusual locations such as wet, waterlogged or cobble beach soil conditions; archaeological sites that have unusual characteristics such as earthworks), excavation is not an acceptable strategy except in highly unusual circumstances (e.g., when site integrity will be threatened, even if the site is avoided).

Guidelines

1. When formulating Stage 4 mitigation strategies for Indigenous archaeological sites of cultural heritage value or interest other than those identified in the standards above, the consultant archaeologist may choose to review the recommendations with the relevant, interested Indigenous community or communities.
2. When considering mitigation strategies for deeply buried archaeological sites, to the degree that is possible based on available information, base those strategies on detailed three-dimensional mapping of the characteristics and locations of deposits within the project area.
3. Using professional judgment, consult a geoarchaeologist, geomorphologist or soil expert as appropriate.

Continuing temporary avoidance and protection of archaeological sites

Standards

1. Where Stage 3 assessment has been completed and the archaeological site is recommended to have further cultural heritage value or interest, continue the protection of the archaeological site. The protected area of the archaeological site must consist of the site limits plus a 20-metre protective buffer.
   a. If the recommended mitigation strategy is long-term protection, implement a protection strategy for the archaeological site.

Guidelines

Related sections

2	Stage 2: Project Area Assessment
4.1	Approach 1: Avoidance and protection
4.2	Approach 2: Excavation
5	Geospatial Data Documentation

7.8 Project reports: Stage 3

Stage 4: Mitigation of Development Impacts

Overview

Objective

To address development impacts on an archaeological site with a level of cultural heritage value or interest that has been determined to require mitigation. There are two approaches for mitigation of development impacts:

- avoidance and protection
- excavation

Avoidance and protection preserves archaeological sites intact. It is the preferred option for the mitigation of impacts to archaeological sites. Avoidance and protection are most viable when the cultural heritage value or interest of the archaeological site is determined early in the planning stages of the development, when plans are most flexible.

Approach 1: Avoidance and protection

Overview

Objective

Effective avoidance and protection strategies will include both avoidance measures (protecting the archaeological site from impacts during construction) and long-term protection measures (using legal, planning and administrative tools to protect the archaeological site and ensure that concerns for the archaeological site are addressed in any future land use changes).

If the archaeological site remains unaltered and is avoided during development, the archaeological concerns under land use planning and development processes may be considered addressed and development may proceed.

Role of the consultant archaeologist

The consultant archaeologist plays both an active fieldwork role and an advisory role in Stage 4 avoidance and protection.

The following requirements must be met in the implementation of any avoidance and protection strategy.

Standards

1. The limits of the archaeological site must have been established through Stage 2 and Stage 3 assessments prior to the implementation of any avoidance and protection strategy. (Protection is not an alternative to completing Stages 2 and 3.)
2. The area to be protected and avoided must include the entire archaeological site and, in addition:
   a. a 20 m buffer zone for Indigenous village sites, or
   b. a 10 m buffer zone for other sites, or
   c. a reduced buffer zone where permanent physical constraints of a natural form (e.g., river edge, cliff edge) or cultural form (e.g., roads, buildings) are in existence within the width that would otherwise be required

Guidelines

Avoidance

Standards

1. If grading or other soil disturbing activities caused by the development project will extend to the edge of an area to be avoided, recommendations must be made to the proponent to take the following steps to ensure that the protected area is not altered:
   a. Erect a temporary barrier around the area to be avoided.
   b. Issue "no go" instructions to all on-site construction crews, engineers, architects or others involved in day-to-day decisions during construction.
   c. Show the location of the area to be avoided on all contract drawings, when applicable. Include explicit instructions or labelling to avoid that area.
   d. Before grading and other soil disturbing activities, inspect to confirm that the placement of barriers conforms to the location and extent of the area to be avoided.
2. During grading and other soil disturbing activities, inspect and monitor the area to be avoided to verify the effectiveness of avoidance strategies. If alteration of the archaeological site is observed at any time during construction, notify the Ministry immediately.
3. After completion of the grading and other soil disturbing activities, inspect and report to the Ministry on the effectiveness of the strategy in ensuring that the area to be avoided remains intact (see section 7.10 *Project reports: Stage 4 avoidance and protection).*

Guidelines

Alternative strategies for special conditions: Frozen ground access

If access over the surface of a protected area is restricted to winter, when the ground is frozen and the access has minimal impact, then this is an effective option for temporary access roads or staging areas for construction or for linear corridor projects.

Standards

1. Prior to allowing access by heavy machinery in winter (e.g., vehicle crossings, timber harvesting), the ground must be frozen to a depth of 10 cm or more.
2. In the field season following any activity, the proponent must engage a consultant archaeologist to monitor and assess impacts on the protected area.

Guidelines

Long-term protection

Regardless of the strategy used, without the implementation of long-term protection mechanisms, an archaeological site is not considered truly protected. The overall avoidance and protection strategy recommended to the development proponent must include mechanisms to ensure the effective implementation of long-term protection.

The most commonly used mechanisms are restrictive covenants on titles, zoning by-law amendments and transfer of ownership to a municipality or other public land-holding body.

Standards

1. The mechanism recommended for long-term protection must set out how protection of the archaeological site is to be addressed as a prerequisite to any proposed removal of the archaeological restrictions on the land in the future. This includes defining the mandatory steps, such as ensuring that the archaeological site is either further protected on a long-term basis or is excavated by a licensed archaeologist.
2. The allowable uses for the protected area must not include any activities that might alter the archaeological site in any way, either temporarily or permanently. This includes even minor forms of soil disturbance such as tree removal, minor landscaping, utilities installation, etc.
3. If transfer of ownership is part of the avoidance and protection strategy, the proposed new owner must provide documentation (e.g., letter) confirming their awareness of their obligations for the archaeological site and their willingness and capacity to fulfil those obligations.

Guidelines

Alternative strategies for special conditions: Protecting deeply buried or sealed deposits

In urban, brownfield, highway, and floodplain contexts, archaeological sites may have been buried and sealed under later fill and thus preserved. In these situations, the most effective protection strategy may be to re-establish the seal and prohibit future below-ground disturbances in the area.

This is not the same as artificial "capping" (placing fill on an exposed archaeological site that was not originally deeply buried). Capping is not acceptable as a protection strategy in any context. It can increase the risk of damage from compaction, accelerated artifact deterioration, and unintentional impacts during cap construction.

Standards

1. Protection of deeply buried sealed deposits is a viable option if the following conditions are met:
    a. The sealed archaeological site, as found, is located under a minimum of 50 cm of fill.
    b. A consultant archaeologist has determined and mapped the depth and extent of the sealed archaeological site.
    c. A consultant archaeologist has recorded any existing exposed faces of the archaeological site, and the faces have been shored up to avoid collapse and then backfilled.
    d. The proposed surface uses:
        i are similar to as-found surface conditions (e.g., road or parking lot, green space)
        ii do not require below-ground construction or excavation any closer than within 20 cm of the sealed archaeological site.
2. Increasing the grade of the as-found ground surface (i.e., adding to the fill already on top of the deeply buried archaeological sites) is acceptable if it will not impede future access to the archaeological site or threaten its preservation when that fill is removed in the future. Place geotextile fabric under the new fill to mark the former ground surface.

Guidelines

Alternative strategies for special conditions: Partial long-term avoidance and protection

Part of the archaeological site is excavated and documented, leaving the remainder intact and protected through incorporation strategies. This measure is acceptable only when a single, clearly defined portion of a site cannot be protected.

Standards – avoidance and protection

Guidelines

1. Planning must contemplate eventual ownership of the unexcavated protected area by a single, publicly accountable landowner (e.g., municipality, conservation authority, provincial agency).
2. Implement the avoidance strategy according to the applicable requirements found in section 4.1.2.
3. Except when dealing with very large and complex archaeological sites (e.g., sites extending over a city block or more and previously subject to alterations and fill), the unexcavated protected area must be continuous, and it is not acceptable to excavate scattered fragments of an archaeological site and leave the rest undocumented. However, site- and project-specific strategies for very large and complex archaeological sites may combine partial excavation and partial avoidance, as in the following examples:
    a. excavation of footings for a structure at several locations across an archaeological site, provided that the unexcavated protected areas will remain accessible after construction (e.g., bridge footings)
    b. excavation to accommodate installation of a pipeline through the archaeological site, provided that the excavation is wide enough to avoid future impacts to the unexcavated protected areas from installation and contingencies (e.g., emergency excavations to repair a pipeline break), and provided that remnant protected areas on both sides of the pipeline are not too small to be protected effectively

Standards - excavation

Guidelines

1. Before beginning partial excavation, map and stake out the limits of planned impacts, based on the final project design specifications.
2. The excavated area must extend 5 m beyond the edge of the mapped impacts to ensure that there will be no incidental impacts to intact archaeological sites.
3. If a portion of an archaeological site that should have been avoided is accidentally exposed (e.g., topsoil stripping extends beyond the established limits of an area to be excavated), that portion must be completely excavated and documented. (Do not rebury the exposed portion without documenting it.)
4. Record any existing exposed faces within the archaeological site, shore them up to avoid collapse, and then backfill them.
5. Carry out the excavation and report on it according to the standards set out in 4.2 *Approach 2: Excavation* and 7.11 *Project reports: Stage 4 excavation.*

Related sections

4.2	Approach 2: Excavation
7.7	Project reports: Stage 2
7.8	Project reports: Stage 3
7.9	Project reports: Stage 4 avoidance and protection
7.10	Project reports: Stage 4 excavation

Approach 2: Excavation

Overview

Protection in an intact state is always the preferred option for an archaeological site that has been determined to require Stage 4 mitigation of impacts. Excavation converts the archaeological site into data (excavation records, artifacts), resulting in loss of contextual information. Excavation should only be undertaken if avoidance and protection are not viable.

Although it may not be necessary to excavate the whole archaeological site, excavation strategies must focus on recovering as much data as possible rather than on sampling the site. Full documentation of archaeological sites in Stage 4 is necessary to ensure the conservation, protection, and preservation of the heritage of Ontario.

Objectives

- To document the archaeological context, cultural features and artifacts for all parts of the archaeological site
- To document the removal of the archaeological site
- To preserve the information about the archaeological site for future study

Excavation methods

This unit lays out general requirements for all excavations, as well as specific requirements for excavation by hand and excavation by mechanical topsoil removal.

All archaeological sites for which Stage 4 excavation is carried out, whether single- or multi-component, must be excavated partly or completely by hand. Hand excavation is the preferred method for removing topsoil because topsoil stripping destroys any evidence of later site formation processes and leaves behind displaced artifacts.

Addressing archaeological concerns through excavation

When the archaeological site no longer exists in the ground, archaeological concerns under land use planning and development processes can be considered addressed.

Unit yield and other indicators laid out in this section provide a guide to determining when the archaeological site can be considered fully documented and the excavation complete.

Collecting soil samples for analysis is also a part of complete Stage 4 documentation.

General requirements for the excavation of archaeological sites

Through controlled removal and by recording the context, cultural features and artifacts, the cultural heritage value or interest of the archaeological site is documented and the information is preserved for future study. The following standards must be applied for all excavations.

Standards

1. All archaeological sites for which Stage 4 excavation is carried out must be excavated by hand. Exceptions where machinery may be used are described under *Excavation by mechanical topsoil removal (topsoil stripping)* in section 4.2.3 and *Deeply buried or complex stratified archaeological sites* in section 4.2.8.
2. Before carrying out fieldwork, review all available relevant reports of previous fieldwork on the archaeological site or project area.
3. Carry out excavation when weather and lighting conditions permit identification of subsurface cultural features and safe recovery of artifacts. Do not carry out excavation when weather and lighting conditions (e.g., snow cover, frozen ground, conditions of excessive rain or drought, heavy fog) may cause damage to artifacts or reduce the opportunity to identify and document any part of the archaeological site.
4. Using the Global Navigation Satellite System (GNSS) according to the requirements set out in section 5, record the locations of a permanent datum that can be tied to a development map directly.
5. To determine the placement of excavation units, and for use in recording cultural features and artifact locations, establish a grid on the site based on a datum tied to permanent landmarks (e.g., Ontario Land Surveyor survey points) to at least the accuracy of transit and tape measurements. Placing excavation units in unmeasured, estimated locations is not acceptable.
6. Excavate by systematic levels (stratigraphic or standardized).
7. Excavate all cultural features by hand (by shovel or by trowel).
8. Unless otherwise specified in the site-specific requirements outlined below, retain all artifacts and any other recovered materials for review in the lab. After lab review, any discards must comply with standards and guidelines in section 6 *Artifact Documentation and Analysis.*
9. Document all cultural features with photographs and drawings including plans and profiles of those cultural features. Include scales and north orientation in all documentation.
10. In the case of partial excavation of an archaeological site, when the remainder is to be left intact through incorporation strategies, record any exposed faces,

Guidelines

1. Sampling may be used as a means to reduce the degree or intensity of the archaeological fieldwork while still accomplishing the objectives for Stage 4 excavation. Sampling strategies may vary by site and assemblage and may be determined based on professional judgment. Sampling may be acceptable, provided that the following conditions are met:
    d. The sampling strategy was recommended in the Stage 3 project report and accepted by the Ministry. Cite references and provide supporting information for the proposed strategy.
    e. Sampling will be applied to sites or assemblages such that there will be no risk that the minimum levels of expected information will not be acquired. In general, this means that sampling should only be applied to large sites or sites where very large numbers of a class of artifact or feature are present (e.g., large quantities of lithic debitage).
    f. Sampling must ensure representation from all meaningful contexts across a site (e.g., cultural features, individual spatial or functional areas such as within a longhouse or across a block of excavation units).

shore up the faces to avoid collapse, and then backfill them.

