CONSERVING A FUTURE FOR OUR PAST:

Archaeology, Land Use Planning & Development In Ontario

AN EDUCATIONAL PRIMER AND COMPREHENSIVE GUIDE FOR NON-SPECIALISTS

1997 (in Revision 2005)

MINISTRY OF CULTURE
Heritage & Libraries Branch, Heritage Operations Unit
PREFACE

This primer is intended to review all aspects of conserving the province's archaeological heritage in various land use planning and development review processes. This document is intended both for those individuals involved with the day to day requirements of addressing issues associated with archaeological resource conservation under these processes, as well as anyone else interested in the conservation and management of Ontario's heritage.

Section 1 Provides introductory and explanatory information, and the legislative context for archaeological conservation within Ontario's development processes.

Section 2 Summarises the means by which municipal approval authorities and provincial development agencies can incorporate and plan for archaeological conservation needs into their respective activities.

Section 3 Outlines the concept of archaeological potential, and how to identify archaeological concerns, when considering possible impacts to archaeological sites tied to any particular development project or study area.

Sections 4-6 Reviews the activities that occur when archaeological concerns are identified for a development property, and details how archaeological sites, once found on these properties, are managed.

Additionally, placed throughout this manuscript are a series of ARCHAEOLOGY 101 pages, which provide an illustrated review of some of the key, basic concepts concerning the practice of archaeology, and the conservation of archaeological resources as a part of land use development activities.

Author Credits

Staff of the Heritage Operations Unit, Heritage Libraries Branch
Ontario of Ministry and Culture
(Neal Ferris, co-ordinator)

1997 (in revision 2005)
- IMPORTANT NOTE -

The technical advice and direction in this guide derives from the Ministry of Culture, which has been mandated the provincial interest and responsibility for Ontario's archaeology under the Ontario Heritage Act RSO 1990.

It is important to note, however, that the protection and conservation of these heritage resources, when tied to particular development activities, is also enabled by statutes such as the Environmental Assessment Act, Aggregates Resources Act, Planning Act, etc. It is important to recognise, therefore, that this guide is not intended to insert an additional layer of interpretation on those legislative processes. Rather, this guide should be read as providing background and technical "how to" advice for addressing archaeological site conservation needs and Ontario Heritage Act requirements when the need for that conservation is being addressed through a legislated development process.

Any questions regarding the interpretation or intent of these broader land use processes should be directed to the relevant Ministry or agency. The following are some general inquiry numbers for some of the development planning agencies in Ontario:

AGGREGATE RESOURCES ACT, CROWN LANDS, ONTARIO PARKS, FORESTRY
   Ministry of Natural Resources
   Information Centre 1-800-667-1940

CEMETERIES ACT
   Ministry of Government Services
   Cemeteries Regulation Unit 1-800-268-1142

ENVIRONMENTAL ASSESSMENT ACT
   Ministry of Environment
   Environmental Assessment & Approvals Branch 1-800-461-6290

NIAGARA ESCARPMENT PLANNING AND DEVELOPMENT ACT
   Niagara Escarpment Commission 1-905-877-5191

PLANNING ACT*
   Ministry of Municipal Affairs & Housing
   Provincial Planning & Environmental Services Branch 1-416-585-6014

*If the municipality in your area is the approval authority, contact them directly.
**Who to Contact in the Ministry of Culture - Archaeology**

The main contact in Ontario for information and guidance with regard to archaeological conservation is the Heritage Operations Unit of the Heritage & Libraries Branch, in the Ministry of Culture (MCL). At the Toronto office a provincial database on archaeological sites is maintained, as well as other data useful for addressing archaeological resource concerns. Separate offices of this Unit are also maintained in London and Thunder Bay. The heritage databases and specialist staff at these facilities can assist approval authorities, development agencies, planners, proponents, heritage consultants and the public with all aspects of conserving and managing Ontario’s archaeological heritage. The following is a key to the people in the Ministry of Culture you should contact regarding Ontario's archaeological heritage. As staff positions, addresses, and even phone numbers can change from time to time, any of the people listed below can assist you in locating the specific person you need to contact:

1. **Who should I contact in MCL regarding archaeological conservation matters if my municipality or development project is located in:**

   **GTA, CENTRAL & EASTERN ONTARIO** (east of the Niagara Escarpment)?
   - Malcolm Horne malcolm.horne@mcl.gov.on.ca (416) 314-7146
   - Shari Prowse shari.prowse@mcl.gov.on.ca (416) 314-7143
   - Chris Andersen chris.andersen@mcl.gov.on.ca (416) 314-7159
   - Winston Wong winston.wong@mcl.gov.on.ca (416) 314-7147
   900 University Ave, 4th Floor
   Toronto, Ontario M7A 2R9
   Fax: (416) 314-7175

   **SOUTHWESTERN ONTARIO** (the Niagara Escarpment and all points west)?
   - Neal Ferris neal.ferris@mcl.gov.on.ca (519) 675-6898
   - John MacDonald john.macdonald@gov.on.ca (519) 675-7742
   900 Highbury Ave
   London, Ontario N5Y 1A4
   Fax: (519) 675-7777

   **NORTHERN ONTARIO**
   - Andrew Hinshelwood andrew.hinshelwood@mcl.gov.on.ca (807) 475-1632
   435 James St. Suite 334
   Thunder Bay, Ontario P7E 5N7
   Fax: (807) 475-1297

2. **Who should I contact for information about the Ministry's ARCHAEOLOGICAL SITE'S DATABASE?**

   - Robert Von Bitter robert.vonbitter@mcl.gov.on.ca (416) 314-7161
   900 University Ave, 4th Floor
   Toronto, Ontario M7A 2R9
   Fax: (416) 314-7175

3. **Who should I contact for further information about MARINE ARCHAEOLOGY?**

   - Erika Laanela erika.laanela@mcl.gov.on.ca (416) 314-7154
   900 University Ave, 4th Floor
   Toronto, Ontario M7A 2R9
   Fax: (416) 314-7175
ARCHAEOLOGY INFORMATION PAGE ACKNOWLEDGEMENTS

The various illustrations appearing on the Archaeology 101 pages are derived from a number of sources. Specific acknowledgements are listed below. Graphics not otherwise acknowledged come directly from the Ministry of Culture’s Southwestern Archaeology Office photo and graphic archive.

Page 1 - What is an....Archaeological Site?
Upper graphic courtesy of the Ska-Nah-Doht Iroquoian Village & Museum, Lower Thames Valley Conservation Authority, RR #1 Mt. Brydges, Ontario N0L 1W0.

Page 2 - What is an....Artifact?
Upper graphic adapted from various Projectile Point Types, Kewa, Newsletter of the Ontario Archaeological Society. Lower graphic adapted from A Native Ceramic Vessel From Owen Sound by Janie Ravenhurst. Kewa 84-3.

Page 3 - What is A....Cultural Feature?
Graphics developed by Nick Adams of Adams Heritage Consultants for this Primer, and based on the site plan of the early Late Woodland Little site.

Page 4 - What Are....Settlement Patterns?

Page 5 - What Are....Burial Features?
Lower graphic adapted from The Archaeology of the St. Lawrence Iroquoians by Bruce Jamieson. In: The Archaeology of Southern Ontario to AD 1650 (edited by C. Ellis & N. Ferris), Occasional Publication of the London Chapter, OAS, 5 1990.

Page 7 - What is an....Archaeological Survey?
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Page 8 – What is an….Archaeological Consultant?
Lower graphic provided by Nick Adams of Adams Heritage Consultants for this Primer.

Page 9 - What are....Site Alterations?
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Page 11 - What is....Archaeological Significance?
Upper graphic adapted from The Culture History and Archaeology of the Neutral Iroquoians by Paul Lennox & William Fitzgerald. In: The Archaeology of Southern Ontario to AD 1650 (edited by C. Ellis & N. Ferris), Occasional Publication of the London Chapter, OAS, 5 1990. Lower graphic adapted from The Kassel and Blue Dart Sites: Two Components of the Early Archaic, Bifurcate Base Projectile Point Tradition, Waterloo County, Ontario by Paul Lennox. Ontario Archaeology Number 56.

Page 12 - What Are....Lithic Scatters?

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Upper graphic adapted from Investigations at Mohawk Village, 1983 by Ian Kenyon and Neal Ferris. Arch Notes, Newsletter of the Ontario Archaeological Society 84-1.
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Archaeology 101 Information Pages
(distributed throughout this primer)

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Information Page 2 - What is an...Artifact?
Information Page 3 - What is a...Cultural Feature?
Information Page 4 - What are....Settlement Patterns?
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Information Page 12 - What are....Historic Sites?
Information Page 13 - What are...Site Alterations?
Information Page 14 - What is....Marine Archaeology?
Archaeological sites represent the remains of any past human use of a locale. This could be the place where a large Iroquoian village once stood, a place where a hunter butchered a kill, the site of a shanty built by an early pioneer, or the bottom of a lake where a shipwreck rests. At these places are found the things left behind, including refuse, the remains of structures, things forgotten like a cache of stone knives, or even things intentionally left, such as the burial of a family member.

The most important aspect of an archaeological site is the context within which everything is found. Because there has been no appreciable soil accumulation over the last several thousand years, the remains left behind at a site will be found where they were placed originally. The value of context, then, is knowing more than just that an artifact came from a site. For example, knowing that a pot sherd came from a specific corner of the site, next to many other pot sherds, burnt bone, and a stone knife, tells us what the people who left those remains were doing at that location (i.e. cooking).

Archaeological Sites -During Use
Any place where people lived or used a locale in the past will accumulate the materials and features created by those people. So this village, occupied by a few hundred people busy doing all those things associated with village life, will be occupied for a brief period of time (between 15-30 years). And during the course of that occupation the village inhabitants will create large amount of material refuse and settlement patterns, all of which will stay behind after these people have moved on from this locale.

Archaeological Sites -Afterwards
Hundreds of years after that village site was abandoned, overgrown, then cleared for farming, only a few artifacts turned up every year by the plough offers an indication of what once stood there. The site, with all its information about that ancient community, is hidden and silent until the archaeologists begin the task of carefully uncovering its history and retelling its story.
Artifacts are the tangible items found on archaeological sites during survey or excavation. Only those items which have not decayed over time (stone, bone, clay pottery, etc.) are found. Because most artifacts left at a site represent garbage created during occupation, they are mostly broken items or waste by-products from things like stone tool manufacture or the preparation of meals (animal bones).

Much as the shape of a car fender or the popularity of big hair-dos and disco music changed over time, so too did prehistoric artifacts change in form, shape and decoration. Because of this, the shape of an arrowhead or the style of decoration on a clay pot can help the archaeologist determine when the artifact was made, and sometimes tell to which cultural group the maker belonged. Artifacts that are analysed for this purpose are often referred to as "Diagnostics."

**Projectile Points**
The spear point on the left is found only on sites dating over 10,000 years ago, used by the first people to settle in Ontario. The point in the centre was made around 3,500 years ago and may represent the earliest use of a bow and arrow. The point on the right represents one of the last stone point forms used by Aboriginal peoples in southern Ontario. Points are depicted at actual size.

**Prehistoric Ceramics**
Clay pots, used primarily for cooking and storage, are usually found broken into many sherds. Decoration is usually applied to the upper portion of the vessel (referred to as the rim) and applied with a stylus (for example a pointed stick or bone) pressed into the wet clay before firing. Pottery first appears on sites in Ontario some 3,000 years ago.
SECTION 1
INTRODUCTION

1.0 ARCHAEOLOGY IN ONTARIO

Ontario has a rich, diverse and ancient archaeological history. This section of the primer explains how archaeology is managed for and conserved in the province today, and the role both the Ministry of Culture and various land development approval authorities play in assuring good conservation.

1.1.1 Archaeological Sites

Under Ontario Heritage Act (OHA) Regulation 170/04, archaeological sites are defined 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*. Additionally, the regulation defines a marine archaeological sites as *an archeological site that is fully or partially submerged or that lies below or partially below the high-water mark of any body of water*; while an artifact is defined 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*.

These definitions capture the full range of Ontario's archaeological heritage, which extends back over 12,000 years and covers the rich heritage of Ontario's Aboriginal communities, as well as the non-Aboriginal peoples who arrived and settled here in the past 400 years. Archaeology, then, is uniquely important in documenting the vast majority of Ontario's past, and in emphasising the significance and antiquity of the role Aboriginal communities have in shaping Ontario's heritage.

Archaeological sites consist of both individual objects (artifacts), and cultural features (settlement patterns) created as a result of the past habitation and activities carried out by the people who occupied a specific place. As well, the context within which these objects and features are found is a critical component in documenting and understanding the site. Thus archaeological sites are extremely fragile records of the past and unlicensed alterations, through land use activities or site looting, can destroy them and so are prohibited under Section 48(1) of the OHA. Additionally, since most archaeological resources are located below ground and thus not readily visible, they need to be physically identified and documented by qualified archaeologists holding a license also issued under Section 48(1) of the OHA, before they can be added to the heritage record. Presently, only an estimated 10% of all archaeological sites in the province have been identified, so much of our future ability to understand and appreciate the past will come from finding and documenting these resources before they are destroyed.

It should also be noted that archaeological resources, particularly those dating from the last 2,000 years, can contain human burials. The requirements for properly caring for, disinterring and re-interring those remains are set out in the Cemeteries Act. These requirements are complex and
involve, in the case of Aboriginal remains, entering into a disposition agreement with the identified First Nation acting as the representative for the deceased. As such, when associated with any kind of development project leading to land impacts, potential human interment issues should be identified as early as is possible in the project planning process.

All archaeological resources are considered significant, in recognition of their fragile, non-renewable nature, the potential information they hold for understanding Ontario's past, and the value of this information to future generations. However, once a particular archaeological resource has been identified and assessed, the degree to which it can contribute to our understanding of the past will determine its relative level of significance and thus the appropriate level of conservation.

Also, it is important to realise that the majority of archaeological resources documented in this province are an important part of the heritage of Ontario's Aboriginal peoples. Thus, where appropriate, opportunities for local Aboriginal communities to comment on decisions affecting their archaeological heritage should be provided.

Lastly, it is important to recognise that, while archaeological remains can be associated in the ground around standing built structures of heritage significance, under the operation of the OHA a standing structure is not considered an archaeological site per se. Rather, standing structures of heritage significance are administered under Parts IV and V of the OHA, while provisions under Part VI are exclusively for addressing archaeological sites and the licensed activities of qualified archaeologists.

1.1.2 Archaeology, the Ontario Heritage Act & the Ministry of Culture

Under the OHA all individuals conducting archaeological fieldwork must hold a valid archaeological licence issued by the Minister, and no alterations to known archaeological sites can occur through the fieldwork of a licensed archaeologist. These provisions, set out under Section 48(1), Part VI of the OHA, defines the specific relationship the Ministry of Culture has with the conservation of archaeological sites, namely through the licensed activities of archaeologists.

This relationship is articulated through the development of license qualifications, standards and guidelines for the practice of archaeology, and by providing technical advice on matters of archaeology to stakeholders. Importantly, archaeological activities undertaken by licensees must be reported on, and these must be submitted to the Ministry of Culture where they are reviewed against provincial standards and guidelines for fieldwork and determination of site significance. Once received, reports are also filed with the Archaeological Report Registry, which provides the public with access to the ongoing discoveries and contributions to Ontario’s archaeological heritage.

This review, though articulated between the Ministry of Culture and licensee, also facilitates
archaeological conservation requirements under land use development processes. This is done through the review and clearance of the archaeological reports submitted from licensees by Ministry staff. The correspondence from the Ministry of Culture at the conclusion of the report review to the licensee confirms that all fieldwork and reporting has met provincial Standards and Guidelines. Copies of this correspondence are also shared with proponents and approval authorities as confirmation that archaeological conservation requirements tied to a particular development project have been met. The correspondence also confirms that any known archaeological sites present on the subject property, either because of fieldwork on the site, or determination of level of significance, are no longer subject to licensed only fieldwork alteration provisions of the OHA. Thus the landowner or proponent can thus proceed to develop (i.e., alter) in the area of the known archaeological site confident that they are not in violation with the intent of the OHA.

Also, the OHA, associated regulations, and terms and conditions all work to ensure the proper care and long term curation of the important archaeological collections made from sites found during fieldwork. It is the licensee's responsibility to care for archaeological collections generated under their license. The Act also empowers the Minister of Culture to direct where artifact collections can be deposited if the licensee wishes to transfer the care provisions of a collection. Collections can only be directed to a public institution or donated to the province, and ensures the perpetual care and maintenance of these important components of Ontario's heritage.

1.2 ARCHAEOLICAL CONSERVATION IN LAND USE DEVELOPMENT

All land use activities have the potential to impact archaeological sites. In Ontario, the identification and conservation of archaeological sites that may be impacted by development are requirements identified in the Environmental Assessment Act and Planning Act, as well as in numerous other legislative, regulatory, and protocol initiatives. However, it is important to keep in mind that conserving archaeological remains within development and planning processes detailed below does not mean putting a halt to a development application. Rather the intent is to document the vital information for a significant archaeological site in advance of its destruction, or to protect the site long term and while development proceeds around it. This ensures that crucial information about Ontario's heritage is not lost, while permitting development to proceed once conservation measures have been taken.

1.2.1 The Environmental Assessment Act

The Environmental Assessment Act (EAA) provides for the protection, conservation and wise management of the environment in Ontario; environment broadly defined to include cultural heritage. The EAA promotes sound environmental planning by requiring the proponent of an EA project to prepare an environmental assessment for public and government review before a decision on the approval of the project can occur. Section 5 (3) (c) of the EAA requires that all heritage aspects of the environment to be affected by the proposed undertaking be identified as a
part of that environmental assessment. This will entail reviewing the known archaeological record for the study area, evaluating the archaeological potential for the lands in question, describing the results of an archaeological survey of the proposed impact area in archaeological potential is determined, evaluating the resources identified, and recommending impact mitigation strategies for sites identified. Comparable assessment and mitigation work is conducted as a part of a scoped-down, Class EA process, which is conducted for projects such as for municipal roads, sewers, watermains, etc. The Ministry of Culture can act as a reviewer of Class EA and individual EA projects to identify when archaeological potential requires archaeological investigations or a licensed archaeologist can conduct the appropriate background review. All fieldwork components are undertaken by a licensed archaeologist and the Ministry of culture reviews the background study and fieldwork reports for the undertaking.

Under the auspices of the Environmental Assessment Act large-scale public sector development agencies address archaeological conservation concerns, usually associated with Class EA categories issued to these agencies under the Act. Notably the Ministry of Transportation undertakes archaeological assessment and mitigation of all impacts (the "affected" environment) arising from projects associated with the construction, maintenance and improvement of provincial highways, along with proposed wayside pits, etc. This is accomplished either through the use of in-house archaeological expertise, or use of private sector consultant archaeologists. Ontario Hydro addresses archaeological concerns associated with the establishment and maintenance of transmission corridors, power and transmission facilities. Under their Class EA, provincial Conservation Authorities address archaeological concerns primarily associated with erosion and shoreline stabilisation projects, as well as facility development projects which may impact significant archaeological resources. The Ontario Realty Corporation, responsible for the purchase and sale of provincial property, identifies archaeological concerns associated with such land transactions, as well as for projects associated with the development of a provincial facility on a parcel of land.

The Ministry of Natural Resources is responsible for evaluating archaeological potential in areas proposed for operations under the terms of a forest management plan, and for ensuring that the planning team develops appropriate prescriptions for protecting all classes of cultural heritage values. MNR Parks also addresses archaeological concerns tied to development of provincial parks, as well as regulates through separate permits archaeological research conducted in parks.

Finally, some projects which fall under Federal EA jurisdiction will require archaeological investigations, either directly, or as a result of a federally based dictate ensuring the undertaking will adhere to provincial requirements. Such undertakings include energy pipeline construction or refurbishment, telecommunications corridors, construction or expansion of airports, or facility construction and improvements associated with Port or Bridge Authorities.

1.2.2 The Planning Act

In the Planning Act the conservation of Ontario's heritage is recognised as a matter of provincial
interest, as detailed in the Provincial Policy Statement 2005 (PPS 2005). A critical element of the intent of these policies, as detailed in Section 3.5 of the Planning Act, is that: *in exercising any authority that affects a planning matter, the council of a municipality, a local board, a planning board, a minister of the Crown and a ministry, board commission or agency of the government, including the Municipal Board and Ontario Hydro, must be consistent with the policy statements issued under subsection (1).* Thus all decisions made for all types of development will need to address potential heritage resource conservation needs arising from the impacts associated with those development activities. The policies of provincial interest addressing cultural heritage resources are found in Section 2.6 of the PPS 2005. Archaeological resources are the specific topic of policy 2.6.2, which states:

**Policy 2.6.2:** Development and site alteration may be permitted on lands containing archaeological resources or areas of archaeological potential if significant archaeological resources have been conserved by removal and documentation, or preservation on site. Where significant archaeological resources must be preserved on site, only development and site alteration which maintain the heritage integrity of the site will be permitted.