11. Document all fieldwork in detail, including the following:
    a. field notes, maps, and photographic records of all field methods, archaeological findings, and unusual or difficult situations encountered in the field
    b. description of field conditions or unusual physical features affecting fieldwork strategy decisions or identification of artifacts or cultural features (e.g., heavy and wet soils, dense root mats, boulders, rubble)
    c. logs of photographic documentation, maps and graphics

Excavation by hand

All archaeological sites for which Stage 4 excavation is carried out, whether single- or multi-component, must be excavated partly or completely by hand. Hand excavation recovers more data than mechanical topsoil removal does. It is the preferred technique for documenting the full range of materials and formation processes at an archaeological site.

The following are general standards for all archaeological sites or parts of archaeological sites excavated by hand.

Standards

1. Remove plough zone soil or topsoil by hand and screen the soil.
2. Excavate in one metre square units.
3. Excavation of the core of the site must include the following:
    a. the main concentration of artifacts in the surface scatter
    b. the concentration of positive test pits
    c. the area around all high-yielding Stage 3 test units
4. Excavate units positioned diagonally from high-yielding excavation units (as defined by Table 4.1 *Determining the extent of excavations)*.
5. Screen all excavated soil through mesh with an aperture of no greater than 6 mm. For confirmed single component Paleo-Indian and Early Archaic archaeological sites, for a sample of units (at least 20% of the total number of units in sandy soil and at least 10% of the total number of units in heavy soil), screen the entire contents of each unit through mesh with an aperture of no greater than 3 mm.
6. Excavate into the first 5 cm of subsoil, unless excavation uncovers a cultural feature.
7. If excavation uncovers cultural features:
    a. Clean all exposed subsoil surfaces by shovel ("shovel shine") or trowel to aid in identifying any subsurface cultural features.
    b. Document invisible (ghost) features through horizontal and vertical mapping of artifact concentrations extending into the subsoil (i.e., piece-plotting).
    c. Extend excavation, regardless of yield, 2 m (i.e., two excavation units) beyond any cultural features uncovered.
    d. Excavate a cultural feature only when it has been completely exposed (i.e., not in sections corresponding to excavation units).
    e. If there is potential for or documentation of cultural features outside the core of the archaeological site, mechanically remove topsoil in those areas after completing the hand excavations within the core.

Guidelines

1. Based on the consultant archaeologist's professional judgment, when the site type indicates that artifacts measuring less than 6 mm may be present (e.g., very small lithic flakes, seed beads) and should be recovered, some or all excavated soil may be screened through 3 mm mesh or water screened.
2. Very heavy soils may be water screened.

Excavation by mechanical topsoil removal (topsoil stripping)

The rationale for topsoil stripping is that the careful documentation of intact archaeological sites as described below offsets the loss of fragmentary information in the topsoil layer.

Because of the greater risk mechanical topsoil removal poses to the preservation of archaeological sites, this method must be used with caution, and only where indicated as appropriate in these Standards and Guidelines.

The following are general standards for all archaeological sites or parts of archaeological sites excavated by mechanical topsoil removal.

Standards

1. Mechanical topsoil removal may supplement hand excavation only if the archaeological site meets all of the following conditions:
    a. The archaeological site has been subject to ploughing for many years.
    b. The archaeological site has only one cultural stratum below topsoil.
    c. The extent of the archaeological site is large.
    d. The cultural affiliation of the archaeological site (Woodland or later) gives rise to a reasonable expectation that extensive sub-surface cultural features and settlement data may be present.
    e. Stage 2 and Stage 3 assessments have documented a representative sample of ploughzone artifacts and their distribution.
2. To avoid damage to the underlying archaeological site, use heavy machinery that pulls soil away (e.g., excavator, backhoe with flat-edged bucket, grader with extendable arm). Machinery that pushes soil (e.g., bulldozer, belly scraper) is not an acceptable alternative. Pushing soil directly across the previously undisturbed and newly exposed subsoil surface of an archaeological site must be avoided as this has the potential to cause increased damage.
3. Mechanical topsoil removal must stop at or above the topsoil/subsoil interface. Never use mechanical removal below the topsoil level. If soil conditions do not allow mechanical topsoil removal without intruding into subsoil (e.g., very wet or dry soil conditions), delay mechanical topsoil removal until conditions are appropriate or remove topsoil by hand.
4. Do not allow exposed subsoil surfaces to dry out such that cultural features cannot be identified. If there is a pause in the hand excavation, cover all mechanically stripped areas with tarpaulins and straw or soil.
5. Switch to hand excavation by shovel if it appears that mechanical topsoil removal may be affecting the integrity of cultural features or the recovery of surface artifacts. The following are indications that this is the case:
    a. The archaeological site reveals few or no cultural features (e.g., in deeply plough-disturbed areas or as a result of site occupation activities).
    b. Cultural features expected to contain artifacts (e.g., midden deposits in village sites) do not appear to contain many or any artifacts.
6. Clean all exposed subsoil surfaces by shovel (“shovel shine”) or trowel following mechanical topsoil removal.

Guidelines

Site-specific requirements: Woodland archaeological sites

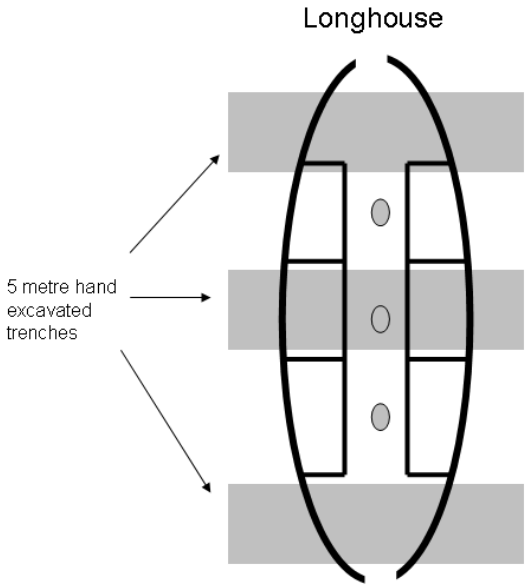
When Woodland archaeological sites are found in plough-disturbed settings, it is usually possible to use a combination of hand excavation and mechanical topsoil removal.

Standards

1. Hand excavate the following:
    a. plough zone over middens identified in Stage 3, by units of one metre square
    b. a sample of plough zone in areas away from middens, if no such sample was taken during Stage 3, by units of one metre square
    c. cultural layers and paleosols, by strata or standardized levels
2. The remainder of the archaeological site may be excavated by mechanical topsoil removal.
3. Using the grid established in Stage 3, record and map all exposed settlement pattern according to accepted practice (any combination of triangulation, square plans, total station).
4. Retain all artifacts recovered by hand excavation and record their provenience by cultural feature (excavated half or quadrant, and internal strata), or by grid unit context if they were not recovered from a cultural feature.
5. Excavate intact midden deposits and complex stratified features (e.g., semi-subterranean sweat lodge), by strata/lenses, and retain artifacts according to strata. Record multiple continuous profiles across these features (minimally, along maximum length and width).
6. Section and record the depth and angle of a minimum of 10% of the post moulds from each defined structure (e.g., house wall, palisade).

Guidelines

1. In contact-era Woodland village archaeological sites, very small diagnostic trade goods (such as trade beads) may be recovered by hand-excavating the plough zone and screening the soil through 3 mm mesh.
2. Based on professional judgment, increase the area of the archaeological site to be excavated by hand, as needed, to recover data documenting site formation processes and intra-site variability. Increased hand excavations may focus on:
    a. house walls
    b. non-habitation structures
    c. palisade wall sections
    d. open plazas
    e. other areas identified as having a distinct function
3. Based on professional judgment, Stage 3 findings, and Stage 4 excavations, hand excavate a 5 m wide strip of units of one metre square across the centre and the ends of identified longhouses. Begin the strip at 1 m outside the house wall, excavate through the house, and end the strip at 1 m beyond the other side of the house (see figure below).



4. Based on professional judgment, the following categories of artifacts may be counted and discarded in the field instead of in the lab. These categories of artifacts must still be recorded

following the standards and guidelines in section 6 *Artifact Documentation and Analysis*:

a. fire-cracked rock

b. undecorated ceramic micro-sherds (smaller than 2 cm in diameter) with one or both surfaces missing

Site-specific requirements: Large lithic scatters

Standards

1. When the extent of the archaeological site is more than 2,500 m^2, centre locations of block excavations as follows:
   a. at locations where Stage 3 assessment documented the highest concentrations of artifacts
   b. at locations where Stage 3 assessment showed separate components or activity areas
   c. at locations otherwise identified during excavation as warranting block excavation
2. Excavate units between block excavation areas using either evenly spaced individual units or a continuous row of units. Expand excavations in these areas when yield increases, or when artifact distribution patterns reveal individual activity or site formation processes or individual cultural features.

Guidelines

Site-specific requirements: Large lithic quarry archaeological sites

Standards

1. Carry out a detailed controlled surface pick-up to augment the Stage 3 controlled surface pick-up.
2. Focus excavation on mapped areas that exhibit reduction sequences, associated living patterns, or chronological events on the site.
3. Excavate locations of primary quarrying activities to record the active quarry face of the deposit.
4. Retain for counting and discarding in the lab all lithic debris from areas identified as single component or exhibit specific reduction sequence activities.

Guidelines

1. Based on professional judgment, lithic debris from all areas not covered in the standards listed above may be counted and discarded in the field.

Site-specific requirements: 19th century domestic archaeological sites

When 19th century archaeological sites are found undisturbed, hand excavation is required (see the site-specific requirements for undisturbed sites outlined in section 4.2.9). In plough-disturbed settings, it is usually possible to use a combination of hand excavation and mechanical topsoil removal.

Standards

1. For archaeological sites that mostly date to before 1830, hand excavate the ploughzone in the core of the surface scatter and where Stage 3 unit yields are highest. Excavate the entire extent of all cultural features (e.g., cellars, privies) by hand.
2. At archaeological sites that mostly date to after 1830, hand excavate all midden areas and follow with mechanical topsoil removal on the remainder of the archaeological site. Clean the exposed subsoil surface by shovel ("shovel shine") or trowel.
3. Hand excavate a minimum of two opposing quadrants (e.g., northeast and southwest quadrants) in larger cellar features and record all exposed profiles.
4. Excavate large and complex structural features according to the requirements for complex stratified sites (see below).
5. Document architectural or structural remains (e.g., foundation footings, stone-lined wells, brick or stone paths or patios) with scale drawings and photographs. Where excavation requires the removal of architectural or structural remains, map and draw them and hand excavate any intact cultural layers beneath.

Guidelines

1. Based on professional judgment, when conducting excavation of larger cellar features, the consultant archaeologist may excavate all four quadrants and may use mechanical means to remove heavy post-use fill above living strata.
2. When warranted for health and safety reasons, excavation and documentation of deep stone-lined wells may be limited to the following:
    a. exposing and mapping the surface
    b. documenting construction details by excavating one side and removing the well wall and any rubble or fill to a maximum depth of 2 m
3. Based on professional judgment, the following categories of artifacts may be counted and discarded in the field instead of in the lab as long as these artifacts are recorded according to the guidelines in 6 *Artifact Documentation and Analysis*:
    a. structural and building artifacts (bricks, plaster, mortar, concrete and asphalt)
    b. fuel-related artifacts (clinker, coal, slag)

Site-specific requirements: Deeply buried or complex stratified archaeological sites

Deeply buried or complex stratified archaeological sites are found in urban and brownfield settings and under silt deposits in river flats. They may also be found at the base of slopes (due to soil erosion), under wind-deposited sediments, or within ancient lake plains. The sealed nature of such sites means that additional contextual information may have been preserved. Specialized methods are required to recover information from these sites.

Standards

1. Excavate by hand all natural strata or deposition episodes.
2. Use established recording methods designed for complex site documentation (e.g., Harris matrix or Parks Canada methods).
3. Record stratigraphic profiles for all exposed faces of the site deposit, including orientation (i.e., north/south/east/west) and horizontal and vertical scales.
4. Record cultural features encountered in strata profiles, and record recovered material according to its feature context.
5. If excavation by a contractor retained by the development proponent is the only practical means to reach the deeply buried archaeological site, the removal of fill must be monitored. In this case:
    a. Prepare, in consultation with the proponent and contractor, a contingency plan outlining procedures, documentation, and time requirements in the event that archaeological sites are affected.
    b. Recover all diagnostic artifacts exposed during monitoring.

Guidelines

1. Excavation units may vary from the standard one square metre , as deemed appropriate to site and context (e.g., 2 m by 2 m, 6 m by 10 m).
2. Heavy machinery may be used as follows:
    a. Culturally sterile natural overburden may be removed where the basic site stratigraphy has been confirmed and documented.
    b. Historical cultural fill strata or deposition episodes may be removed where those strata do not comprise the components of interest as recommended by previous reporting.
    c. Removal must stop at or above the level of cultural heritage value or interest. If soil conditions do not allow mechanical removal without intruding into the level of interest (e.g., unstable soil or fills, very wet or dry soil conditions), delay mechanical removal until conditions are appropriate.
3. As appropriate, consult with geoarchaeologists, geomorphologists or soil experts when developing excavation strategies.

Site-specific requirements: Undisturbed archaeological sites

Because of their rarity and degree of integrity, every effort must be made to ensure the avoidance and protection of undisturbed archaeological sites. For Indigenous archaeological sites, any recommendation to excavate must have been made in consideration of feedback from engagement with Indigenous communities and a careful review of the viability of preservation options.

If the decision is made to proceed with excavation, apply the following standards and guidelines.