Since every municipality contains archaeological sites of significance, and all land use activities have the potential to impact those resources, municipalities, approval authorities and development proponents need to address and conserve Ontario's heritage.

Within the Planning Act process, conserving archaeological sites means enabling well-planned development. This goal is accomplished by implementing policies in municipal Official Plans, and by condition on the appropriate development application or enabling vehicle in order to ensure that lands containing archaeological sites, or exhibiting archaeological potential, are examined by a licensed archaeologist through formal assessment. Any significant archaeological sites identified on the development property will need to be protected while development proceeds around it. Section 34(1) of the Planning Act includes provisions for a prohibitive zoning by-law specifically to aid in protecting significant archaeological sites. Alternatively, the proponent can mitigate development impacts by having the site fully documented through excavation by a licensed archaeologist in advance of development; in effect removing the vital information and artifacts which make the site significant before construction disturbs that location.

Under recent changes to the land use planning process in Ontario, the review of site specific development applications for the purpose of determining if archaeological sites or areas of archaeological potential are present will be made directly by the planning approval authority (either the Ministry of Municipal Affairs and Housing under a provincial One Window review process, or delegated municipal planning authority). This is accomplished either through the use of screening criteria developed by the Ministry of Culture (see Section 3), or through the use of municipality-specific archaeological master plans, consisting of inventories, policies and procedures for implementation, and utilising GIS systems and evaluative software developed in
co-operation with the Ministry of Culture. Review of the resulting archaeological investigations remains the responsibility of this ministry, as that work arises from OHA licensed activity. This ministry also administers all matters related to the management of the resources documented, mitigation strategies proposed, and any disputes arising from the conservation of archaeological resources under the land use planning process.

Municipalities have adopted variable approaches to decisions made under the Planning Act with respect to Section 41 Site Plan applications. This arises from the structure of Section 41 itself, and whether or not the specific reference to some dimensions of the PPS 2005 necessary means omission of the rest of the PPS. Regardless of interpretation, it is important to keep in mind that an archaeological site present within a site plan application property, whether discovered during construction or known beforehand, is still subject to OHA licensed only alteration provisions. In other words, such sites are protected by provincial statute. As such, it is recommended that approvals of Site Plans where archaeological potential or known sites have been identified ensure that required archaeological site conservation needs be completed, so that the proponent is not, operating under a Site Plan approval, still potentially in contradiction to Section 48(1) of the OHA. This can be done through imposition of a condition, as some municipalities practice, through pre-submission resolution of the issue (see Section 2.1.3), deferral of a decision until archaeology is completed, or rejection of the application, should the approval authority not wish to otherwise ensure their decision is consistent with the PPS 2005.

1.2.3 Other Legislation

The conservation of archaeological resources in Ontario is also addressed in other land use undertakings. For example the Aggregates Resources Act, administered by the Ministry of Natural Resources, recognises the potential impact quarrying activities can have on cultural features such as archaeological remains. The process for addressing archaeological concerns can be similar to that outlined for EA related projects, and is detailed in the MNR document entitled *Provincial Standards under the Aggregate Resources Act*. Specifically a background study, field survey and detailed archaeological site investigations are all identified as required Technical Reports under Part 2.2 of the Provincial Standards document. Proponents can obtain an initial determination of potential (and thus a determination of whether or not the subject property requires survey) either directly from Ministry of Culture staff, or through the use of a consultant archaeologist hired for the purpose. All subsequent field investigations, when determined to be required, will need to be undertaken by a consultant archaeologist employed by the proponent, and the findings reviewed by this ministry.

Cultural heritage and archaeological conservation is also identified under the Niagara Escarpment Planning and Development Act. As a result, the Niagara Escarpment Commission ensures that development projects within the Niagara Escarpment properly consider impacts to archaeological resources. And the Ministry of Culture is developing an archaeological conservation protocol with the Ministry of Northern Development and Mines, related to mining extraction activities.
It is also worth noting that archaeological conservation will sometimes impinge on the Cemeteries Act, arising from the discovery of unmarked burials and associated human remains on archaeological sites. In effect, burial locations found on archaeological sites are in land not registered as a cemetery, and thus in violation of the Cemeteries Act. The discovery of human remains, then, usually will entail the need to define the extent and number of burials, and the registration of the location in question as a cemetery, or the removal of the remains and reinterment in an established cemetery. While the details of the process involved will vary depending on whether the burial is an isolated occurrence or part of a more formal cemetery, and whether or not the remains are Aboriginal, it is a complex procedure which requires the cooperation of landowner, next of kin or other group acting as representative for the deceased, and the Cemeteries Registrar. The Ministry of Culture assists by co-ordinating contact and negotiations between the various interested parties, and ensuring that any resulting archaeological investigations meet provincial standards (see Section 6 for further information).
SECTION 2
MUNICIPAL & DEVELOPMENT AGENCY PLANNING FOR ARCHAEOLOGICAL CONSERVATION

Municipal planning authorities and development agencies can take steps to plan for archaeological conservation requirements well in advance of having to ensure particular development projects have been assessed. For example, while the Ontario Heritage Act provides both the province and municipalities with responsibilities for the conservation of cultural heritage resources, municipalities with approval authority under the Planning Act can and should assume a lead responsibility for cultural heritage resource conservation in their local land use planning process. This can be accomplished through the development of inventories, planning tools, guidelines and even Official Plan policies, which can assist in focusing archaeological concerns, and identify where those concerns will need to be addressed in advance of a particular development project being submitted for approval.

2.1 POLICIES, PROTOCOLS AND GUIDELINES

Effective planning for the conservation of archaeological resources within land use planning processes should include defining the particular role and responsibility of the planning or development agency, as well as that for any advisory agencies involved. For example, under most EA Act processes, protocols or guidelines can be established with Ministry of Culture to detail how archaeological conservation concerns will be addressed for a particular type of undertaking. With such agreements in place, agencies can plan for archaeological conservation concerns well in advance of a given undertaking, and know what actions will be necessary to satisfy those concerns.

In a municipal context, the key direction for the conservation of archaeological resources should be found in the heritage policies of the Official Plan. Since archaeological sites are found in all municipalities, are non-renewable and can be vital to a community's sense of identity, all municipalities need to address archaeological conservation in their official plans. It is recommended that official plan policies which implement the Cultural Heritage Policy 2.6 of the Provincial Policy Statement minimally recognise the importance of cultural heritage and incorporate policies for any built heritage and cultural landscapes. There should also be a policy for archaeology, such as following sample:

- The municipality will ensure that archaeological resources are conserved, by requiring the preparation of an archaeological assessment by a licensed archaeologist when a development or site alteration proposal may adversely affect an archaeological resource or area of archaeological potential, and by requiring that impacts to identified archaeological resources of significance are mitigated through excavation or preservation.
Additional policies can be developed to outline implementation of the goal, establishment and maintenance of inventories, pre-submission best practices for proponents, and integration of archaeological policy with policies related to PPS 2005 2.6.1 (built heritage and landscapes), and 2.6.3 (adjoining lands). The Ministry of Culture maintains a range of sample heritage policies that can be of assistance in the development of municipality-specific OP policies.

2.2 PLANNING TOOLS

2.2.1 Inventories

The effective management of archaeological resources within any development or planning process will depend on the extent and quality of the data collected. For example, knowing the location of a large prehistoric village site, which would cost hundreds of thousands of dollars to excavate in advance of development, can help any planning or development agency ensure that development avoids that location, or plan to avoid the location during the initial concept design stage for the project.

Thus a first step is the compilation of all known archaeological sites within the lands of the planning or development agency (e.g. within a municipal boundary, within established easements or rights-of-way, within all property holdings of a particular development agency, etc.). The Ministry of Culture, which maintains and regularly updates a all registered archaeological sites in Ontario, can provide this data in order that an inventory is created for planning purposes. This transfer of data is usually facilitated through the adoption of a data sharing protocol. Municipalities should review with the ministry the best way of accessing and utilising this database for their region. Also, it should be emphasised that the provincial database reflects only the extent of previous archaeological survey that has occurred across the province, and not the full extent of the archaeological record. This can limit the extent of data available for a particular region.

2.2.2 Archaeological Master Plans

Since the known database is limited to the extent of previous archaeological investigations undertaken in a given area, any inventory will need to be augmented by identifying lands that exhibit the potential to contain undocumented sites. Establishing potential is based on identifying the presence of a wide range of geographic and historic features which would have directly influenced where ancient settlement occurred (See Section 3).

While the general criteria defined by the ministry in Section 3 for determining archaeological potential are effective for addressing broad archaeological conservation concerns, it is also possible to develop more focussed, municipality or property specific measurements of potential through the development of an Archaeological Master Plan. Undertaking an Archaeological Master Plan is an intensive process of compiling all available archaeological, historic and
geographic data to map areas which exhibit potential. The end result is a master plan which summarises the culture history of the study area and inventories all lands which have the potential to contain undocumented sites. The mapping layers that accompany such a master plan can then be used by non-specialists (e.g. planners, engineers, proponents, etc.) to effectively determine archaeological potential effectively and accurately, and thus meet provincial expectations of good conservation. Typically this is achieved by having the data layers run through a Geographic Information Systems (GIS) evaluative program that can evaluate the archaeological potential for any given parcel of land, and provide a simple yes/no response. Thus non-specialists can effectively address archaeological conservation concerns without having to rely on trained staff.

2.2.3 Pre-Submission Strategies

Typically in other development processes (e.g., EA or Aggregate undertakings), determining archaeological potential, and even conducting surveys of property exhibiting potential or mitigating planned impacts to archaeological sites, are undertaken prior to the formal submission of an undertaking or pit permit application. Likewise, some municipalities have begun to identify archaeological conservation requirements as a study that a development proponent needs to undertake prior to submitting a development application. In this way, archaeological conservation concerns are addressed pre-submission, and so avoiding the need for an archaeological condition to be attached to the development application.

A pre-submission requirement can work for municipalities with archaeological master plans, since determining if a parcel of land has potential is straight-forward. It can also be done without an archaeological master plan, through application of provincial screening criteria, or through the technical advice Ministry of Culture staff can provide a proponent directly on a question of archaeological potential for a given parcel of land. While pre-submission addressing of archaeological concerns can be undertaken for any type of project, it is particularly effective for managing large property holdings, or projects that will be on a quick development schedule from formal application onwards, or for projects (e.g., site plans,zonings, etc.) where it may be necessary to resolve archaeological matters when it is difficult to ensure archaeology can be addressed subsequently, and so may preclude approval of the application.
SECTION 3
REVIEWING DEVELOPMENT APPLICATIONS FOR ARCHAEOLOGICAL CONSERVATION

3.1 ARCHAEOLOGICAL POTENTIAL

Archaeological potential identifies those lands likely to contain archaeological sites. Whether to satisfy EA or Aggregate Resources Act requirements or Policy 2.6.2 of the Provincial Policy Statement within the Planning Act, field assessment of lands identified as having potential will be needed in order to confirm the presence or absence of significant archaeological remains.

Determining archaeological potential is difficult and complex, due primarily to two characteristics inherent to this type of heritage resource:

- Archaeological sites are not readily visible - someone needs to have physically located and identified a site for its location to be known.

- Archaeological potential involves predicting where past human behaviours and settlement practices occurred in a given area. So while general trends can be observed and used to inform potential determinations, it isn't possible to determine exactly where archaeological resources will be found, just where they're likely to be found.

3.2 EVALUATING ARCHAEOLOGICAL POTENTIAL FOR DEVELOPMENT PROPERTY

Evaluating the potential for a specific property or study area is based on determining the land's association with a wide range of geographic and cultural-historic features which would have directly influenced use and settlement by the past inhabitants of a region. Thus the presence or absence of these features within and around a parcel of land will serve as an indicator of past human use.

IMPORTANT NOTE: When potential determinations are done by professional archaeologists, they have the training and expertise necessary to critically evaluate all applicable geographic and cultural-historic features. But when potential is determined by non-specialists, no such expertise can inform their findings of potential. Thus the criteria are intended solely for non-specialist use to answer a simple "yes/no" question in order to identify those development applications which will need archaeological assessment. So when used, these criteria must be used without modification to be effective and supported by the ministry. Subsequent evaluation of lands identified as having potential will be conducted by a licensed archaeologist. They will apply their expertise to further inform their survey strategies, which are also defined by the ministry of Culture’s Standards and Guidelines for licensed professionals (see Section 4).
### 3.2.1 Archaeological Potential Criteria

The following are the key geographic and cultural-historic features that need to be considered when a non-specialist reviewer of a property is determining potential. Potential is determined by posing a series of questions respecting the property against the features listed (see the checklist in Appendix B which can be used by the reviewer when making a potential determination for a particular development application). These questions can be grouped into four headings:

**A. Known Archaeological Resources:**

1. *Are there known archaeological resources on or adjacent to the development application?*

   The Ministry of Culture provides the locational data for all registered archaeological sites in a given municipality or study area. So, a first consideration in evaluating potential is to determine whether or not an archaeological site is on or within 250 metres of the proposed development.

**B. Physiographic Features:**

The features under this category refer to physical characteristics of the land that are easily identifiable "as found" data on topographic and soils maps, air photos, etc. These features will require a minimum of technical expertise on the part of the reviewer - just a basic knowledge and familiarity of the geography of the study area. To ensure accurate determinations, the reviewer must examine detailed topographic maps.

2. *Is there a water source on or adjacent to the development property?*

   The association of a parcel of land to a water source is one of the most important features to consider, since water played an important part in all settlement and land use decisions made by all Aboriginal and early non-Aboriginal settlers. However, it is important to distinguish between different types of water sources, and the different landforms associated with those water sources. Likewise it will be important to distinguish "natural" waterforms from channelized ditches, artificial lakes or shorelines modified by previous damming activities, which in of themselves would not necessarily determine potential.

   (a) Is any part of the development property within 300 metres of a primary water source (accessible lakeshores, rivers and large creeks), or the confluence of two or more smaller watercourses?

   (b) Is the development property within 200 metres of a secondary water source (smaller creeks, intermittent or seasonally wet streams, springs, marshes or swamps)?
And since the occupation of Ontario extends back several thousand years, it is important to be able to recognise past water drainages. So:

(2c) Is the development property within 300 metres of a relict or ancient primary source of water, such as glacial lake shorelines (as indicated by the presence of raised sand or gravel beach ridges), or relic river channels (as indicated by a visible linear, channelized dip or swale in the topography)?

(3) *Is the development property situated in an area of elevated topography?*

Past settlement and land use can be associated with higher ground, defined by surrounding low or level topography. Consequently development property containing eskers, drumlins, sizeable knolls, plateaus next to lowland, or other such topographic features, exhibit archaeological potential.

(4) *Is the development property on well-drained, sandy soil?*

Past settlement can be associated with sandier, better drained soils. This is particularly true in regions of the province where there are small pockets of sandy soil in an area otherwise characterised by heavy soils or rocky ground.

(5) *Is the development property associated with distinctive or unusual land formations?*

Certain locales, such as waterfalls, rock outcrops, rock faces, caverns, mounds, etc., often were important to past peoples as special or spiritual places. This significance is often indicated by the presence of burials, structures, offerings, rock paintings or carvings, etc.

C. **Historic Cultural Features:**

These features refer to historic locales, particularly associated with the 18th and 19th century heritage of Ontario. For the most part these features are not readily observable on maps or other accessible data. As such, determining whether or not one of these features is relevant for a development application requires a compilation of historic information specific to the municipality. This information may be accessed from municipal heritage committees, local historical societies or local histories and atlases, or may need to be compiled directly as part of an archaeological master plan. Until available in an accessible format, many of these features cannot inform the review process, thus limiting the overall accuracy of the resulting potential determinations.

(6) *Is the development property associated with a particular resource-specific feature that would have attracted past subsistence or extractive uses?*

Some locales provided past peoples access to a scarce resource (e.g. stone or mineral
outcrops, etc.), served to concentrate plant or animal resources (e.g. migratory routes, spawning areas, etc.), or attracted early Euro-Canadian industrial activity (e.g. logging, prospecting, etc.). The presence of such a feature can suggest potential.

(7) \textit{Is the development in an area of initial, Non-Aboriginal settlement?}

This included places of early military or pioneer settlement, the older core of a town or city, early wharf or dock complexes (which would include the potential for shipwreck sites), pioneer churches and/or early cemeteries, etc. Sometimes these areas contain well-known local, provincial or federal monuments or heritage parks and can be readily identified for review purposes.

(8) \textit{Is the development property associated with an early historic transportation route, such as a trail, pass, road, rail, portage route or canal?}

Initial Euro-Canadian settlement into a region is often closely linked to early transportation routes. Also, some Aboriginal sites, particularly in the north and on the Canadian Shield, are found along portages and land traverses.

(9) \textit{Does the development contain a property designated under the Ontario Heritage Act?}

This information is readily available from the municipal heritage advisory committee or clerk's office.

D. \textbf{Features Specific to the Development Application or Study Area:}

These features refer to characteristics specific to the development application or study area which may reverse a potential determination.

(10) \textit{Has evidence from documentary sources, local knowledge or Aboriginal oral history, associating the property with historic events, activities or occupations, been brought to the reviewer's attention?}

Groups or individuals can bring information, not normally available for review purposes, to the attention of the municipality or review agency for the property in question. This information should be accepted when determining potential. Ministry staff can assist the approval authority or development agency in evaluating the importance and accuracy of the information presented.

(11) \textit{Has the development property or study area been subjected to extensive, intensive land disturbances?}

Recent land uses can affect potential. Such land disturbances need to be intensive (e.g.
past quarrying, major landscaping, recent built and industrial uses, sewage and infrastructure development, etc.), as opposed to "passive" (e.g. gardening, minor landscaping or grading, etc.). As well, this disturbance would have to be extensive, covering the vast majority of the development property. In an area of high potential even an acre or less of intact land may still contain significant archaeological remains. NOTE: Agricultural cultivation (ploughing, disking, etc.), is NOT an acceptable form of land disturbance for negating archaeological potential.

3.2.2 Archaeological Potential Criteria - Scoring the Results

After considering the above criteria, a determination of archaeological potential can be made. As indicated in the review checklist provided in Appendix B, if the answer to Question 1 or any part of Questions 2 or 10 is yes for any of the property or study area, then it exhibits archaeological potential. If the answer to at least two of Questions 3, 4, 5, 6, 7, 8 or 9 is yes, then the property exhibits archaeological potential. If the answer to Questions 1 through 10 is no, or the answer to Question 11 is an unqualified yes, then the property has low archaeological potential. When potential is confirmed for any of the property, the archaeological assessment requirement will apply to the entire parcel of land (excluding any extensively disturbed areas or specific areas determined to be of low potential by the consultant archaeologist). This is achieved through application of an archaeological condition placed on the approved application.

When determining if criteria of potential apply or not for a parcel of land, a non-specialist must rely on the available data to facilitate the review. Known site databases, topographic features such as water and elevation, local information and possible disturbances all will be known, other data may not. If an answer to some of these secondary features is "not available" the reviewer is to assume these criteria do not apply (i.e., count as “no).

In general, for non-specialists utilising these archaeological potential criteria, you will find that some percentage of the development projects examined will clearly exhibit potential, while others will clearly have low potential. There will always be, however, some percentage that falls into a middle area, where determining potential is difficult, particularly if you lack technical expertise in archaeology or an archaeological master plan to inform determinations. In such cases you will need to contact the appropriate Ministry of Culture staff person to assist in making the final determination of potential.