Standards

1. Excavate by hand, trowel and shovel only, in one metre square units.
2. When removing homogeneous strata, excavate in standardized levels (5 or 10 cm) until natural or cultural strata are evident. Then, excavate by those strata.
3. Excavate into subsoil at least 10 cm below the subsoil interface.
4. As artifact distribution is typically not uniform at such sites, excavate additional units at distances of 5 m and 10 m beyond low-yielding units to confirm drop-off of artifact yields. This is only necessary where it was not accomplished by the Stage 3 assessment.
5. Cultural features and post moulds are not always clearly evident in undisturbed archaeological sites. In areas where post moulds and features are expected but not evident, vertically profile the subsoil. Excavate by shovel through subsoil, by vertical thin sections of no more than 5 cm, to a depth of 10–15 cm below the unit floor.
6. Piece-plot the horizontal and vertical locations of all diagnostic artifacts and formal tools, as well as artifact patterns associated with activity areas, house or living floors, or artifact concentrations.

Guidelines

1. As appropriate, consult with geomorphologists and soil experts when developing excavation strategies.

Site-specific requirements: Rare archaeological sites

Protection is the preferred option for archaeological sites in unusual locations (e.g., wet, waterlogged or cobble beach soil conditions) and for sites that have unusual characteristics (e.g., earthworks).

Excavation is not acceptable, except in highly unusual circumstances (e.g., when site integrity will be threatened even if the site is avoided). A recommendation to excavate a rare Indigenous archaeological site must take into consideration feedback from engagement with Indigenous communities and a careful review of the viability of preservation options.

If the decision is made to proceed with excavation, apply the following standards and guidelines.

Standards

1. Consult experts in such sites and review current methodologies when developing excavation strategies.
2. The excavation strategy must be consistent with the unusual and sensitive characteristics of the particular site and the expectations set out in the professional literature.

Guidelines

1. As appropriate, consult with geomorphologists and soil experts when developing excavation strategies.
2. As appropriate, prepare a conservation plan in advance of excavation to ensure that rare and unstable artifacts are properly conserved.

Determining the extent of excavations

Unit yield is a measurable indicator of the outer extent of an archaeological site excavation. However, knowledge and interpretation of site use patterns is a necessary addition to this information. The area occupied by the inhabitants of an archaeological site extends beyond areas of waste disposal or functional activities such as tool manufacture. Interpretation of the archaeological site must also account for areas of low artifact counts, such as sleeping areas.

Standards

1. Use Table 4.1, below, to determine when the archaeological site can be considered fully documented and the excavation complete.

Guidelines

Table 4.1 Determining the extent of excavations

Mechanical topsoil removal		
Type of archaeological site	**Unit-yield indicators of extent of site**	**Other indicators**
• Large Woodland and post-contact sites • Post-1830 domestic sites	Not applicable	All cultural features are uncovered and excavated. Excavation must extend a minimum of 10 m beyond uncovered cultural features.
Excavation by hand		
Type of archaeological site	**Unit-yield indicators of extent of site**	**Other indicators**
• Small pre- and post-contact sites • Pre-1830 domestic sites	Excavation can not be considered to have been completed until there are yields of fewer than 10 artifacts from units at the edge of block excavation. Excavation must be continued if units include at least two of the following: • Formal tools or diagnostic artifacts • Fire-cracked rock, bone or burnt artifacts	Testing of site periphery indicates no further high-artifact-yielding units (as per the indicators for the extent of block excavation) in a 5 m buffer zone beyond the limit of block excavation. Excavations must extend a minimum of 2 m beyond uncovered cultural features.
• Sites located in a region where lithic scatters are typically low-yielding (e.g., north or east of the Niagara Escarpment) • Paleo-Indian and Early Archaic Sites • Undisturbed sites	Excavation can not be considered to have been completed until there are yields of fewer than 10 artifacts from units at the edge of block excavation. Excavation must be continued if units include at least two of the following: • Formal tools or diagnostic artifacts • Fire cracked rock, bone or burnt artifacts	Testing of site periphery indicates no further high-artifact-yielding units (as per the indicators for the extent of block excavation) in a 10 m buffer zone beyond the limit of block excavation. Excavations must extend a minimum of 2 m beyond uncovered cultural features.

• Large, dense lithic scatters where yields per unit are well over 100 artifacts	Unit yield drops to 10% of core yields (determined by averaging yields of the 10 highest-yield units in the core of the site. For example, if this average is 200 artifacts per unit, excavation can stop where units yield 20 artifacts per unit).	All centres of high artifact concentration have been excavated. It has been confirmed that areas of low concentration between these areas contain lower yields and are not discrete component, habitation, or activity areas.
• Lithic quarry sites	Not applicable	All discrete areas of possible reduction sequences, habitation, or temporally discrete events have been fully excavated and documented.
• Deeply buried sites • Complex stratified sites	Not applicable, given the stratified nature of such sites	All strata with cultural heritage value or interest have been fully documented and excavated. The limits of the area of development impacts have been documented and excavated.

Collecting soil samples for analysis

Complete Stage 4 documentation of archaeological sites includes analysis of soil samples in order to:

- document patterns of site use (e.g., use patterns from various areas within a site, such as middens or longhouses, or from separate components of a multi-component site)
- identify the range of floral and faunal remains in a site
- provide a sample of large or rich deposits or distinct concentrations of artifacts or floral or faunal remains
- identify rare specimens (e.g., parasites, wild rice)
- recover very small artifact classes (e.g., micro-debitage, trade beads)

Standards

1. Collect soil samples from cultural features using shovel and bucket. Do not collect soil samples by trowelling, as doing so destroys floral and faunal specimens.
2. The optimum number of litres to be collected for a soil sample can vary by cultural feature content, site type, and sampling procedure. Document sampling strategies and the basis for determining sample size, substantiated with sampling calculations and by citing the appropriate literature.
3. The following table provides site-specific soil sampling standards:

Type of archaeological site	Minimum soil samples
Paleo-Indian and Archaic sites	Collect soil samples from all cultural features.
Indigenous village sites	Collect soil samples from • all ash pits and hearths • all cultural strata in middens, living floors, and semi-subterranean sweat lodges • 10% of all other cultural features in each longhouse and from the area outside each longhouse
Indigenous sites other than villages	Collect soil samples from • all cultural features or strata rich in organic remains or containing diagnostic artifacts • 5% of all other cultural features
Post-contact non-Indigenous domestic sites	Collect soil samples from each root cellar quadrant or privy, by stratum.

4. When mapping and defining invisible or ghost cultural features by piece-plotting artifacts, collecting soil samples may conflict with the requirements for piece-plotting. Collecting soil samples is not required if both of the following conditions are met:
   a. there is no evidence of organic material in the fill
   b. the loss of piece-plotted data would reduce the ability to interpret the formation and function of the cultural feature

Guidelines

1. Based on professional judgment, larger quantities of cultural feature fill may be collected to recover larger samples of floral, faunal, parasite, and small artifact categories, or to speed up completion of field excavations (i.e., collecting all or most fill content for analysis out of the field rather than carrying out detailed hand excavations).
2. Additional soil samples may be collected to be preserved “dry” (without flotation) for future research or pollen analysis.
3. Based on professional judgment, collect optional samples from post-occupation fill.

Related sections

3 Stage 3: Site-specific Assessment

5 Geospatial Data Documentation

6 Artifact Documentation and Analysis

7.10 Project reports: Stage 4 excavation

Geospatial Data Documentation

Geospatial data may consist of waypoints recorded in the field using a Global Navigation Satellite System (GNSS) (such as GPS, GLONASS etc.) or coordinates derived from map-based sources including user-geo-referenced maps or other data (e.g., air photos, topographic data) contained within a Geographic Information System (GIS).

Use of GNSS in the field is the standard method for recording the locations of archaeological sites and reference points not readily available on pre-existing, external map-based sources (e.g., site datum, centre of site, position of artifacts, etc.), and can also be used to verify and/or record the position of points of interest visible on maps (such as limits of project area).

Coordinates for points of interest may also be identified remotely using map-based sources.

Use of GNSS

Standards

1. To ensure consistency, in the Field Methods section provide the following information when reporting the coordinates for all geospatial data collected in the field using GNSS:

    a. GNSS receiver model and type

    b. Universal Transverse Mercator (UTM) grid zone (i.e., Ontario zones will be one of 15, 16, 17, or 18), along with the six-digit easting and seven-digit northing coordinates

    c. the datum used (e.g., NAD 1983, WGS 1984, or any subsequently released geodetic datum). NAD 27 will not be accepted.

    d. method of correction, if used (e.g., Wide-Area Augmentation System (WAAS), Differential GPS (DGPS))

    e. Level of correction in metric units, if known (e.g., subscription plan type for mobile corrections)

    f. document any conditions that affect or that could have affected the accuracy of readings (e.g., foliage, proximity to structures, etc.)

2. When reporting the location of archaeological sites, provide each with a unique identifier; either the site registration number or, where no site registration number exists, the PIF number and a project-specific descriptor (e.g., Location 1.)

3. Coordinates must be provided for each archaeological site according to the size of the archaeological site as follows:

    a. for archaeological sites less than 10 m by 10 m, one coordinate reading must be provided at the centre of the site

Guidelines

1. The following information may be provided, as appropriate:

a. decimal degree coordinates

b. additional multiple edge readings for very large sites

c. the date of taking the coordinates (yyyy-mm-dd)

d. antenna height, i.e., the height of the top of the backpack or tripod (low-level vegetation may affect readings)

e. an indication of quality of data (e.g., Position Dilution of Precision (PDOP), Estimated Position Error (EPE))

f. other readings as deemed necessary to record fieldwork activities (e.g., extent of project area surveyed, survey methodologies, interval spacing changes)

b. for archaeological sites greater than 10 m by 10 m, five readings must be provided: a coordinate at the site centre and four readings at the furthest site extents in each of the cardinal directions

Verification of project area in the field

Standards

1. In the Field Methods section, describe methods used to identify location of the project area in the field. This ensures that the area assessed corresponds to the mapped project area.

   Acceptable verification methods include:

   a. GNSS-based confirmation using a mobile mapping application in the field. Provide details related to basemap/ reference data (e.g., spatial data provided by proponent or digitized/georeferenced plans), or

   b. Use of identifiable landmarks depicted on a development plan (e.g., a description of measurements taken from landmarks or a measurement with a bearing to mapped points of interest), or

   c. Stakes placed by proponent to outline project area, the position of which must be verified using 1a or 1b.

Guidelines

Artifact Documentation and Analysis

Objectives

Stage 2, 3, and 4 archaeological fieldwork reports must include documentation and analysis of artifacts and other archaeological materials found.

The intent of documentation and analysis in the land use planning and development context is to provide the following:

- a record of artifacts and other archaeological materials recovered from an archaeological site
- a basis for recommendations either that there are no further concerns for impacts to that archaeological site or that further work will be required to mitigate impacts
- enough basic information to help future researchers determine whether the site is relevant to their studies

Standards

1. Cite the sources used when employing or referencing formal typologies established in the literature to describe category terms or type classifications.
2. In Stage 4 excavation projects, analyze only complete assemblages. Include all materials recovered from soil flotation when samples have been taken. Retain soil samples and recovered fractions as part of the collection until they have been processed and sorted.
3. Include in the project report, as a minimum, the standard analysis set out in Table 6.3 in the documentation of any Stage 4 excavation project. The analysis is to be based on the recovered assemblage from both the excavation and the processed flotation samples (light and heavy fractions) taken from feature contexts. The consultant archaeologist is responsible for ensuring that the individual performing the analysis possesses the appropriate level of knowledge and expertise in the applicable field.
4. For unstable artifacts (individual or classes) with a high risk of deterioration and loss of interpretive integrity in storage, record their condition and document, as needed, any additional information that may be lost (e.g., analytically meaningful details that may be obscured or lost, measurements that may change).
5. For large assemblages of unstable artifact classes (e.g., nails), measure 100 specimens per meaningful context (i.e., a feature that is temporally discrete or associated with a specific structure or functional area) to provide necessary documentation to augment basic counts.
6. Include an artifact catalogue in the project report. In addition to the artifact catalogue, artifact documentation may be included as tables in the text of the report. Catalogues must be prepared as follows:
    a. Each entry must have a catalogue number.
    b. Each entry must identify the quantity of a class of artifacts at a specific spatial location within the site (e.g., test unit, test pit, surface collection, stratum, feature, block excavation unit).
    c. Artifact classes must be separately catalogued to at least the level of analysis required by Tables 6.1, 6.2 and 6.3.
    d. The catalogue must correspond to the packed collection (e.g., list artifacts by box).
7. Ensure that the project report includes the size of the packed collection (e.g., number and size of boxes) and long-term curation plans.
8. Sampling is acceptable only when analyzing certain types of artifacts, under certain conditions. Table 6.1 provides standards (full count) and guidelines (including sampling guidelines) for

Guidelines

Indigenous artifacts. Table 6.2 provides the same for European and other non-Indigenous manufactured artifacts.

Table 6.1 Indigenous artifacts

Material/artifact type	Standards	Guidelines
Stone: Lithic debitage (unretouched flakes and shatter) The objective is to document lithic industry or activities represented, such as: • quarrying • initial reduction • tool manufacture • tool maintenance • domestic activities	1. Debitage categories must correspond to one of the following: • Analytical terms established in the literature, citing the relevant source • The following descriptive categories: • reduction sequence (e.g., primary, secondary, cortical removal) • tool thinning (e.g., biface or uniface maintenance or refinement) • channel flakes • fragments • shatter/block 2. In addition, provide counts for each flake category by: • excavation unit/feature context • raw material • number of specimens exhibiting heat alteration 3. Complete debitage analysis is required for all Paleo-Indian and Early Archaic archaeological sites.	0. Detailed flake type identifications, such as: • stages of reduction sequence • presence of cortex • tool edge retouch • flake measurements (length/width/thickness) • presence or absence of striking platforms and platform angle • weight and/or volume • colour 1. Sampling: • Stage 4 excavation reports for all other site types may provide category descriptions for a sample of debitage. For the remainder of the assemblage, only counts by raw material per excavation unit/cultural feature and heat alteration are required. • Sampling may be used only for archaeological sites where the overall debitage assemblage is more than 1,000 specimens. • Sampling may not be used to reduce the minimum debitage analysis to less than 1,000 specimens described over all. • Sampling must ensure representation from all meaningful contexts across a site (e.g., cultural features, or individual spatial or functional areas, such as within a longhouse or across a block of excavation units). • Sampling strategies may vary by site and assemblage and may be determined based on professional judgment. In the report, cite references and

Material/artifact type	Standards	Guidelines
		provide supporting information for the strategy adopted.
Stone: Formal lithic artifact types Includes the following: • scrapers, perforators, knives, cache blades, formal bifaces and unifaces, points, drills, gouges	4. Provide counts of each type by: • excavation unit/feature context • material • sub-type (e.g., end or side scrapers, point types) • measurements (length/width/thickness) • relevant measurements associated with hafting elements or other distinctive elements • heat alterations	• analysis of edge/hafting to determine function • description and measurements of tool edges • weight and volume • use-wear analysis
Stone: Informal lithic artifact types Includes the following: • cores, non-diagnostic bifaces and unifaces, informal tool preforms and rejects, and fragments • improvised tools such as utilized flakes, wedges, flake burins or spurs	5. Provide counts of each type by: • excavation unit/feature context • material • heat alterations	• sub-type identification (e.g., formal, bipolar, blade, core type, number of used edges) • description and measurement of tool edges • weight and/or volume • use-wear analysis
Stone: Ground, pecked, polished or other stone objects Includes a range of ground stone artifacts: • celts, adzes, axes • mortars, metates, pestles, grinding stones, whetstones, hammer stones • net sinkers • slate or other stone pendants, beads, tubes,	6. Provide counts of each type by: • excavation unit/feature context • material. 7. Provide: • measurement (length/width/thickness for complete specimens) • brief identification of specific types (e.g., trihedral axe, pop-eyed birdstone) • a brief description if type is not recognizable	• measurements (length/width/thickness) for incomplete specimens • weight and/or volume • description of use edges, bore holes

Material/artifact type	Standards	Guidelines
pipes, bannerstones, birdstones • points, knives		
Stone: Fire-cracked rock	8. Frequencies by excavation unit/feature context	• weight and/or volume of fire-cracked rock recovered per unit • identification of materials
Ceramics: Rim sherds	9. Provide counts by: • excavation unit/feature context • decorative method or attributes • construction method (e.g., coil breaks, paddle-and-anvil) • "juvenile" vessel fragments 10. For vessels and complete rims (interior, lip through to shoulder), record the following: • MacNeish/Wright Types or other established typologies, citing the relevant source • rim profiles	• measurements of rims • surface treatment • weight • mouth circumference • interior residue analysis • temper and construction • minimum vessel counts or estimated vessel equivalents, by contextual units (e.g., middens, houses), by attribute/type
Ceramics: Neck through shoulder sherds	11. Provide counts of each type by: • excavation unit/feature context • decorative method or attributes • construction method (e.g., coil breaks, paddle-and-anvil) • "juvenile" vessel fragments	• surface treatment • weight • temper and construction
Ceramics: Body sherds	12. Provide counts of each type by: • excavation unit/feature context • construction method (e.g., coil breaks, paddle-and-anvil) • surface treatment • "juvenile" vessel fragments • fragmentary sherds	• weight by unit total • temper description • interior treatment
Ceramics: Pipes Includes the following: • complete pipes • bowl and stem fragments	13. Provide counts of bowl and stem fragment frequencies by: • excavation unit/feature context • bowl form type 14. Provide description of decoration on bowls and stems, including: • stem profile shape	• measurements of fragments • descriptions of boreholes • bowl circumference • residue analysis

Material/artifact type	Standards	Guidelines
	• measurements of complete specimens	
Faunal and shell artifact types Includes artifacts made wholly or partly of bone, antler or other material of animal origin, such as: • perforating tools • hooks, harpoons • beads, pendants, combs	15. Provide counts of each type by: • excavation unit/feature context • material 16. Provide a description of use edges, bore holes. • If type is not recognizable, provide a brief description. • Provide measurements of complete specimens.	• measurements of fragmentary specimens • weight • species identification
Indigenous metals	17. Provide counts of each type by: • excavation unit/feature context • material • object (e.g., celt, adze, scrap) • measurements (length/width/thickness) • weight	• use-wear analysis

Table 6.2 European and other non-Indigenous manufactured artifacts

Material/artifact type	Standards	Guidelines
Ceramics • Includes undecorated sherds, decorated sherds and rim sherds, but also includes complete or nearly complete objects	1. Provide counts, by excavation context, by: • type and colour (e.g., earthenware, stoneware, porcelain, pearlware, ironstone) • glaze type (e.g., salt-glazed, unglazed) • decorative technique and colours • function of object when known (e.g., cup, saucer, plate, bowl, inkwell, chamber pot, teapot) 2. Provide description of maker's marks or other manufacturer's information where evident, including: • date ranges • heat-altered items • For both formal typologies and reference to date ranges, cite the relevant source	• minimum vessel counts • measurements • vessel size or circumference • vessel profiles

Material/artifact type	Standards	Guidelines
Glass • Includes bottles, glassware, window glass, other household and personal objects (e.g., chimney glass, beads, buttons)	3. Provide counts, by excavation context, by: • functional type (e.g., platter, bowl, medicine bottle, soda bottle) • colour • technique of manufacture 4. Provide description of maker's marks or other manufacturer's information where evident, including: • description of categories (e.g., trade beads) • date ranges • For both formal typologies and references to date ranges, cite the relevant source	• minimum vessel counts • measurements (for window glass, this may be measurement of total area) • decorative patterns • vessel profiles
All other inorganic, organic and composite artifacts • Includes metals, stone, plaster, bone, shell, ivory, horn, rubber, wood, leather, textiles, paper, plastics and other synthetics	5. Provide counts, by excavation context, by: • material (or materials if composite) • technique of manufacture • surface finish, decorative techniques where evident • object type • functional category 6. Provide description of maker's marks or other manufacturer's information where evident, including: • description of categories (e.g., military hardware; coins) • date ranges • heat-altered items • For unidentified scrap and fragments, record counts by excavation context and by material • For both formal typologies and references to date ranges, cite the relevant sources	• weight • measurements • decorative patterns
Sampled classes of artifacts • Includes architectural	7. Description of retained material 8. Count of retained material	

Material/artifact type	Standards	Guidelines
materials sampled in the field (e.g., brick, plaster, coal, slag, clinker)	9. For material left in the field, provide descriptions by category of material/artifact type and estimates of quantities as appropriate	

Table 6.3 Specialist studies – Stage 4 excavation only

Material type/description	Standards	Guidelines
Faunal remains	1. Provide counts, by excavation context, identified to the lowest identifiable taxon. 2. Provide separate counts of all heat-altered specimens.	• element identification • bone modifications or cut marks • species seasonality and range • estimates of Minimum Number of Individuals (MNI) or Minimum Number of Elements (MNE) Sampling: • Except in the case of Paleo-Indian or Early Archaic sites, sampling may be used to reduce the scale of analysis of faunal assemblages of over 500 specimens. (For the remainder of the faunal material from these sampled contexts, only identification to class is required.) • Sampling may not be used to reduce the minimum to less than 500 specimens described over all. • Sampling must ensure representation from all meaningful contexts across a site (e.g., cultural features, or individual spatial or functional areas, such as within a longhouse or across a block of excavation units) and ensure representation of taxa. • Sampling strategies may vary by site and assemblage and may be determined based on professional judgment. In the report, cite references and

Material type/description	Standards	Guidelines
		provide supporting information for the strategy adopted. • The report must indicate how diversity and frequency have been sampled across classes and element sizes.
Floral remains	3. Provide counts by excavation context, identified to the lowest identifiable taxon. 4. For carbonized wood, identify tree species for 10 specimens per excavation unit/feature context, when available.	• wood, plant and seed weights • species seasonality and range • Provide environmental reconstructions based on identified material. • Identify cultural uses for the plants identified **Sampling**: • For large floral assemblages of over 100 specimens, sampling may be used to reduce the scale of analysis (For the remainder of the floral material from these sampled contexts, only identification to class is required.) • Sampling may not be used to reduce the minimum to less than 100 specimens described over all. • Sampling must ensure representation from all meaningful contexts across a site (e.g., cultural features, individual spatial or functional areas such as within a longhouse or across a block of excavation units), and representation of taxa. • Sampling strategies may vary by site and assemblage and may be determined based on professional judgment. In the report, cite references and provide supporting information for the strategy adopted.

Material type/description	Standards	Guidelines
		• The report must state how diversity and frequency were sampled.
Radiocarbon dates This is only required for Stage 4 excavations when • material has been recovered in sufficient quantity to permit radiocarbon dating (e.g., organic, carbonized); and • dating will be of value to site interpretation (i.e., at a pre-contact site)	5. Documentation through two dates from short-lived organic material 6. Samples must be from well-documented, sealed deposits (e.g., cultural features, post moulds, middens), either recovered during excavations or by flotation 7. If multiple radiocarbon samples are available for future additional dating, collect and preserve these samples to avoid contamination and keep them with the site collections.	• A single date may suffice for Late Woodland sites, based on professional judgment. • Provide a suite of dates, if circumstances and site characteristics allow for this.
Other studies		• other specialist studies, based on professional judgment • reports regarding conservation of unstable artifacts, as appropriate

Reporting Archaeological Fieldwork

Overview

The *Ontario Heritage Act* requires licensees to report on archaeological fieldwork done under their licence. The fieldwork reporting system has three components:

Project Information Form (PIF): section 7.1

- provides information about a planned archaeological fieldwork project and the names of licensed archaeologists supervising fieldwork
- filed before the archaeological fieldwork begins

Project report package: section 7.3

- reports fieldwork activities and results and the consultant archaeologist's recommendations for next steps
- includes the project report and associated documents
- filed after the archaeological fieldwork is completed

Site form: section 7.11

- reports new archaeological sites and changes to known archaeological sites
- includes Archaeological Site Record forms and Archaeological Site Update forms (also referred to as Borden forms)
- filed when new archaeological sites are identified or a previously reported archaeological site is altered
- information is entered into the Ministry's Ontario Archaeological Sites Database

What the Ontario Heritage Act says about reporting

Section 65 sets out reporting requirements for licensees and others:

Reports

When so required by the Minister, a licensee shall file with the Minister a report, containing full details of work done under the licence and such other information as the Minister may require.

Report of archaeological sites

When so required by the Minister, a person, organization or corporation shall prepare and file with the Minister particulars of all property of archaeological or historical significance in Ontario, known to such person, organization or corporation.

Form and manner

A report and particulars shall be filed with the Minister in such form and manner as the Minister may require.

Project Information Form (PIF)

The Project Information Form (PIF) is submitted by the individual licensed archaeologist prior to the commencement of archaeological fieldwork projects. Details regarding the processing and use of the PIF by the Ministry may be found in the associated bulletin.

Standards

1. A PIF must be filed with the Ministry for each archaeological fieldwork project, and the PIF number must be received by the licensee before beginning the fieldwork.
2. If a Stage 2 project area will be reduced as per Section 1.1 Standard 3, but a Stage 1 assessment has not been completed for the property then two PIFs are required: one for the Stage 1 and one for the Stage 2. A combined Stage 1-2 PIF will not be issued because the project areas will differ.
3. The PIF must be filed by the licensed archaeologist who is responsible for the archaeological fieldwork and for filing the project report.
4. A licensee taking over responsibility for an ongoing project, either during a stage or between stages, must file a new PIF for the remainder of the project.
5. The PIF number must be used in all correspondence and reports relating to the project.
6. The PIF expires on the report filing deadline for the project. For further information on report filing deadlines, refer to the associated bulletin.
7. If no fieldwork is undertaken (e.g., the project is cancelled or delayed), the licensee must notify the Ministry in writing prior to the report filing deadline, or the Ministry will consider the report to be overdue.

Guidelines

Filing project reports

Filing reports by the report filing deadline in the specified form and manner set by the Minister is a term and condition of an archaeological licence. Please refer to the associated bulletin for further details on the Ministry's report review process.

Standards

1. Reports must be filed by the report filing deadlines specified by the Ministry.
2. A report must be filed for each PIF number assigned.
3. The final project report must be filed in the form and manner as specified by the Ministry in section 7.4. The report must be filed as part of a project report package that includes the required attachments and supplementary documentation as outlined in sections 7.3 and 7.5.
4. The project report package must be complete, including all required elements specified in section 7.3.

Guidelines

Project report package

Overview

Project report packages consist of the following:

- project report: see section 7.4
- supplementary documentation: see section 7.5
- site forms: see section 7.11
- spatial data

Sections 7.4 and 7.5 provide standards and guidelines for all project report packages.

Additional standards and guidelines set out in sections 7.6, 7.7, 7.8, 7.9, 7.10, and 7.11 apply to project reports at specific stages.

Project reports

The project report is a summary of the archaeological assessment carried out. It includes the following:

- description of project and project area
- background research
- description of archaeological fieldwork
- fieldwork decision-making
- community engagement, including engagement with Indigenous communities
- artifact analysis and documentation
- assessment of potential impacts
- conclusions and recommendations
- mapping
- images

The project report serves a number of purposes:

- The report supplements the detailed field notes that, together with the artifacts and background research, form the complete archaeological record. When the report is entered in the Register, it provides a point of public access to the field records and artifacts held by the licensee or a public institution.
- Under land use planning and development legislation, the report serves to document, for the approval authority, that the proponent has addressed the provincial interest in archaeology for the development project.