3.2.3 Applying Potential Criteria to Linear Corridor (EA) Projects

Some EA projects consist of developing a linear corridor (e.g. highway right of way, pipeline or hydro corridor, water line, etc.), in effect a narrow width of land extending great distances, and traversing many areas of high and low archaeological potential. As such, a simple yes/no answer to a determination of potential is not adequate for linear corridor study areas. Rather, for these kinds of projects the potential criteria can only be used to map sections of the corridor that have archaeological potential. This mapping would then define all areas along the corridor requiring archaeological assessment.
3.2.4 Determining Archaeological Potential Criteria for Forestry Projects

The Ministry of Natural Resources is responsible for evaluating archaeological potential in areas proposed for operations under the terms of a forest management plan. The evaluation is based on the output of the archaeological potential model developed by MNR and reviewed by this ministry. The approach uses a weighted intersect model where weights and values are ascribed to specific landscape elements. Pre-testing of the model includes reviewing the locations of registered archaeological sites, and other cultural heritage values, to the underlying landscape. Higher values are ascribed to landform types which show stronger associations with registered archaeological sites, or other cultural heritage values within the forest management unit. As part of the development of the archaeological potential mapping for planning, MNR also undertakes to confirm the preliminary potential map by reviewing additional information available through the planning team, local citizen’s committee or other local information sources, such as local knowledge if past land use or ground conditions, aerial photography, historic mapping, etc. The final area of archaeological potential mapped for the plan includes only areas of potential that overlap with areas proposed for forest operations (i.e., that will lead to impacts). When forest operations are proposed within areas of archaeological potential that are expected to result in soil disturbance, an archaeological assessment is required.

3.3 SMALL SCALE PLANNING ACT DEVELOPMENTS

It is important to recognise that small-scale developments, particularly under the Planning Act, can impact a significant archaeological site. So, while impacts related to smaller development projects are more restricted in extent and will be a less frequent concern, the approval authority will need to recognise when a small scale Planning Act development application should have regard for Policy 2.6.2.

3.3.1 Consent Applications

The following, taken from the MMAH Consent Manual, can assist in determining whether or not a particular consent application should be identified as having archaeological potential:

(1) Will the application lead to land impacts, such as soil grading or ground disturbances?
- If no, there are no further archaeological concerns for this application.
- If yes, proceed to Question #2.

(2) Is the property presently undisturbed (e.g. woodlots, agricultural field or pasture, etc.)?
- If no, there are no further archaeological concerns for this application.
- If yes, proceed to Question #3.

(3) Does the property contain a known archaeological site?
- If no, proceed to Question #4.
- If yes, attach an archaeological condition on the application or direct the applicant to consult with Ministry of Culture Archaeology staff prior to approval.

(4) Will the application lead to impacts greater than one residential building envelope (one building envelope is equivalent to the following: a main building foundation with minor outbuildings & services), either alone or in tandem with several adjacent applications?

- If no, there are no further archaeological concerns for this application.
- If yes, proceed to Question #5.

(5) Are the subject lands within 100 metres of a major water source (i.e. river, accessible lake shore, large creek or the confluence of two or more water sources)?

- If no, there are no further archaeological concerns for this application.
- If yes, attach an archaeological condition on the application or direct the applicant to consult with Ministry of Culture Archaeology staff prior to approval.

(6) Will the proposed development directly affect a federal, provincial or municipal historic landmark, monument, site or designated heritage property?

- If no, there are no further archaeological concerns for this application.
- If yes, attach an archaeological condition on the application or direct the applicant to consult with Ministry of Culture Archaeology staff prior to approval.

Infrequently a large consent application, or multiple, consecutive applications will be submitted for review. These are, in effect, a subdivision broken down into continuous consent applications and must be reviewed as a plan of subdivision, utilising the full potential screening criteria.

3.3.2 Zoning Amendments

While most zone change applications will not raise a heritage concern, occasionally an application will be put forward for large parcels of land having high archaeological potential. As well, many of these zonings will be in advance of development that will not otherwise be subject to an application review for provincial interests. This is particularly the case with zonings proposed for recreational, industrial or commercial projects on large, undisturbed lands (e.g. golf courses, trailer parks, industrial parks, shopping malls, etc.). In such cases the property must be reviewed for potential like any plan of subdivision, utilising the full screening criteria detailed in this manual. In cases where the zoning does have potential, then an archaeological condition will form part of the implementing document (e.g. site plan, etc.), otherwise archaeological investigations need to be completed prior to an approval of the zoning application.
3.3.3 **Pre-Consultation for Planning Act Consents & Zonings**

Under Planning Act processes MMAH is the point of contact when seeking a formal provincial response to a development application. However, the Ministry of Culture is the provincial point of contact for all archaeological-specific or technical matters related to heritage conservation. Municipalities are also welcome to encourage development proponents to pre-consult directly with Ministry of Culture staff. Pre-consultation will ensure that the proponent has addressed heritage concerns as early as possible in the review process, thus minimising delays. As well, particularly for municipalities where internal plans review capacity is limited, this should assist in minimising municipal staff workload.

3.4 **ONCE ARCHAEOLOGICAL POTENTIAL HAS BEEN DETERMINED FOR A DEVELOPMENT PROPERTY**

When potential has been identified, the proponent will then need to assess the extent of significant archaeological sites present on the subject property. This is ensured by attaching an archaeological condition to the development application or implementing approval mechanism, or identifying the requirement in the EA, which will require the proponent to have all appropriate studies completed prior to construction proceeding:

**STANDARD ARCHAEOLOGICAL CONDITION**

The proponent shall carry out an archaeological assessment of the subject property and mitigate, through preservation or resource removal and documentation, adverse impacts to any significant archaeological resources found. No grading or other soil disturbances shall take place on the subject property prior to the approval authority and the Ministry of Culture confirming that all archaeological resource concerns have met Ontario Heritage Act related Standards, and known sites no longer are subject to, or protected by, OHA Section 48(1) alteration prohibitions.

Since these investigative studies will be carried out by an archaeologist licensed under the Ontario Heritage Act, fulfilment of the condition or EA requirement is integrated with licence reporting and technical guideline requirements arising from the Ontario Heritage Act. Following the Ministry of Culture review of the relevant study reports, the licensee, and by copy of letter, the approval authority and proponent are formally notified that heritage concerns have met provincial standards. In this manner, the particular development review process concern for archaeological resource conservation, and MCL's heritage resource concerns arising from the Ontario Heritage Act, are addressed and satisfied in one streamlined and integrated mechanism.

**CAUTION:** While an archaeological report submitted by a licensee will always include recommendations on the extent of archaeology conducted and status for all sites documented, these recommendations cannot be acted on until the Ministry of Culture has completed its review.
and cleared the archaeological investigation. Until that time, OHA provisions remain in effect for all archaeological sites identified in the investigation, regardless of the report’s recommendations.

3.4.1 Ministry of Culture Support

In the process of reviewing development proposals for archaeological potential, the approval authority, development agency or proponent can consult with ministry staff for technical assistance and advice. There are four areas where on-going support will be provided:

(1) Potential Reviews

For those development projects where determination of potential is proving difficult, approval authority or development agency staff can contact the appropriate ministry staff to review the matter, or directly circulate the particular application to the ministry to get a formal statement on potential.

(2) On-going Monitoring of Planning Act-Related Potential Determinations

The Ministry of Culture will monitor municipal or provincial approval authority determinations of potential to ensure accuracy of determinations, and to assist in refining and improving the review process. Milestones can be established in order to narrow down the number of files to be monitored, as local capacity is established and improved. It is important to note, however, that the ministry will need to continually monitor applications where archaeological potential has been confirmed, in order to track subsequent archaeological investigations, and integrate license review with plans review needs.

(3) Mediating Disputes Arising From Determinations of Potential

Occasionally, a proponent will dispute a potential determination made for a particular application, or a local heritage group or Aboriginal First Nation will dispute a low potential determination. As well, occasionally a dispute will arise over the level of documentation needed for a significant resource, or over the discovery of human remains. The Ministry of Culture will serve as a mediator of these disputes, by reviewing the file and any additional information brought forward. Where warranted meetings between parties can be held and visual inspections of the property in question can be made.

(4) Proponent Pre-Consultation

Ministry of Culture staff can be consulted directly by development proponents prior to the formal submission of any kind of development project, on all aspects of potential archaeological conservation matters related to the property in question.
SECTION 4
ARCHAEOLOGICAL SURVEY AND SITE EVALUATION
FOR A DEVELOPMENT PROPERTY

4.1  ARCHAEOLOGICAL SURVEY

Structures and cultural landscapes of heritage significance can be readily identifiable on a
development property. However, as archaeological sites are below ground, they are not obvious
features of the landscape and are difficult to recognise. Consequently, if a development property
exhibits the potential for the discovery of archaeological remains, an archaeological field
assessment will be necessary. This entails hiring a consultant archaeologist - who must be
licensed under the Ontario Heritage Act - to survey the full extent of the property in a systematic
matter, in order to identify all archaeological remains present. Survey assessment is a relatively
straight-forward process, which will usually take a short period of time to complete (depending
on field conditions, size of the field crew, number of archaeological sites present on the property,
whether the land is ploughed or not, etc.). This work will be completed well in advance of any
servicing, grading, topsoil stripping, landscaping, or other land disturbance activities. It is also
important to note that survey can only be completed in warm weather; the frozen ground and
snow cover conditions common between December and March or April across most of Ontario
prohibits the ability of an archaeologist to survey land in winter.

The aim of an assessment is for the consultant to compile an inventory and evaluate the
significance of all archaeological sites present on the property. There are four components to this
process which the consultant will follow to obtain the end result, as detailed in the Ministry of
Culture’s Standards and Guidelines for the Practice of Consulting Archaeology in Ontario:

-  Stage 1 - Background Study

The consultant evaluates archaeological sensitivities for a particular property or properties to
determine if the potential for finding sites exists or not, as well as to inform the appropriate
assessment methodologies to be used during the survey of the property. The archaeologist can
review available archaeological and historical data for the area, interview local archaeologists, or
even conduct an initial reconnaissance to map past disturbances and other features of interest.

-  Stage 2 - Field Survey

The consultant will conduct a surface survey of the development property to identify all sites
present. The survey must include all lands that are part of the development proposal, with the
exception of areas disturbed by previous, fully destructive activities or lands which are
permanently wet (e.g. swamps, marshes, etc.), exposed bedrock, or are steeply sloped (greater
than 20°). Survey consists either of walking a ploughed field at 5 metre intervals, looking for
artifacts lying on the surface of the ground, or shovel-test pitting unploughable areas (woodlots, old pasture, etc.) at 5 or 10 metre intervals, and screening fill to identify artifacts. Interval spacing for test pits are determined by potential for the lands, as set out in the Standards and Guidelines, and by the consultant’s in the field judgment.