What the Ontario Heritage Act (sec. 65.1) says about the Ontario Public Register of Archaeological Reports (the Register)

Provincial register

The Minister shall establish and maintain a register of the reports [filed by licensees].

Excluding information from register

The Minister may exclude from a record that is entered in the register information relating to the location of an archaeological site.

Inspection

The register shall be available for inspection by any person at a location, in a format and at the times determined by the Minister.

Supplementary documentation

For the purposes of review, the Ministry may require supplementary documentation to verify that fieldwork was conducted according to these Standards and Guidelines. Supplementary documentation is not entered in the Register. Therefore, it must be filed in a format that allows it to be separated from the report (e.g., in a separate binding, in a sleeve within the report binding).

Specific supplementary documentation requirements for each stage are set out in the standards and guidelines in the section on reporting for each stage (7.6, 7.7, 7.8, 7.9 and 7.10). In addition, the project report package must include the documentation described in section 7.5, if applicable.

Confidential information

The Ministry does not screen the project report for information that might be considered confidential or sensitive, such as personal information as defined in the *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. F.31 (FIPPA), before entering it in the Register. These Standards and Guidelines set out some provisions for protecting confidential information, but it is the licensee's responsibility to ensure that the report does not contain confidential information.

As a condition of the licence, the licensee must also ensure that no project report filed with the Minister in accordance with s. 65(1) of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18 infringes or induces infringement upon any third-party intellectual property right, including copyright.

When Indigenous communities have been engaged in the course of the fieldwork process, the licensee must ensure that any confidential information gathered from them is either excluded from the report or reported separately (in the supplementary documentation).

Confidential information, however acquired, must be filed as supplementary documentation. This material is not entered in the Register. However, as this material will be retained by the Ministry, it may be subject to provisions under *FIPPA* that provide a right of access to certain information records in the custody or control of the Ministry.

The *Freedom of Information and Protection of Privacy Act* defines personal information as follows:

- information relating to the race, national or ethnic origin, colour, religion, age, sex, sexual orientation or marital or family status of the individual
- information relating to the education or the medical, psychiatric, psychological, criminal or employment history of the individual or information relating to financial transactions in which the individual has been involved
- any identifying number, symbol or other particular assigned to the individual
- the address, telephone number, fingerprints or blood type of the individual
- the personal opinions or views of the individual except where they relate to another individual
- correspondence sent to an institution by the individual that is implicitly or explicitly of a private or confidential nature, and replies to that correspondence that would reveal the contents of the original correspondence
- the views or opinions of another individual about the individual
- the individual's name where it appears with other personal information relating to the individual or where the disclosure of the name would reveal other personal information about the individual

Personal information does not include information about an individual who has been dead for more than thirty years, or any information about the name, title, contact information, or designation of an individual that identifies the individual in a business, professional or official capacity.

Site forms

Archaeological site forms (i.e., site record forms and site update forms) are required as part of a project report package. Section 7.11 Standard 1 outlines when a site record form is required whereas Section 7.11 Standard 3 pertains to site update forms.

Spatial data

The Ministry may require spatial data, including geospatial data, be included as part of a project report package. These data may be used to:

- verify that fieldwork was conducted according to these Standards and Guidelines
- support Indigenous engagement
- inform predictive models
- inform licence decisions

Project report package: Project report

Table 7.1 points to where the general requirements for sections of a project report are located in these Standards and Guidelines and shows a suggested structure for reports. Types of project reports for which the requirements will result in a variance from this suggested structure are as follows:

- Stage 4 avoidance and protection reports: see section 7.9
- Stage 4 preliminary excavation reports: see section 7.10.7

Standards

1. All project reports must contain the sections listed in the first column of Table 7.1.
2. Measurements cited in project reports must be in metric units.

Guidelines

1. The order of the sections may vary from that listed in Table 7.1, provided that the report contains all the required sections.

Table 7.1 Project report format and content

Content	All Stages	Stage 1	Stage 2	Stage 3	Stage 4 Excavation
Project report cover page	7.4.1				
Executive summary	7.4.2				
Table of contents	7.4.3				
Project personnel	7.4.4				
Project context (including development, historical and archaeological context)	7.4.5 7.4.6 7.4.7 7.4.8	7.6.1			
Field methods			7.7.1	7.8.1	7.10.1
Record of finds			7.7.2	7.8.2	7.10.2
Analysis and conclusions		7.6.2	7.7.3	7.8.3	7.10.3
Recommendations		7.6.3	7.7.4	7.8.4	7.10.4
Advice on compliance with legislation	7.4.9				
Bibliography and sources	7.4.10				
Images	7.4.11	7.6.4	7.7.5	7.8.5	7.10.5
Maps	7.4.12	7.6.5	7.7.6	7.8.6	7.10.6

Project report cover page

Standards

1. The project report cover page must include the following:
    a. licensee information (must be the licensee named on the PIF):
        i name
        ii licence number
        iii company name
    b. project information:
        i PIF number(s)
        ii archaeological fieldwork stage(s)
        iii development name (e.g., “Pleasant View Estates,” “Phase 2 Quarry Pit Expansion”)
        iv development project designation number
        v property location information including, where applicable, street address, upper tier municipality, lower tier municipality, historic county, geographic township, lot and concession (optional: registered plan number, tax roll number)
    c. date the report was filed (day, month and year)
    d. type of report (i.e., original, revised, preliminary)

Development project designation number

This is the project file number assigned by the approval authority or proponent. It may be:

- Subdivision T-number
- Official Plan or Zone Change number
- Consent, Severance or Site Plan number (B #, C#, SP #)
- MTO Work Project Number; MNR Aggregate or Forestry Name and Number; Ontario Power Authority’s Registration or Project Number
- Other project designation assigned to the development by the approval authority or proponent

Executive summary

The executive summary is intended to help non-archaeologists, such as proponents, approval authorities and members of the public, quickly and clearly understand the results of the archaeological fieldwork.

Standards

1. Provide a brief (no more than two pages) plain language summary of the key activities, findings, conclusions and recommendations.
2. Do not include confidential, sensitive or personal information that cannot be made public (e.g., detailed site location, third-party information).

Guidelines

Table of contents

Standard

1. Provide page references for sections and subsections, as appropriate.

Guidelines

Project personnel

The purposes of providing information on project personnel are to confirm compliance with the terms and conditions of the licence and to assign appropriate credit to the individuals involved. It is the responsibility of the licensee to obtain consent to publish the names of project personnel in the report.

Standards

1. List all licensed, unlicensed, and specialist personnel who were involved in the archaeological fieldwork on the project and in producing the report. Provide the following information for each individual:
    a. name
    b. licence number (if applicable)
    c. position or role

Guidelines

Project context

This section of the report provides the context for the archaeological fieldwork and covers three areas: development context, historical context, and archaeological context.

Project context: Development context

Standards

1. Describe the development project in detail, specifying:
    a. The related legislation and condition or directive triggering the archaeological fieldwork,
    b. when the archaeological fieldwork occurred in the development process (e.g., pre-submission, pre-purchase),
2. Provide detailed information and mapping used to determine project area limits including:
    a. a description of all intended and probable impacts
    b. the intent or purpose of the project
    c. applicable legislation, regulation, standards and any other direction from the approval authority
    d. any direction, instruction, mapping or other information from the proponent
    e. if the project area has been reduced in accordance with Table 1.1 Standard 1, 2 or 3, include information detailing how the project meets the criteria outlined in the relevant standard
3. Provide any additional development-related information that may be relevant to understanding the choice of fieldwork strategy or the recommendations (e.g., municipal master plan, forest management area).
4. Provide statements confirming that the landowner or landowner's representative (e.g., planner, engineer, lawyer) gave permission for the licensee to access the project area to conduct all required archaeological fieldwork activities, including the recovery of artifacts, and state any limits placed on access (e.g., time limits, refusal of access to portions of project area).

Guidelines

Project context: Historical context

Standards

1. Describe the past and present land use and the settlement history, and any other relevant historical information gathered through the Stage 1 background study and Stage 3 historical documentation of post-contact archaeological sites.
2. In documenting the rationale for the choice of fieldwork strategy or for the recommendations you are making, include references to all other report(s) containing relevant background information (title, author and PIF number).

Guidelines

Project context: Archaeological context

Standards

1. Provide a summary of registered or known archaeological sites within a minimum one km distance from the project area limits.
2. Briefly describe the condition of the project area as found, including current land use(s), field conditions, soils or surficial geology, and topography.
3. Provide the dates of archaeological fieldwork.
4. Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area, as documented by all available reports that include archaeological fieldwork carried out on the lands to be impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50 m) to those lands
5. If previous findings and recommendations are relevant to the current stage of work, provide the following:
    a. a brief summary of previous findings and recommendations
    b. documentation of any differences in the current work from the previously recommended work
    c. rationale for the differences from the previously recommended work
6. Describe any unusual physical features that may have affected fieldwork strategy decisions or the identification of artifacts or cultural features (e.g., heavy and wet soils, dense root mats, boulders, rubble).
7. Provide any additional archaeological information that may be relevant to understanding choice of fieldwork techniques or the recommendations.

Guidelines

Advice on compliance with legislation

Standards

1. Advice on compliance with legislation is not part of the archaeological record. However, for the benefit of the proponent and approval authority in the land use planning and development process, the report must include the following standard statements:

    a. This report is submitted to the Minister as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry, a letter will be issued by the Ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

    b. It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Register referred to in Section 65.1 of the *Ontario Heritage Act*.

    c. Should previously undocumented archaeological sites be discovered the proponent or person discovering the archaeological sites must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

    d. *The Funeral, Burial and Cremation Services Act*, 2002, requires that any person discovering human remains must notify the police or coroner.

2. Reports recommending further archaeological fieldwork or protection for one or more archaeological sites must include the following standard statement: “Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.”

Guidelines

Bibliography and sources

Standards

Guidelines

1. Provide a complete list of all documentary sources cited, both written and oral, using standard bibliography format. Include all sources used as the basis for describing artifact categories or in support of sampling strategies.

Images

Standards

Guidelines

1. Images must be colour photographs, digital images or technical drawings. There must be no loss of focus or clarity for critical information. All written material must be clearly legible and it must be possible to distinguish artifact characteristics.
2. Whenever artifacts are recovered from an archaeological site, provide images documenting a representative sample of all categories of diagnostic artifact or formal tools including the following:
    a. representation from all components (periods of occupation) present on the archaeological site
    b. any artifact critical to dating or to assigning cultural affiliation
    c. full representation of 19th century decorated ceramic types, when present
    d. any unusual artifacts

Maps

There are specific mapping requirements for project reports for each stage. (Table 7.1 points to the sections in these Standards and Guidelines, relevant to each stage.) For all reports:

Standards

1. Provide a regional map of the general location of the project area at a scale no smaller than 1:50,000 and no larger than 1:25,000 (i.e., the scale of the map cannot be 1:51,000 or more, or 1:24,000 or less).
2. Provide clear copies of detailed development plans of the project area or maps of the project property. The following types of maps meet this requirement:
    a. a copy of the map accompanying the formal or proposed development application
    b. a concept or design map of the project area reflecting post-development changes
    c. a property perimeter map
    d. when none of the above types of plans or maps is available, provide the map, aerial photograph or other graphic representing the highest-quality image available for the property (hand-drawn sketch maps are not acceptable)
3. For archaeological fieldwork or reporting undertaken before development plans are in place (e.g., pre-application submission, assessment prior to purchase), include a map showing the property limit, accompanied by a copy of the proponent's instructions defining the limits of the project area.
4. Maps must relate existing land features and planned development changes to archaeological field data. Ensure that the scale and level of map detail allows for clear documentation of:
    a. current land conditions (e.g., topography, water, vegetation cover, built structures)
    b. planned development features affecting assessment decisions or recommendations (e.g., lots, servicing, roads, extraction areas, highway right-of-ways and staging areas)
    c. features and characteristics of the project area that support the analysis, conclusions, and recommendations in the report
5. For all photographs taken in the field, provide locations and orientation arrows on the appropriate mapping.

Guidelines

1. For large-scale linear corridors or forestry properties in northern Ontario, segment maps keyed to a small-scale (e.g., 1:100,000) map are acceptable.

Project report package: Supplementary documentation

Detailed site location information

Standards

1. Any information that pinpoints the location of an archaeological site (e.g., detailed Stage 2 findings map, table of GNSS coordinates for site locations) must not be included in the project report and should only be provided in the supplementary documentation. This allows the Ministry to exclude it from the Register, if necessary.

Guidelines

1. Maps providing general location information on properties or sites, or documenting fieldwork methods (e.g., site-specific survey or excavation maps), may be included in the body of the report.

Indigenous engagement

When background research or archaeological fieldwork includes engagement with Indigenous communities, the project report should include only the critical information arising from Indigenous engagement that affected fieldwork decisions, documentation, recommendations or the licensee's ability to comply with the conditions of the licence (e.g., with regard to the care of collections).

Further details and description of the process of engagement and copies of any documentation arising from the process of engagement should be included in the supplementary documentation. The draft bulletin on *Engaging Aboriginal Communities in Archaeology* provides additional guidance in reporting on Indigenous engagement.

Standards

1. Documentation of the engagement process must outline and give reasons for:
    a. who was engaged and why
    b. how they were engaged
    c. when they were engaged
    d. strategies used to incorporate input into the field work
    e. the process for reporting results of engagement to the community
2. Any information the Indigenous community identifies as private or sensitive (e.g., information related to burials, secret or sacred sites, personal information) is not to be included in the project report. Sensitive information must be provided separately with other supplementary documentation.