In terms of determining how long it will take to survey a particular property, the consultant’s Standards and Guidelines defines the minimal methodologies to be used during survey. Given those standards, studies have consistently demonstrated that when walking ploughed fields under ideal field conditions (i.e., well weathered soils with moderate discoveries of artifacts during survey) each crewmember will be capable of covering a maximum of around 25 acres in a day. In ideal test pit conditions (i.e., not traversing heavy undergrowth or woods and limited artifact discoveries), a crewmember will be capable of excavating a maximum of around 90 test pits in a day (100 test pits can cover an acre when using a 5 metre interval, while 100 test pits can cover 4 acres when using a 10 metre survey interval). Proponents can factor these standards of practice into expectations of how long a survey will take for a given parcel of land, and can also assist in the timely completion of the survey by ensuring ahead of time that conditions are ideal (e.g., land ploughed and weathered by the time the crew begins the survey).

- **Stage 3 - Site Assessment**

When an archaeological site is identified, the consultant will need to collect sufficient information about the age, size and artifact frequency of the site to evaluate its significance. This is done by mapping the extent of the artifact scatter or extent of artifact yielding test pits, and excavating a limited number of test units (1 metre in size). The consultant may choose to do this work in tandem with the Stage 2 survey, or subsequent to the Stage 2 work.

- **Documentation - The Assessment Report**

At the conclusion of this work the consultant will generate a report detailing the fieldwork conducted, sites found, and whether or not any of those sites are significant enough to require the mitigation of development impacts. At that point The Ministry of Culture will review the report (which may also entail a follow up inspection of the development property), in order to confirm that the consultant has adhered to provincial standards and licensing requirements, and to advise the proponent what further work will be required, if any, to satisfy the provincial interest in archaeological resource conservation. If insufficient fieldwork or reporting is determined based on the provincial Standards and Guidelines, the consultant will be required to conduct additional investigations or revise the report prior to the ministry concurring with its recommendations.

**4.1.1 Assessing for Possible Marine Archaeological Impacts**

It should be noted that while most undertakings within the development processes described in this primer are land based and will not impact marine archaeological sites, it is also the case that some activities will alter such sites. This can range from pipeline or cable alignments laid across
the bed of a lake or river, piling or footing placement for bridges or hydro towers, harbour development, dredging or other kinds of waterbed or shoreline alterations. Such undertakings can alter shipwrecks and other marine structures, dropped cultural remains, or land based remains that, through the passage of time or alterations to water levels (e.g., dams), are now submerged.

When development impacts encompass areas that have the potential for marine heritage, a marine assessment will need to take into account known historical data about potential marine deposits. It may also be necessary to undertake a scan of the water bed to identify possible marine archaeological sites. A visual inspection of such anomalies and other locales of concern will need to be conducted by an archaeologist with a marine archaeological license to confirm significance and avoidance options. Contact the ministry’s Marine Archaeologist for further information.

4.1.2 Hiring an Archaeological Consultant

Given that costs and delays can occur if the investigations carried out by an archaeological consultant do not meet provincial Standards and Guidelines, the proponent is encouraged to be familiar with those standards when hiring an archaeological consulting firm or individual. However, it is also recognised that the proponent, or agent acting for the proponent, will be limited in terms of understanding of the technical terminology employed and assessment process described in the bids submitted by consultants. The following practices will ensure that accurate bids are received from consultants and that the work proposed will satisfy provincial requirements for the project in question:

- Only seek bids from firms with individuals holding valid Professional Licenses.

- A license is not in itself a guarantee of the quality of the work performed. Therefore, seek bids from several firms or individuals in order to ensure a representative price range is received and to ensure that the details of individual bids are comparable.

- Obtain references. Consultants should be able to provide a list of previous clients and indicate how frequently or if at all they ever had projects delayed due to concerns raised by the ministry.

- The more information the consultant receives, the more detailed and accurate bids will be. Information provided should include a description of the project, size of property, and current field conditions (e.g. ploughed vs. fallow field, extent of major land disturbances, etc.). A detailed map depicting contours, drainage and woodlots, as well as proposed development layout (e.g. building lots, roads, services, parklands, etc.), is helpful.

- It is important to indicate if there is a need for the survey to be completed quickly. If time is a concern the consultant can propose to bring in extra crew, although this may increase the bid significantly.
• Recognise that not all firms offer the same product, so compare bids to make sure they propose similar levels of fieldwork, reporting and hours of work. While items such as salaries, report costs, etc. will vary, all bids should indicate that the provincial Standards and Guidelines will be met. For example, a bid to survey land should broadly reflect the expectations of how much time it physically will take people to survey the property at the Standards established for survey methodologies and intervals.

• If one bid is significantly higher or lower than the others, there is likely to be a reason. Because of this variability, one selection strategy often recognised as being most effective in levelling the bid process consists of seeking 3-5 bids, eliminating the high and low bids, and selecting one of the middle range bids. Another method is to select the bid that most closely meets the average price determined from all the bids received. Such practices will often ensure the proponent avoids problems arising from a low bid, or from an excessive bid proposing much more than is necessary.

• Finally, when in doubt the proponent may review the assessment process and proposals received with the ministry. While the ministry cannot evaluate the business practices of individual consultants, and will not comment on specific dollar figures, staff can review with the proponent the typical requirements needed to address archaeological concerns for their development project, and point out omissions or other differences between bids regarding proposed methodology and levels of reporting.

### 4.2 ARCHAEOLOGICAL SITE SIGNIFICANCE EVALUATIONS

Once all archaeological sites have been identified, an evaluation of their significance is required in order to determine what, if any, mitigation of development impacts is required.

Many archaeological sites identified during assessment, though an important contribution to our understanding of the past, will not be significant enough to warrant further documentation. This may be true for sites occupied very briefly, sites occupied in the recent past, or sites completely mixed up as a result of many differing occupations. As a result, the archaeological consultant investigating the site may recommend that it does not warrant further consideration. In these instances, and where the ministry concurs with the finding, the information that appears in the assessment report is considered sufficient for the purpose of documenting the site.

For other sites the importance of the data they contain, and thus the significance of their contribution to our understanding of the past, will be so great as to warrant steps being taken to protect them, or at least to ensure that the site data is not lost through impacts. Within a development context, this responsibility of ensuring such important resources are not lost falls to the proponent, as the initiator of the development impacts. While every effort will be made to balance the cost of mitigating development impacts with the financial burden this places on the developer, documenting or preserving such important components of Ontario’s past is essential,
and will justify the cost and effort required for such work.

An archaeologist will consider a number of key features that can indicate the importance, and thus significance, of a particular site. These features are a reflection of our understanding of Ontario's archaeological record and the archaeologist's evaluation of the physical characteristics of the site in question. These will not include a consideration of development circumstances, such as the nature of the development proposal, work schedules, etc., because these factors can be addressed when determining an appropriate impact mitigation strategy after the site's significance has been confirmed. The key features an archaeologist considers when evaluating significance includes:

1. **Integrity** (e.g. is the site in pristine or near pristine condition; despite past disturbances, can important data still be recovered; etc.?).

2. **Rarity or Representativeness** (e.g. is the site one of a kind, locally, regionally or provincially; is it a good comparison to similar sites from other regions; etc.?).

3. **Productivity** (e.g. does the site have the potential to contain large quantities of artifacts or exceptionally detailed data about what occurred there; etc.?).

4. **Age** (how old is the site?).

5. **Potential for human remains to be found on the site.**

6. **Geographic of Cultural Association** (e.g. does the site have a clear and distinct relationship with the surrounding area or to a particular geographic feature, such as with a unique rock formation, historic transportation corridor, etc.; is the site associated with a distinctive cultural event, ceremony or festival, etc.?).

7. **Historic Significance** (is the site associated with a renowned event, person or community?).

8. **Community Interest** (e.g. is the site important to a particular part of the community; does it represent a significant local event; etc.?).

These features of significance are detailed more fully, and specific technical measurements of significance detailed, in the province’s Standards and Guidelines for the Practice of Consulting Archaeology in Ontario.

Significance evaluations made by a consultant will be evaluated during the Ministry of Culture’s review of the consultant’s report. The ministry will then advise the licensee if the ministry concurs with the consultant's recommendations, as well as indicate what minimal mitigation work will be required to satisfy the provincial interest in conserving the resource.
SECTION 5
MITIGATING DEVELOPMENT IMPACTS TO ARCHAEOLOGICAL SITES

Where a significant archaeological site has been identified on lands proposed to be developed under the EA or Planning Acts or other land use process, the adverse impacts which will occur to the site must be mitigated. Mitigation may take the form of avoidance & protection (retention or preservation of the resource), or documentation (excavation and recording of the resource). While avoidance allows development to proceed while the site is left intact, documentation effectively "removes" the site, thus allowing development to subsequently proceed in that locale.

5.1 MITIGATION THROUGH AVOIDANCE & PROTECTION

There are a number of avoidance and protection options available to mitigate adverse impacts to archaeological resources. Avoidance usually allows development to proceed while avoiding or protecting the area around the resource. The advantage of this method is that it can be an inexpensive form of mitigation in the case of large or complex archaeological sites, while serving to preserve the resource intact. However, long term protection associated with an avoidance strategy must be secured. Long term protection will be based on a binding agreement between the proponent and municipality, Crown, or other permanent owner of the site. This can be done through the use of heritage easement agreements, zoning by-law provisions, restrictive covenants or inhibiting orders placed on title, incorporation in established setbacks, designation, or by other means which ensure the resource will not be destroyed in the future. Proponents will need to work with the Ministry of Culture and the municipality to develop long term protection strategies, and the ministry will need to review the final wording, prior to archaeological conservation concerns being satisfied for the development project.

5.1.1 Archaeological Site Avoidance Options

Avoidance as a mitigation strategy is most clearly defined in Policy 2.6.2 of the Provincial Policy Statement, which states: ...Where significant archaeological resources must be preserved on site, only development and site alteration which maintain the heritage integrity of the site will be permitted. Several options are available to meet this aim, which are also effective under most other land use development processes:

Incorporation -

This may involve the re-design of the project (e.g., lot layouts, parkland, road alignments, etc.), to incorporate the site into the development scheme. The site must be protected during construction by physically defining a "buffer zone" around it (i.e., minimally 10 metres plus snow fencing or other visible barriers), instructing construction crews to avoid the location, and providing written assurances that the site will not be disturbed
after development. Long term protection provisions also will be required.

Park/Open Space Dedication -
When a site is located entirely on a parcel of land to be dedicated as parkland, greenspace, left as open space, within a protected easement, alignment or within a formally defined setback or restricted area, avoidance may be possible. However, no landscaping, infilling or grading can be planned for that block of land. The long term or permanent owner must be made aware of the resource, and must agree to long term protection measures (e.g. condition on title, restrictive zoning by-law, etc.)