Guidelines

1. The documentation of the engagement arising from the specific project may be augmented by documentation of broader engagement undertaken with an Indigenous community in relation to classes of projects or types of sites (e.g., an Indigenous community may have previously expressed no interest in engaging regarding a particular type of archaeological site such as Archaic lithic scatters).

i. Other Correspondence and Supporting Documents

Standards

1. Include all Ministry advice regarding the project in a Supplementary Document.
2. Correspondence with the BAO, approval authority, proponent, etc., should be included in a Supplementary Document.
3. Include any correspondence or documents that are referred to in analysing the assessment results (e.g., geotechnical surveys, ploughs-person statements regarding soil conditions)

Guidelines

Related sections

7.3 Project report package (Overview)

7.4 Project report package: Project report

Project reports: Stage 1

The Stage 1 project report documents the background research and identifies areas of archaeological potential within the project area.

Refer to sections 7.3, 7.4 and 7.5 for the general requirements of project reports and project report packages.

Background

Standards

1. Describe the results of the research conducted for the background study and document the information sources used. It must be demonstrated that the standards for background research were met, as stated in section 1.

Analysis and conclusions

Standards

1. Identify and describe areas of archaeological potential within the project area.
2. Describe how the results of the background study support the assessment of archaeological potential (e.g., historic settlement maps, imagery).
3. Identify and describe areas that have been subject to extensive and deep land alterations. Describe the nature of alterations (e.g., development or other activity) that have severely damaged the integrity of archaeological resources and have removed archaeological potential. Documentary evidence demonstrating complete disturbance must be provided (e.g., historic aerial imagery) or Stage 2 assessment must be recommended.

Recommendations

Standards

1. Make recommendations regarding the archaeological potential of the project area, as follows:
    a. If some or all of the project area has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.
    b. If no part of the project area has archaeological potential, recommend that the project area does not require further archaeological assessment.
2. Recommend appropriate Stage 2 assessment strategies (see section 2: *Stage 2: Project Area Assessment* for more information).

Images

Standard

1. Provide images to document features indicating archaeological potential, to support the analysis, conclusions, and recommendations, and to assist in understanding the maps.

Maps

Standard

1. Provide mapping that meets the requirements specified in section 7.4.12.
2. Where lower quality mapping is the only available source of information, provide the following:
    a. a statement regarding the lack of availability of any higher quality mapping (e.g., thorough search done, personal knowledge of area)
    b. the degree to which the lower quality mapping may affect any evaluation of potential (e.g., certain features will not be shown or will not be shown accurately)
    c. any measures that were taken to compensate for the poor quality of the mapping (e.g., more conservative evaluations of potential)
3. Separately map each area recommended for Stage 2 assessment versus areas not recommended for Stage 2 assessment.
4. Separately map each class or category of no or low potential, i.e., map all wet areas as a category separately from all steep areas separately from all disturbed areas, etc.
5. Map the location of any archaeological sites located within 50m of the project area, as identified in the background study. If any of the archaeological sites have further cultural heritage value or interest this map must be included in Supplementary Documentation (Section 7.5.1, Standard 1).

Guidelines

Related sections

1	Stage 1: Background Study
2	Stage 2: Project Area Assessment
7.4	Project report package: Project report
7.5	Project report package: Supplementary documentation

Project reports: Stage 2

Stage 2 archaeological fieldwork and the archaeological sites that were identified within the project area are documented through a Stage 2 project report. The Stage 2 report should reference earlier Stage 1 reporting as appropriate.

Field methods

Standards

Guidelines

1. If the entire project area was not surveyed, document any exemptions (see section 2), as follows:
    a. For physical features of no or low archaeological potential, provide mapping showing the limits of those areas along with clear colour photographs or digital images.
    b. For disturbed areas, provide mapping showing the limits of those areas along with clear colour photographs or digital images.
    c. If parts of the project area were determined to be of no or low potential in a Stage 1 report, reference that report and map the limits of those low potential areas on the Stage 2 report mapping.
    d. For Ministry of Natural Resources forestry projects, reference the relevant forest plan and mapped impacts to confirm the basis for survey limitations.
    e. For areas that are excluded from the project, and they are being transferred to a public land-holding body, where those areas were not documented as exempt from survey on the basis of having no or low archaeological potential, provide documentation as follows:
        i. a map depicting the exact limits of the area
        ii. documentation describing how the limit of the area was determined during the survey and confirming that the area included enough overlap to ensure that all adjacent impacted lands were surveyed
        iii. a copy of confirmation from the proponent regarding the manner in which "no-go" instructions to construction crews will be implemented (in writing, by letter or e-mail, submitted as part of the supplementary documentation)
        iv. a statement from the approval authority (in writing, by letter or e-mail, submitted as part of the supplementary documentation) confirming that the approval of the development application will not authorize any impacts within that part, and
        v. a statement in writing (in writing, by letter or e-mail, submitted as part of the supplementary documentation) recognizing that the part that will be transferred to a public body has archaeological potential and further confirming that any future development will be preceded by archaeological assessment
2. As relevant, provide detailed and explicit descriptions:
    a. of how each standard was met
    b. of how each standard was addressed for survey generally
    c. of how each standard was addressed for pedestrian survey and test pit survey
    d. to address any differences in strategy for areas possessing different conditions

e. of how each standard was addressed where alternative methods acceptable through guidelines or special conditions were used

3. Provide estimates of the percentage of each of the following:
   a. the project area surveyed, by coverage (e.g., inspection, pedestrian survey, test pit survey) and survey interval
   b. the project area not surveyed because there were areas of no or low archaeological potential
   c. the project area where standard survey intervals could not be maintained due to pockets of exposed bedrock or other physical constraints
   d. The project area compared to the property (for small-scale impact projects where the project area must be less than 25% of the property)
4. Provide the information required by Section 5.1 Standard 1.
5. Provide the information required by Section 5.2

Record of finds

Document all finds according to the following standards. Do not document non-archaeological cultural heritage features (e.g., built heritage, cultural heritage landscapes) unless those features are part of or relevant to the archaeological record.

Standards

1. For all archaeological sites that are identified in Stage 2, provide the following:
    a. a general description of the types of artifacts and cultural features that were identified
    b. a general description of the area within which artifacts and cultural features were identified, including the spatial extent of the area and any relative variations in artifact density
    c. a catalogue and description of all artifacts retained (See section 6 Artifact Documentation and Analysis for requirements regarding artifact analysis and description.)
    d. a description of the artifacts and cultural features left in the field (nature of material, frequency, other notable traits)
2. Provide an inventory of the documentary record generated in the field (e.g., photographs, maps, field notes).
3. Submit information detailing exact site locations within the project area separately from the project report, as specified in section 7.6. Information on exact site locations includes the following:
    a. table of GNSS readings for locations of all archaeological sites
    b. maps showing detailed site location information

Guidelines

Analysis and conclusions

Standards

1. Summarize all findings from the Stage 2 survey, or state that no archaeological sites were identified.
2. For each archaeological site, provide the following analysis and conclusions:
    a. a preliminary determination, to the degree possible, of the age and cultural affiliation of any archaeological sites identified
    b. a comparison against the criteria in 2 Stage 2: Project Area Assessment to determine whether further assessment is required
    c. a preliminary determination regarding whether any archaeological sites identified in Stage 2 show evidence of a high level of cultural heritage value or interest and will thus require Stage 4 mitigation

Guidelines

Recommendations

When submitting a report that documents Stage 2 fieldwork, there may be different outcomes to be reported and consequently different recommendations. This section sets out standards for recommendations regarding the different possible outcomes.

Standards

1. When the entire project area has not been assessed, recommend that further archaeological assessment is required. No other recommendations shall be made regarding the archaeological assessment.
2. For each archaeological site, provide a recommendation including the following:
    a. Borden number or other identifying number
    b. whether or not it is of further cultural heritage value or interest
    c. where it is of further cultural heritage value or interest, appropriate Stage 3 assessment strategies (see section 3 S*tage 3: Site-Specific Assessment*)
3. When the entire project area has been assessed and archaeological sites are identified that are recommended to be of further cultural heritage value or interest make the following recommendations:
    a. A protected area is established for each archaeological site that is of further cultural heritage value or interest. The protected area of the archaeological site consists of the limits of the identified artifacts and cultural features plus a 50-metre buffer beyond those limits as shown on the relevant map.
    b. The protected area of each archaeological site of further cultural heritage value or interest is subject to the restrictions under Section 48(1) of the *Ontario Heritage Act*.
    c. A detailed avoidance strategy will apply to each archaeological site of further cultural heritage value or interest if the landowner or development proponent chooses to proceed with development prior to the completion of mitigation of impacts of all archaeological sites of further cultural heritage value or interest.
    d. A signed letter has been provided by the landowner or development proponent (submitted as part of supplementary documentation) stating:
        i their awareness of the presence and extent of the protected area of the archaeological sites as shown on the relevant map within the report
        ii their awareness that each archaeological site of further cultural heritage value or interest is subject to the restrictions against alterations under Section 48(1) of the *Ontario Heritage Act*
        iii confirmation of a commitment to implement the avoidance strategy and confirmation that ground alterations (e.g., servicing, landscaping)

will avoid the protected area of each archaeological site

e. Include a statement that any areas within the project area that are outside or beyond the limits of the protected areas of archaeological sites do not require further archaeological assessment and there is no further concern for the conservation of archaeological sites for those areas.

4. Recommend that no further archaeological assessment is required for the project area when the entire project area has been assessed and one of the following criteria has been met:
   a. No archaeological sites were identified, or
   b. All identified archaeological sites are recommended to be of no further cultural heritage value or interest
5. Make recommendations only regarding archaeological sites and archaeological assessment. Recommendations regarding built heritage or cultural heritage landscapes should not be included.
6. For each recommendation, include a reference to the most relevant map.

Images

Standards

1. Provide images documenting examples of the following conditions within the project area:
   a. current land conditions. Provide a representative sample of parts of the project area that will confirm that the conditions allowed the standards for pedestrian survey and test pit survey to be met
   b. unusual physical features that may have affected the ability to survey the project area

Guidelines

Maps

Standards

Guidelines

1. In addition to the general requirements for mapping specified in section 7.4.12, provide mapping of the project area showing the following:
   a. all areas surveyed, by survey method and interval
   b. all areas not surveyed, by type, including but not limited to those types as listed in Section 2.1 Standard 4 (e.g., permanently wet, steep slope, exposed bedrock, disturbance, areas being transferred to a public land-holding body)
   c. locations and limits of all archaeological sites including locations of all identified artifacts (isolated artifacts, extent of surface scatter, locations and extent of positive test pits)
   d. any parts of the project area which require further archaeological assessment with those parts labelled as "further assessment recommended."

2. When the archaeological assessment of the project area is complete and there are archaeological sites recommended to be of further cultural heritage value or interest, provide a separate map of the project area showing:
   a. the limits of the protected area of each archaeological site recommended for further assessment or mitigation, showing the limits of buffer zones.
   b. the remainder of the project area that is recommended to not require further archaeological assessment

3. Where the project area does not consist of one or more complete properties:
   a. Provide a map that identifies:
      i. The limits of the project area,
      ii. The perimeter of each property that contains any part of the project area, and
   b. Provide a map that depicts:
      i. the extent of all proposed impacts (including but not limited to stockpiling, temporary and permanent access routes), and
      ii. the minimum 10-metre buffer extending outward from the limits of all proposed impacts

Related sections

2 Stage 2: Project Area Assessment

3	Stage 3: Site-specific Assessment
4	Stage 4: Mitigation of Development Impacts
5	Geospatial Data Documentation
6	Artifact Documentation and Analysis
7.4	Project report package: Project report
7.5	Project report package: Supplementary documentation

Project reports: Stage 3

All archaeological sites give us information about the past and reflect the human history of Ontario, but some are determined to have greater cultural heritage value or interest than others. The Stage 3 project report documents the additional archaeological fieldwork, research and engagement that was carried out as a result of recommendations made at the completion of Stage 2. The Stage 3 assessment report will result in recommendations as to whether an archaeological site requires Stage 4 mitigation of impacts or a recommendation that there are no further concerns for impacts to that site.

The Stage 3 results and recommendations for each archaeological site may be reported separately or the Stage 3 for several sites within the project area may be documented in one report.

Field methods

Standards

1. Confirm that the fieldwork was conducted according to the archaeological fieldwork standards and guidelines, including those related to weather and lighting conditions.
2. Provide detailed and explicit descriptions of how each standard was addressed where alternative methods acceptable through guidelines or special conditions were used.
3. Provide the information required by Section 5.1 Standard 1.
4. Provide the GNSS coordinates of the datum location, GNSS readings locating a central fixed point, and, if applicable, any other relevant information that will aid in re-locating the datum. This information must be provided in the supplementary documentation, not in the main body of the report.
5. For controlled surface pick-up (CSP), provide the following:
    a. description of the CSP methods and confirmation that the methods met the standards and guidelines for archaeological fieldwork
    b. rationale for artifact collection
6. For test unit excavations, provide the following:
    a. description of the test unit excavation methods and confirmation that the methods met the standards and guidelines for archaeological fieldwork
    b. description of the test unit grid (location and number of test units), rationale for the grid strategy, and confirmation that the strategy met the standards and guidelines for archaeological fieldwork
    c. description of the general depth of the plough zone and variations in the depth over the area excavated

Guidelines

Record of finds

Standards

1. Describe features uncovered in the excavations, including plan and any information that is visible without excavation of feature fill and contents.
2. Describe artifact distributions and frequencies on the surface and in test units, including reference to distinct activity areas or artifact patterning and to single-component areas.
3. Provide a catalogue and description of all artifacts collected from the surface and from test units. (See section 6: *Artifact Documentation and Analysis* for requirements regarding artifact analysis and description.)
4. Provide observations of unusual or unexpected findings.
5. Provide an inventory of the documentary record generated in the field (e.g., photographs, maps, field notes).

Guidelines

Analysis and conclusions

Standards

1. Provide a determination of the age and cultural affiliations of each archaeological site for which Stage 3 assessment was carried out.
2. Discuss the correlation between the archaeological findings and historical documentation. The historical documentation may include the findings of previous reports (e.g., Stage 1 report, research reports about the property and/or project area).
3. Compare analysis and conclusions for each archaeological site with current archaeological knowledge for this type of site. If analysis, conclusions and recommendations are different from the broader archaeological knowledge for a type of site, outline the basis for this differing interpretation.
4. Provide an evaluation of the level of cultural heritage value or interest for each archaeological site for which Stage 3 was carried out.

Guidelines

Recommendations for Stage 4

Standards

1. If it is concluded that an archaeological site has further cultural heritage value or interest, make recommendations on appropriate Stage 4 mitigation strategies (see section 4 *Stage 4: Mitigation of Development Impacts)*, as follows:
    a. Recommendations must be informed by input from Indigenous communities for the types of Indigenous archaeological sites specified in 3.5 *Formulation of Stage 4 strategies*.
    b. Recommendations must be detailed enough to give a clear and accurate understanding of the actions required.
    c. If reporting on more than one archaeological site in one report, make recommendations for each site individually.
2. For archaeological sites that have further cultural heritage value or interest that requires Stage 4 mitigation of impacts, the preferred approach is avoidance and protection. The report must include a summary of the advice provided to the proponent regarding protection and avoidance, including the results of engagement with Indigenous and other communities
    a. If it is determined that avoidance and protection is the preferred approach, provide that recommendation, including the details of the proposed approach including appropriate avoidance and long-term protection strategies. For details, see section 4.1 *Approach 1: Avoidance and Protection*.
    b. If it is determined that avoidance and protection is not viable, provide the basis for that determination.
3. If it is determined that excavation is the preferred approach to Stage 4 mitigation of impacts, the recommendation must include:
    a. a detailed strategy for excavation and documentation, based on 4.2 *Approach 2: Excavation,* and
4. a protected area of the archaeological site that will consist of the area enclosed by the site limits as defined by Stage 3 assessment plus a 10 or 20 metre protective buffer as appropriate (Section 4.1, Standard 2), and
    b. A statement that the protected area of each archaeological site of further cultural heritage value or interest is subject to the restrictions under Section 48(1) of the *Ontario Heritage Act*, and
    c. A statement of a detailed avoidance strategy that will apply to each archaeological site of further cultural heritage value or interest if the landowner or development proponent chooses to proceed with development prior to the completion of mitigation of impacts for all archaeological sites of further cultural heritage value or interest. and
    d. A statement that a signed letter has been provided by the landowner or development proponent stating:
        i. their awareness of the presence and extent of the protected area of the archaeological sites as shown on the relevant map within the report, and

Guidelines

ii. their awareness that each archaeological site of further cultural heritage value or interest is subject to the restrictions against alterations under Section 48(1) of the *Ontario Heritage Act*

iii. confirmation of a commitment to implement the avoidance strategy and confirmation that ground alterations (e.g., servicing, landscaping) will avoid archaeological sites with outstanding concerns and their protective buffer areas

4. If it is determined that long-term protection is the preferred approach to Stage 4 mitigation of impacts, the recommendation must include a detailed description of the preferred protection mechanism. For details, see section 4.1.4 *Long-term protection*.
5. If it is determined that the site has no further cultural heritage value or interest at the conclusion of Stage 3, recommend that Stage 4 mitigation of impacts is not required for the site.
6. Provide a summary of the archaeological sites that continue to be of further cultural heritage value or interest and the recommended strategy for further assessment or mitigation of impacts for each archaeological site with reference to mapping.
5. Provide a recommendation stating that all or part of the project does not require further archaeological assessment and there is no further concern for the conservation of archaeological sites within that part and include reference to mapping.

Images

Standards

1. Provide images documenting the following:
   a. field conditions for each instance of CSP or of test unit excavation. Provide additional documentation if instances of CSP or test unit excavations are carried out at widely separated time intervals (i.e., multiple weeks apart or enough time has elapsed to result in changed field conditions). Provide a minimum of two images for each instance of CSP or test excavation.
   b. all stratigraphy and cultural features
   c. unusual physical features

Guidelines

Maps

Standards

1. In addition to the general requirements for mapping specified in section 7.4.12, provide mapping at a scale that is appropriate to clearly document the following:
   a. location of the fixed datum
   b. locations and extent of all archaeological sites subject to Stage 3 site-specific assessment
   c. locations and extent of archaeological sites recommended for Stage 4
2. When a more detailed scale is needed to clearly show Stage 3 results, provide additional maps at a larger scale to document the following:
   a. the limits and extent of the archaeological site defined by Stage 2 findings (e.g., surface scatter, extent of positive test pits)
   b. locations of artifacts identified during the CSP
   c. the locations of test unit excavations and cultural features
   d. all artifacts in counts of yields. Where relevant and applicable to the analysis of the archaeological site, provide mapping of the distribution of different classes of artifacts and ensure that mapping provides separate counts for each per stratum. (Do not combine counts of artifact yields from multiple strata.)
3. File information detailing exact site locations on the property separately, as specified in section 7.6 *Project report package: Supplementary documentation.*

Guidelines

Supplementary documentation

Standards

1. When an archaeological site is evaluated as having a Stage 4 level of cultural heritage value or interest primarily because of community interest or possible status as a public resource, include supporting documentation (e.g., copies of correspondence).
2. Provide documentation of community engagement, regarding recommendations for Stage 4 mitigation strategies. Include the following (as appropriate):
   a. engagement with Indigenous communities
   b. review with the proponent of the viability of avoidance strategies

Guidelines

Documentation supporting a recommendation for avoidance and protection

Standards

1. If the approval authority and proponent support the recommendation for protection and avoidance, file the following with the project report, as appropriate:
    a. documentation confirming support of the strategy (e.g., letter from the approval authority, copy of the draft or final formal long-term protection provision)
    b. documentation from the proponent confirming measures to ensure avoidance during construction
    c. a schedule for inspection and monitoring during and after construction
    d. clear colour photographs or digital images documenting the processes of covering exposed features, shoring up exposed profiles, and re-sealing deeply buried deposits, as appropriate; at a minimum, images from before, during and after each process, each from two locations or views
    e. a large-scale section of the development plan that clearly shows the following:
        i the location of the archaeological site recommended for protection
        ii the protective buffer around the site
        iii the limits of the area that will be subject to long-term protection (e.g., lots, blocks, etc., that will be protected)

Guidelines

Related sections

3	Stage 3: Site-specific Assessment
4	Stage 4: Mitigation of Development Impacts
4.1	Approach 2: Avoidance and protection
4.2	Approach 2: Excavation
6	Artifact Documentation and Analysis
7.4	Project report package: Project report
7.5	Project report package: Supplementary documentation
7.7	Project reports: Stage 2

Project reports: Stage 4 avoidance and protection

Reports on inspection and monitoring of avoided and protected archaeological sites during grading and other soil disturbing activities and reports on the success of protection and avoidance strategies are intended to briefly document activities carried out to mitigate land use development activities that might place an archaeological site at risk.

These reports are filed when the report is confirming that land use development activities did not impact or alter avoided and protected archaeological sites.

If avoided and protected archaeological sites are impacted or altered, or if previously unidentified archaeological sites are encountered during monitoring, the appropriate assessment and mitigation stages must be completed and reported following the standards and guidelines for those stages.

Report content

Standards

1. Reports on these activities must include the following:
    a. reference to and brief summaries of previous archaeological fieldwork reports recommending protection and avoidance and/or monitoring
    b. description of the fieldwork and/or monitoring carried out, including the following:
        i dates of fieldwork
        ii location of fieldwork
        iii field conditions
        iv the construction, grading or other development activities monitored
        v equipment used to remove soil or fill
        vi observations of subsurface cultural features, stratigraphy and soil composition
        vii confirmation that construction, grading or other development activities did not alter or impact any protected areas of archaeological sites
2. If development activities cause new archaeological sites, features or artifacts to be identified, or any archaeological site to be altered or impacted:
    a. Describe the archaeological sites, features or artifacts identified.
    b. Describe the immediate steps taken to mitigate impacts.
    c. Provide recommendations for any further Stage 3 assessment or Stage 4 mitigation actions that may be necessary.

Guidelines

Images

Standards

1. Provide a minimum of two images documenting inspection and monitoring activity.

Guidelines

Maps

Standards

1. In addition to the general requirements for mapping specified in section 7.4.12, provide mapping at a scale that is appropriate to clearly document the following:
    a. location and extent of protected and avoided and/or monitored areas
    b. location of any unidentified archaeological sites, artifacts or features not documented through previous archaeological fieldwork

Guidelines

Related sections

3	Stage 3: Site-specific Assessment
4.1	Approach 1: Avoidance and protection
7.4	Project report package: Project report
7.5	Project report package: Supplementary documentation
7.7	Project reports: Stage 2
7.8	Project reports: Stage 3

Project reports: Stage 4 excavation

When an archaeological site is removed through excavation, the report on the excavation becomes an important document in the archaeological record of Ontario.

Each site subject to Stage 4 excavation requires a separate report. In certain circumstances, consultant archaeologists may also file a preliminary excavation report.

Field methods

Standards

1. Summarize the archaeological fieldwork carried out, including the following:
    a. Confirm that the fieldwork was conducted according to the archaeological fieldwork standards and guidelines, including those related to weather and lighting conditions.
    b. Provide the information required by Section 5.1 Standard 1.
    c. Provide GNSS coordinates of the datum location and a description of the site grid. This information must be provided in the supplementary documentation, not in the main body of the report.
    d. Describe the decisions made in the field regarding the determination of the placement of excavations and the extent of excavations.
    e. Where appropriate, describe methods used to remove topsoil or fill, including the machinery used (if applicable), and the monitoring of topsoil or fill removal.
    f. For partial excavations, describe the methods used to shore up the exposed edges of any intact deposits before backfilling.
    g. Describe the methods used to record and map the following:
        i settlement patterns, artifact contexts and stratigraphy
        ii cultural feature plans and profiles
        iii deeply buried or previously undisturbed sites

Guidelines

Record of finds

Standards

1. Describe each cultural feature, in text or table format, including the following information:
    a. plan and profile
    b. measurements
    c. soil composition and stratigraphy
    d. number of flotation samples taken, by context
    e. for invisible or ghost cultural features, plotting of finds and the estimated shape and depth of the original feature
2. For sites where artifact concentrations or specific classes of artifacts were piece-plotted, describe the extent and distribution.
3. Describe settlement and site function patterns (e.g., structures, walls, tool production areas, food preparation areas).
4. Provide a catalogue and description of all artifacts collected. Include records of cross mends on diagnostic artifact fragments. (See section 6 *Artifact Documentation and Analysis* for requirements regarding artifact analysis and description.)
5. Provide an inventory of the documentary record generated in the field (e.g., photographs, maps, field notes).

Guidelines

Analysis and conclusions

The Stage 4 report must contain enough data analysis to provide a basic record of the archaeological site for the Register. The following standards set out the minimum requirements.

Standards

1. Provide analysis and conclusions regarding the cultural history of the archaeological site, including the following:
   a. cultural affiliation
   b. dates or age
   c. place in the context of the archaeological history of Ontario
2. Provide analysis and conclusions regarding the development and use history of the archaeological site, including the following:
   a. site type
   b. depositional events
   c. settlement and structural organization
   d. functional areas
   e. evidence of ceremonial or ritual use
   f. evidence of group or individual expression
3. For historical archaeological sites, provide historical documentation from previous Stages, as available.

Guidelines

Recommendations

Standard

1. When an archaeological site has been fully excavated and documented to the extent required under these Standards and Guidelines, state in the recommendations that the site has no further cultural heritage value or interest.

Guidelines

Images

Standards

1. Provide plans and profiles of all cultural feature types that contribute to the analysis of the archaeological site.
2. For sites with complex stratigraphy, provide a map of stratigraphic profiles depicting all important depositional events or operations.
3. Provide clear colour photographs or digital images documenting the following:
   a. field conditions at the times of excavation, minimum of two images from different directions
   b. representative samples of cultural features or stratigraphy, minimum of five images
   c. unusual physical features affecting fieldwork strategy decisions or the identification of artifacts or cultural features (e.g., heavy and wet soils, dense root mats, boulders, rubble), minimum of two images per type of feature

Guidelines

Maps

Standards

1. Provide detailed, clear copies of the development plans or maps of the project area, or a large scale section, showing the location of the Stage 4 site area. These maps should meet the general requirements for mapping found in section 7.4.12, and should relate existing land features and planned development changes to archaeological field work. The scale must be appropriate to clearly document the following:
    a. locations of areas subject to temporary or permanent protection and avoidance
    b. the extent of Stage 4 excavations and periphery testing, showing this work in relation to the following (as applicable):
        i locations of Stage 2 positive test pits
        ii locations of artifacts found in Stage 3 controlled surface pick-up
        iii locations of Stage 3 test unit excavations
    c. the extent of topsoil or fill removed
    d. details of Stage 4 unit excavations, with notation of artifact yields per unit
    e. all artifacts in counts of yields. Where relevant and applicable to the analysis of the archaeological site, provide separate mapping of the distribution of different classes of artifacts and ensure that mapping provides separate counts for each stratum. (Do not combine counts of artifact yields from multiple strata.)
    f. all settlement patterns and cultural features documented
2. For sites with complex data, the information may be presented on multiple maps, of the same scale and referenced to the same datum.