Archaeological Site Capping -
Site capping is not an objection for archaeological not currently sealed. It is viable in very limited circumstances when a deposit is found already sealed (e.g., in an urban setting underneath fill), and will be left sealed at the conclusion of project work (e.g., a deep trench is filled in). In these circumstances temporary measures need to be taken (e.g., shoring up the exposed face of the sealed deposit), and the proponent will need to confer with Ministry of Culture staff on specific strategies to be employed.

5.1.2 Long Term Protection Measures After Archaeological Avoidance

Regardless of which avoidance option is employed, long term protection measures must be a part of the avoidance plan. The preferred method available for Planning Act approval authorities and proponents is a prohibitive zoning by-law. Paragraph 3.3 of subsection 34(1) of the Planning Act states that the council of local municipalities can pass a zoning by law, the intent of which is: ... for prohibiting any use of land and the erecting, locating or using of any class or classes of buildings or structures on land that is the site of a significant archaeological resource. As such, the municipality can adopt a zoning by law which reiterates this section of the Planning Act. Wording of the zoning by-law could be similar to the following:

\textit{Municipal Zoning By-Law \#xxx}
\textit{No Soil Disturbance or the erection of any structures shall take place on Part x, defined as [locational information], because this property is identified as containing a significant archaeological site.}

Additionally, there may be opportunities for tying avoidance of significant archaeological sites to restrictive setbacks, provisions in the subdivider’s or development agreement, or placing a restrictive condition or inhibiting order on title. Sample wording for such a condition is offered below. Any such option will require the co-operation and agreement of the local municipality.

\textit{No soil disturbances shall take place within [locational information: e.g. xx metres from edge of lot, part x of registered plan xx; Lots x-x of the development plan, etc.] until the archaeological remains within this area have been excavated by a licensed archaeologist, and to the satisfaction of the Ministry of Citizenship,}
Culture & Recreation and municipal approval authority.

Other, less effective options that should only be utilised when a prohibitive zoning by-law or restrictive condition on title are not viable, include easements placed on the site area, dedication of the property to the municipality or other protective land holder, subdivider’s agreement, etc. As well, for Crown development agencies, such Ontario Hydro, bridge authorities, etc., protection agreements and easements can be developed with the ministry to ensure long term protection. Ultimately, the intent is to ensure that a permanent record of the presence of the resource is maintained and is flagged if any development for that location is proposed years or decades later. This ensures that the avoidance strategy developed is not simply delaying destruction and loss of the resource to a later time.

5.2 MITIGATION THROUGH EXCAVATION

A number of removal measures are available to mitigate unavoidable impacts to archaeological resources. Removal usually will consist of excavating all or part of the resource in question by a licensed archaeologist. The intent is to recover the important contextual and artifact data present on the site in advance of development disturbance. Given this, removal is actually a process of documentation, wherein the field excavations convert the resource into transportable data that can be taken away from the area of impact and preserved through analysis, artifact curation and report writing. In this way, the presence of a significant archaeological site will not prohibit development from proceeding, as long as the site's pertinent data are removed through excavation. However, it should be noted that removal through excavation is often a more expensive mitigation option than avoidance and protection, so should be undertaken only when avoidance of development impacts is not feasible. Also, the extent and complexity of the documentation measures required will vary as a result of the type and significance of the specific archaeological resource.

5.2.1 Archaeological Resource Excavation Options

Documentation through removal requires site excavation, which will often be referred to as a Stage 4 excavation by the archaeological consultant. The methods used to excavate a site, and extent of site excavated, will be based on its relative significance and condition. There are three means of mitigating development impacts through excavation:

1) Limited Excavation -

For some sites, a limited excavation may be sufficient. This entails hand-excavating one metre square units by shovelling off the topsoil or ploughzone (i.e. top 10-30 cm of soil in the 1 metre unit) and placing the fill through a screen, sifting out and recovering all artifacts present in that fill. The data recovered provide sufficient information to define site size, artifact yield, and confirm cultural and temporal affiliations. Occasionally, limited excavations will yield data demonstrating that the site requires full documentation. In such instances a complete excavation will be required.
2) Complete Excavation -

An archaeological site found during assessment may demonstrate that it is significant enough to warrant a complete excavation. Alternatively, limited excavations of the site will yield data confirming that it requires a complete excavation. In either case, the site can be completely excavated through the continued hand excavation of topsoil units, along with any sub-surface cultural features uncovered (i.e., extending limited excavations outward, or "block" excavations). Alternatively, a full excavation can consist of mechanically stripping the topsoil over a site area, followed by the hand cleaning of the exposed subsoil surface (often referred to as "shovel shining"), then recording and hand excavating all sub-surface cultural features exposed by this stripping and shovel shining. Often, particularly for large or complex sites, a combination of hand excavations and topsoil stripping may be necessary. The determination of a particular excavation strategy required for a specific site will be based on the type of site, its significance, and its current condition (integrity).

3) Monitoring -

Very rarely, impacts will occur in areas that have undergone substantial disturbance, but may still contain significant archaeological deposits sealed by fill (e.g. within urban areas). In areas exhibiting a very high potential for containing deeply buried deposits, on-site monitoring of development-related construction work by a qualified archaeologist may be an appropriate method of documentation. The archaeologist's task is to spot and document any significant deposits encountered during construction-related deep excavations. If deposits are found, the archaeologist must be given sufficient opportunity to examine and record the deposit and its contextual setting. All portions of the deposit to be impacted will need to be documented. Deposits extending beyond impacted areas can be recorded and left sealed. This work must be conducted within appropriate on-site safety regulations.

The determination of a particular excavation methodology for a significant archaeological site will be based on the ministry of Culture Standards and Guidelines for the Practice of Consulting Archaeology in Ontario. Every consideration will be made to balance the need to document the resource before it is destroyed by development impacts, on the one hand, with the impact of the excavation cost on the proponent or development agency, on the other.

Two key caveats should be kept in mind when determining an appropriate excavation strategy: first, excavations, regardless of the method employed, can only occur in warm weather. So the excavation of a site needs to be completed prior to the start of winter. Secondly, undisturbed sites in pristine condition are extremely important and fragile heritage resources. If there is absolutely no way to protect the site, then documentation will always require an intensive, and very expensive, form of hand excavation, consisting of the removal of unit fill by trowel, with careful recording of both vertical and horizontal location for each artifact in the unit.
5.2.2 Excavation Reporting and Care of Collections

After an archaeological site has been removed and documented through excavation, the consultant is required to submit a license report to the ministry. This report will need to describe the excavation methods used, data recorded in the field, and artifacts recovered. While the report is intended to satisfy the proponent's development responsibilities, it also must satisfy the archaeological consultant's license requirements established under the Ontario Heritage Act and provincial Standards and Guidelines. The intent is to ensure that the report will be detailed enough so that any archaeologist reading it can easily understand why the site was excavated in the manner chosen and what potential the site findings may have for further, detailed or comparative research. As such, a discussion of specific excavation methodologies, recording grids and datums, measurements and detailed mapping of cultural features and deposits all need to be included in the report. Likewise, the report will require descriptive and analytical analyses for all major diagnostic artifact categories, descriptive analyses for other artifact categories, as well as temporal and cultural comparative analyses. Background research, maps, photographs, an artifact catalogue and other relevant information are also expected.

In terms of the disposition of any artifacts recovered during excavation, Section 6 of Regulation 881 of the Ontario Heritage Act identifies as a standard term and condition of any archaeological license:

...that the licensee keep in safekeeping all objects of archaeological significance that are found under the authority of the license and all field records that are made in the course of the work authorised by the licensee, except where the objects and records are donated to Her Majesty the Queen in right of Ontario, or are directed to be deposited in a public institution under subsection 66(1) of the Ontario Heritage Act.

As a result, an on-going responsibility for any archaeologist who has conducted a site excavation by license issued under the Ontario Heritage Act is the continual care and maintenance of all artifact collections, materials, field notes and other documentation made during the excavation. This responsibility can only be terminated if the licensee donates all site objects (artifacts, soil samples, etc.) and field records (field notes, maps, recordings, photos and slides, etc.) to the Province. Alternatively, if a public institution (museum, heritage centre, etc.) may accept the on-going responsibility for caring and maintaining the collections recovered from a site excavation. The Minister will normally accede to such a transfer provided that:

- The receiving institution is indeed public.
- The entire collection, consisting of both archaeological objects and field records, are to be transferred.
- It can be confirmed that the receiving institution has adequate storage facilities for both collections and field records.
• The receiving institution has reasonable researcher access policies and the capacity to accommodate such researchers.

• The receiving institution agrees that it cannot transfer or dispose of the collections and field records without provincial approval.

These provisions need to be confirmed prior the transfer being approved. Please note: it is a violation of the licensee's responsibilities under the Ontario Heritage Act to transfer collections without first receiving Minister's direction. Likewise, as a result of these regulatory provisions, private ownership of archaeological collections made under license is circumvented. As such, it is a violation of the Ontario Heritage Act for a collection made under license to be held by another individual, or transferred by the licensee to any private institution or corporation.
SECTION 6
CLEARANCES, CONCURRENCES & CONTINGENCIES

The final step in addressing archaeological conservation concerns is the confirmation from the Ministry of Culture that completed archaeological measures have satisfied provincial Standards and Guidelines, and that licensed only alteration restrictions for all identified archaeological sites arising from Ontario Heritage Act section 48(1) can be waived (in the case of sites excavated and removed), or retained (in the case of avoidance and protection). Such a confirmation will be provided following the submission of an assessment report, when no significant archaeological resources have been documented, or following the submission of a mitigation report, once all development impact mitigation measures have been completed. This confirmation will take the form of a copy of the clearance letter sent to the licensee, and will indicate that the copy serves to demonstrate that archaeological requirements have met provincial interests in the conservation of archaeology tied to the development.

In the case of large-scale excavations the submission of a preliminary report can be accepted as an interim submission, for the purpose of issuing a concurrence that all fieldwork has met provincial standards, thus allowing for development clearance. The licensed archaeologist will still need to submit a final report to the Ministry of Culture within normal reporting deadlines.