Guidelines

Preliminary excavation reports

A preliminary excavation report is intended to accommodate the need for a development to be able to proceed when all archaeological fieldwork for an archaeological site is complete and while the full project report is being prepared. Upon review of a satisfactory preliminary excavation report, the Ministry can issue a letter stating that there are no further concerns related to an archaeological site. However, the full report must be filed by the filing deadline and accepted by the Ministry in order to satisfy *Ontario Heritage Act* licensing requirements. Given that a preliminary excavation report does not provide the complete record of the archaeological site, the following standards apply.

Standards

1. A preliminary excavation report may be filed if all of the following conditions are met:
   a. the area of the archaeological site is large (a block excavation of over 50 one-metre-square units, or an equivalent area)
   b. Stage 2 and 3 reports have been filed with the Ministry and accepted into the Register
   c. the archaeological site has been completely removed by excavation
   d. all archaeological fieldwork complied with the Standards and Guidelines and addressed the recommendations in the Stage 2 and 3 reports

Guidelines

Preliminary excavation report contents

Standards

1. Provide the following sections of a complete report package in the normally required format:
   a. project report cover page
   b. executive summary
   c. project personnel
   d. project background
   e. recommendations
2. Provide partial information for the following sections of a complete report package in the normally required format:
   a. brief summary of archaeological fieldwork and findings
   b. images of artifacts as required by section 7.4.11
3. Provide detailed, clear copies of the development plan or maps of the project area, or a large-scale section, showing the location of the Stage 4 site area. These maps should relate existing land features and planned development changes to archaeological fieldwork. The scale must be appropriate to clearly document the following:
   a. location of the fixed datum
   b. the extent of Stage 4 excavations and periphery testing showing this work in relation to the following (as applicable):
      i locations of Stage 2 positive test pits
      ii locations of artifacts found in Stage 3 controlled surface pick-up
      iii locations of Stage 3 test unit excavations
   c. the extent of topsoil removed
   d. details of Stage 4 unit excavations, with notation of artifact yields per unit
   e. all settlement patterns documented

Guidelines

Related sections

3 Stage 3: Site-specific Assessment

4.2 Approach 2: Excavation

6 Artifact Documentation and Analysis

7.4 Project report package: Project reports

7.5 Project report package: Supplementary documentation

7.8 Project reports: Stage 3

Site forms

Site forms are used to provide basic documentation from licensees for newly discovered archaeological sites (using site record forms) and to document further archaeological fieldwork at later dates (using site update forms). These forms are also known as Borden forms.

The Ministry enters the information in the Ontario Archaeological Sites Database, an inventory of the documented archaeological record in Ontario. Information in the database is available on request to licensees, and to other groups or individuals subject to a data-sharing agreement with the Ministry.

Standards

1. File a separate site record form for each newly identified archaeological site that meets at least one of the criteria stated below in terms of numbers of artifacts or presence of features:
   a. three or more pre-19th century artifacts found within a 10 m radius
   b. ten or more 19th century artifacts found within a 10 m radius
   c. a single pre-19th century diagnostic artifact or archaeological feature (e.g., petroglyph)
   d. post-19th century archaeological resources warranting documentation, as determined by the licensee
2. Site forms are not accepted in any of the following situations:
   a. the characteristics of a location do not meet any of the criteria stated in Standard 1
   b. the information about the archaeological site was not acquired through archaeological fieldwork carried out by a licensed archaeologist
   c. no artifact or other physical evidence was documented
   d. information is based only on documentary research or informant reporting
3. File a separate site update form after each separate instance of archaeological fieldwork at a known archaeological site. (Only one site update form would be required for one archaeological assessment project).
   a. Inspections constitute archaeological fieldwork. Regardless of whether later stages of archaeological fieldwork are carried out, site update forms are required to report on the site's condition and inspection methodology and results.
   b. Site update forms are required regardless of whether the known archaeological site is successfully relocated or not. In this case, the site update form documents the attempt to relocate the site and the result.
4. The site form must be filed by the report filing deadline specified by the Ministry. Please refer to the associated bulletin on archaeological sites for further details.

Guidelines

Related sections

7.3.4 Project report package: Site forms

Glossary

The following definitions pertain to these Standard and Guidelines and may differ from dictionary definitions of the words. *Italicised* words are defined in this glossary.

agency land holdings
: Land owned by an agency of the Ontario government, such as Infrastructure Ontario or the Ontario Heritage Trust.

approval authority
: In the land use and development context, this includes any public body (e.g., municipality, conservation authority, provincial agency, ministry) that has the authority to regulate and approve development *projects* that fall under its mandate and jurisdiction (e.g., *Planning Act*, *Environmental Assessment Act*, *Aggregate Resources Act*).

archaeological assessment
: For a defined project area or property, a *survey* undertaken by a licensed archaeologist within those areas determined to have *archaeological potential* in order to identify *archaeological sites*, followed by evaluation of their *cultural heritage value or interest*, and determination of their characteristics. Based on this information, recommendations are made regarding the need for mitigation of impacts and the appropriate means for mitigating those impacts.

archaeological management plan
: A document that provides an inventory of *archaeological sites*, develops a municipality or region-specific mechanism for determining *archaeological potential*, and maps *archaeological potential* for the municipality. It will also state the municipality's policies and processes for the management of *archaeological resources*. It may also include a summary of the municipality's cultural history, means for promoting and educating the community about archaeological conservation, local strategies for storing and curating archaeological materials, and other issues related to conservation of *archaeological resources* within the community.

archaeological potential
: The likelihood that a given area contains *archaeological sites*.

archaeological site
: Defined in by Ontario Regulation 170/04 as "any property that contains an *artifact* or any other physical evidence of past human use or activity that is of cultural heritage value or interest".

archaeological survey
: The process followed in order to make initial identifications of *archaeological sites*. This may consist of pedestrian survey of ploughed fields, test pitting, the use of mechanical equipment in specific deeply buried or urbanized situations, or remote sensing. Survey is a part of the overall *archaeological assessment* process.

artifact
: Defined in Ontario Regulation 170/04 as "any object, material or substance that is made, modified, used, deposited or affected by human action and is of *cultural heritage value or interest*". As per that regulation, an archaeological site is determined to be present where an artifact is identified.

available and relevant information
: Any information or source of information that a licensed archaeologist should normally and reasonably be aware of in terms of its availability for a given area of the Province and that is demonstrably of use in analysis and interpretation for a given project.

avocational archaeologist
: A person who carries out archaeological studies and fieldwork for no pay. In Ontario, this person requires an Avocational licence issued by the Ministry to carry out fieldwork.

avoidance

The process by which alterations to an *archaeological site* are prevented during the time period during which development activities are undertaken.

brownfield
A property within an urbanized area that has previously been intensively developed.

Canadian Shield (also known as Precambrian Shield)
The part of Canada underlain by ancient, granitic, pre-Cambrian rock that has been largely unaffected by later geological episodes.

chisel plough
A plough equipped with narrow, double-ended shovels, or chisel points, mounted on long shanks. These points rip through the soil and stir it but do not invert and pulverize it to the same degree as the moldboard and disk ploughs. The chisel plough is often used to loosen hard, dry soils prior to using regular ploughs.

construction monitoring
The process of a licensed archaeologist observing excavation carried out by others to identify any archaeological site that may be present.

consultant archaeologist
Defined in Ontario regulation as "an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client". Such archaeologists are required to hold a valid professional archaeological licence issued by the Ministry pursuant to the *Ontario Heritage Act* and Ontario Regulation 8/06.

cultural feature
The physical remains of human alteration at a given location that cannot be removed intact and are not portable in the way that *artifacts* can be removed and are portable. Typically, a cultural feature must be documented in the field, although samples can be taken. Examples include post molds, pits, living floors, middens, earthworks, and various historic structural remains and ruins.

cultural heritage value or interest
For the purposes of the *Ontario Heritage Act* and its regulations, *archaeological sites* that possess cultural heritage value or interest are protected under Section 48 of the act. Where analysis of documented *artifacts* and physical features at a given location meets the criteria stated in the Standards and Guidelines such that it is of further *cultural heritage value or interest*, that location is a protected *archaeological site*.

diagnostic artifact
An *artifact* that indicates by its markings, design or material the time period it was made, the cultural group that made it, or other data that can identify its original context.

faunal analysis
The scientific analysis of the remains of animals found at an archaeological site.

forest management unit
An area of Crown forest designated under section 7 of the *Crown Forest Sustainability Act*, 1994.

formal tool
Most often a stone *artifact* with a form or design that indicates the reason it was made, like a stone spearpoint or hide scraper. Contrasted with an informal tool, like a chert flake used for cutting.

geophysical survey
Surface-based physical sensing techniques used for archaeological imaging or mapping of subsurface artifacts and features.

grid

A two-dimensional series of regularly spaced locations across an *archaeological site* or other area, often at either one-, five- or ten-metre intervals.

guideline

In this document, an optional instruction or good practice. Readers can carry out the stated activity if they want to or if circumstances indicate the practice is an acceptable alternative to the *standard*. Generally uses the word "may".

Indigenous communities

Used inclusively in this document to refer to First Nation communities (also known as "bands" under the *Indian Act*), Métis communities, and communities of other Aboriginal peoples who identify themselves as a community, such as those living in urban centres or those belonging to an Indigenous Nation or tribe that encompasses more than one community (e.g., the Pottawatomi, Mississauga, Mohawk).

inspection

A detailed in-person visual examination of the complete extent of a *project area* with the objective of identifying and confirming presence of features of *archaeological potential* and with the further objective of supporting the preparation and design of the survey strategy for areas of high *archaeological potential*.

licensee

A person holding an archaeological licence as per Ontario Regulation 8/06.

linear corridor

A *project area* which is substantially longer than it is wide.

lithic scatter

A distribution of stone flakes and tools found on the surface of a ploughed field.

midden

An area of an *archaeological site* that has a concentration of *artifacts* and other remains that are usually interpreted as being the result of intentional discard focused at that location. Can include organic matter, stone tools, pottery, paint cans, building debris or anything discarded by the original inhabitants.

Ministry

The Ministry of Citizenship and Multiculturalism or any successor ministry which has authority for the *Ontario Heritage Act*.

mitigation of impacts

Following the identification and assessment of an archaeological site, a strategy intended to achieve the most effective conservation of an *archaeological site* of further *cultural heritage value or interest* within the context of the development project.

non-specialist

An individual who does not have training or experience in a particular set of methods of fieldwork or analysis. For example, an archaeologist who did not have expertise in faunal analysis would be a non-specialist for that type of analysis. An archaeologist who did not have training in *geophysical survey* would be a non-specialist for that method.

Ontario Public Register of Archaeological Reports

The collection of reports on licensed archaeological fieldwork in Ontario, as prescribed by Section 65 of the *Ontario Heritage Act*.

piece-plotting

The process of recording the precise three-dimensional location of each *artifact* as found within an *archaeological site*, or a part of an *archaeological site*. For example, one might piece-plot each *artifact* within a given pit feature.

post-contact period

The time period following the date Europeans made first contact with North American Indigenous peoples. In Southern Ontario, roughly after 1650; in Northern Ontario, at later dates depending on the time at which European explorers first arrived in a region.

pre-contact period

The time period before the date Europeans made first contact with North American Indigenous peoples. In southern Ontario, roughly before 1650; in northern Ontario, at later dates depending on the time at which European explorers first entered into an area.

professional archaeologist

In Ontario, a person holding a professional licence under Ontario Regulation 8/06.

project

Within the context of the Standards and Guidelines, a development of a specified area within a defined time period. An *archaeological assessment* is carried out for a *project* with the objective of ensuring that appropriate *mitigation of impacts* is carried out for any *archaeological site* that may be present within the *project area*.

project area

The lands to be impacted by the project, e.g.: the area of a development application under the *Planning Act*; the area to be licensed under the *Aggregate Resources Act*; the area subject to physical alteration as a result of the activities associated with the project. This may comprise one or several *properties*, or parts of a property or several properties, and these properties may or may not be adjoining. However, all the properties must be part of one project that is being undertaken by one *proponent*.

Project Information Form (PIF)

The form archaeological licence-holders must submit to the Ministry upon deciding to carry out fieldwork. See section 7.1 *Project Information Form*.

property

Section 47 of the *Ontario Heritage Act* defines "property" as "real property". "Real property" can be defined as a parcel of land or water as identified and defined through Ontario's land titles registration system.

proponent

An entity, consisting of individuals, private corporations or government bodies, that is undertaking a development project.

protection

Measures put in place to ensure that alterations to an *archaeological site* will be prevented over the long-term period following the completion of a development project.

protected area

Includes the protected *archaeological site* and the associated *protective buffer*.

protective buffer

A protective zone surrounding the entire *archaeological site* extending outwards from the site limits for a set distance, e.g., a 10-metre buffer. No alterations or soil disturbance are allowed within the protective buffer.

public body

Any body constituted under legislation of Ontario that has the authority to own, control or manage land. This includes certain ministries, agencies of the province, municipalities under the Municipal Act, conservation authorities and other comparable public bodies.

stakeholder

Anyone with an interest in the *property* or *archaeological site* in question.

standard

In this document, a mandatory instruction or practice that the reader is required to carry out if they are doing the stated activity. Uses the words “must” or “shall” or “will”.

stratigraphy

The vertical layering of soil, sediment and debris where layers are distinguished by their differential colouring and composition. The stratigraphic layers are characterized in terms of their origin in geological processes and their association with cultural events or occupations.

survey transect

A line of shovel test pits or a walking path across a cultivated field along which archaeological survey is carried out.

survey

See *archaeological survey.*

test pit

A usually round hole about the diameter of a standard shovel blade dug to subsoil at regular intervals along a *survey transect*. The excavated soil is sifted through 6 mm mesh to look for *artifacts*.

test unit

A square hole, 1 m by 1 m in its horizontal dimensions and of variable depth, excavated according to certain standards. Test units are excavated to obtain further information about an *archaeological site* subsequent to its discovery.