6.1 PARTIAL CLEARANCE OR SIGN-OFF

Occasionally, development schedules and excavation needs may conflict. Consequently, when a significant archaeological site has been found on part of a development property, and impacts to the site are to be mitigated through excavation, the proponent may be able to obtain a partial clearance for areas of the development away from the site. For example, in the case of an aggregate pit permit, some portions of the property may not be scheduled for extraction for several years. If a significant archaeological site is present on a latter stage of the proposed extraction, it may well be preferable to seek a clearance for the earlier phases of the operation. So when Stage 3 work is completed a partial clearance is possible.

The proponent is responsible for ensuring adverse impacts to the site or sites of concern are mitigated prior to obtaining final clearance for the affected portion(s) of the development. This is done through avoidance and protection strategies (see avoidance options outlined in Section 5 of this manual). The proponent is also responsible for ensuring construction crews avoid the area of remaining concern during development, usually by establishing a temporary, physical barrier (e.g. snow-fencing, etc.) around the site, as well as a minimal additional 10 metre buffer beyond the edge of the site. By instructing construction crews to avoid such areas, this will ensure no incidental impacts occur (e.g. from heavy machinery turnarounds or temporary access roads, storage and parking of equipment and machinery, etc.). Until excavation is completed, the sites are also protected through Section 48(1) licensed only alteration provisions of the OHA.
6.2 CONTINGENCY PLANNING

Modifications to lot or parkland layouts, changes in servicing requirements, re-alignments, changing access routes, and many other modifications will occasionally create unforeseen impacts to identified archaeological resources or previously unexamined areas of archaeological potential. In such cases the proponent will need to change a mitigation strategy or the timing of that work, or undertake additional assessment. It is also possible that deeply buried archaeological deposits may be encountered during construction. In such instances ministry Archaeology staff should be notified immediately.

6.2.1 Unmarked Burials

Despite every effort of the archaeological consultant, deeply buried deposits can be missed during assessment of a property. This is particularly the case for unmarked burials, which may only be uncovered during construction. While burial practices varied considerably in the past, it is reasonable to state that there exist thousands of unmarked burials across Ontario. As a result, there is always a chance that land disturbance will lead to the discovery of human remains.

As soon as human remains are encountered, either during an archaeological site excavation or during construction or extraction activities, provisions of the Coroner’s and Cemeteries Acts are triggered. Once the discovery is determined not to be a crime scene, Cemeteries Act provisions require that no person disturb or order a burial site to be disturbed. The landowner will need to ensure the remains are removed and reinterred into an existing cemetery, or that the location of the discovery is itself registered as a cemetery. When the remains are of Aboriginal peoples, the landowner will need to negotiate with the nearest First Nations community or identified First Nations representative in the process of determining what appropriate actions should be taken.

Ministry Archaeology staff can assist in negotiating a resolution of burial site concerns between the many parties with an interest in the discovery. Generally, either dis-interment and reburial into an existing cemetery, or dis-interment and reburial into a small area of greenspace on the development, registered as a closed cemetery, can commonly satisfy most concerns. However, dealing with human remains often and quite naturally is an emotional issue, and immediate notification of both the Cemeteries Registrar of the Ministry of Government Services and Ministry of Culture can greatly assist in reaching a rapid and mutually acceptable solution for both the landowner and the representatives of the deceased.
APPENDIX A:

A SUMMARY OF ONTARIO'S ARCHAEOLOGICAL CULTURE HISTORY
An Overview of Ontario's Archaeological Record
(Southern)

Southern Ontario's archaeological heritage extends back some 12,000 years to the time when humans, following the retreat of glaciers north first inhabited this part of the world. Occupation of the region has continued uninterrupted since that time, with diverse groups inhabiting this region and exploiting the abundance of natural resources found here. Archaeologists divide this occupation into several broad time periods, which reflect changes in ways of life and artifact patterns. Dates provided here are given in years BP (Before Present).

**Paleo-Indian Time Period (11,000 BP - 10,000 BP)**

Southern Ontario was an Arctic-like environment during this period, and the people who lived here followed a seasonally nomadic way of life, living in small groups and travelling wide areas over the course of a year, and hunting big game such as mastodon and caribou. Very few traces are left of this early time period, consisting almost exclusively of the tools and waste by-products associated with a chipped stone technology, one characterised by the use of large spear points with a distinctive "fluting" or groove down their length. Because the environment was very different then, these sites are found associated more with relic water courses and especially older glacial beach ridges.

**Archaic Time Periods (10,000 - 3,000 BP)**

The Archaic is broken down into Early (10,000-8,000 BP), Middle (8,000-5,000 BP), and Late (5,000-3,000 BP) periods. Distinctions between periods are generally made on the basis of changes to projectile point forms and the appearance of other distinctive artifact types. Sites from especially the Early and Middle periods are rare, and it is believed that people during this period lived a broadly similar lifestyle to that seen earlier, albeit based on a changing environmental setting. However, by the Late Archaic there is some evidence for a population increase, more formalised subsistence patterns exploiting a wider range of food sources (i.e. fish and plants), some definition of territorial groups, a much wider and diverse range of artifact types, and the emergence of the use of cemeteries.

**Woodland Time Periods (3,000 BP - 300 BP)**

The Woodland is also divided into Early (3,000 BP - 2400 BP) Middle (2400 BP - 1200 BP), Late (1200 BP- 650 BP) and Terminal (650 BP - 300 BP) periods. Initially the Woodland is distinguished from earlier Archaic periods by little more than the appearance of clay pottery. However, rapid and successive changes mark this period, as communities appear to get larger and more territorial, develop more sophisticated settlement-subsistence patterns, and reflect long distance trade and exchange networks extending as far away as Mexico.
By the Late Woodland Aboriginal communities had developed agricultural subsistence practices which in part lead to the creation of large villages, housing several hundred individuals who lived in communal houses surrounded by fortified palisades. Village sites of over a dozen acres are known from this period. Smaller sites reflecting specialised activities (such as fishing camps or agricultural hamlets) appear, and cemeteries can include burial pits holding dozens or even hundreds of individuals.

The end of the Woodland Period is marked by the arrival of European explorers, missionaries and traders, as evidenced by the appearance of European-manufactured trade goods found on Aboriginal sites. This is also a period marked by increased warfare and epidemics, arising from diseases brought over by the Europeans.

**Historic Period**

Archaeologists tend to refer to the last 300 years or so of Ontario's past as the Historic Period, distinguishing this time from the earlier Prehistoric period. The terms Prehistoric and Historic are, of course, a bit of a misnomer and are not meant to imply that the first 11,500 years or so of Ontario's archaeological record are not part of Ontario's history. Rather, these terms reflect the mindset of archaeologists, who make the distinction because when they study the first 11,500 years or so of Ontario's history, they rely exclusively on artifacts and archaeological deposits. To the archaeologist, then, the Historic Period is that brief part of Ontario's history when historical documents - written records - were made, and thus are available to help augment the study of artifacts and archaeological deposits in interpreting the past.

This Historic period can be separated into early (pre-1800) and late (post-1800) components. Early historic archaeological sites consist mostly of Native occupations, along with some European military forts, trader cabins, early pioneer sites, etc. After 1800, southern Ontario was dramatically changed as a result of massive, non-Aboriginal migration (the non-Aboriginal population in southern Ontario increased from about 10,000 in 1800 to over 150,000 by mid-century). Given this huge influx of people into southern Ontario, it isn't too surprising that many of the archaeological sites found from this period represent the pioneer cabins and homesteads of primarily European settlers. And finally, the archaeological investigation of sites dating after about 1870 is mostly a study of the residential, commercial and industrial urban growth that occurred in and around the major city centres of southern Ontario.

**An Overview of Ontario's Archaeological Record**

**(Northern)**

While many of the general trends in the archaeological record noted for southern Ontario have similar counterparts when discussing northern Ontario, they occurred at different times and to differing degrees. Also, northern Ontario is a vast region, extending from the northern Great Lakes north to the sub-arctic and west to the beginning of the plains. As such, it is difficult to
describe the 9000 years of archaeology for an area as large as northern Ontario in a couple of pages. Nevertheless, there are some broad over-generalizations to be made. It must be remembered, however, that very different influences were felt by the peoples living on the shield depending where, in this vast extent of boreal forest, one is discussing. The influences, for example, felt by the peoples living north of the Ottawa and French Rivers were often quite different than those felt by the people living far to the west and bordering close to the plains.

The encroachment of people into northern Ontario is directly tied to the retreat of the continental glacier. Most scholars agree that people first moved into the area on a permanent basis sometime between 10,000 and 9,500 years ago. These incursions represented small bands of hunters and gatherers moving in from the south as the land became clear of ice. In the east, these people are believed to have originated from southern Ontario and the Bruce Peninsula, and then across to Manitoulin Island and the north shore of Lake Huron. In the west, they seem to have entered from the south and the west and have ties to groups in Wisconsin, Minnesota and the high plains.

Archaeologists refer to these early people as Paleo-Indians. They moved into a landscape quite different from that seen today. There initially may have been a tundra-like Arctic environment, followed a few centuries later by an open spruce forest. It is believed that one of the more important game species hunted by Paleo-Indians would have been caribou, but other game would undoubtedly have been harvested. Paleo-Indians are believed to have lived in small bands, probably extended families, staying together throughout most of the year and gathering with other groups at specific times of the year for hunting, to conduct religious ceremonies, and to renew community solidarity.

This type of lifestyle probably changed very little over the next 8,000 years or so in the north, although there is evidence of somewhat expanding populations and ever expanding use of the region as the glaciers continued to retreat, and the climate stabilised over time.

Archaeologists tend to classify periods of time by the visible changes in technology that are recognisable in the artifacts and excavated sites occupied at different times. Sometime around 7,000 years ago, there is a visible change in the artifacts that one finds on sites in northern Ontario from the artifacts found on preceding Paleo-Indian sites. Spear points change shape quite dramatically and there are, for the first time, discoveries of artifacts made from grinding and polishing stone, rather than chipping them into the desired shape and form. This period is referred to as the Archaic, and may represent the adaptation of people to an increasingly milder climate in the north, and changing varieties of animals and plants available for subsistence. This changed way of life lasted with only minor changes (at least as can be recognised archaeologically) for some 5000 years. Also, it should be remembered that these people - although living in small, scattered bands across the north - were not living in isolation. Evidence of trade with groups further afield is discovered at sites from this period, including the discovery of artifacts made from Lake Superior Copper sources on sites as far east as New York State, as far west as Alberta, and south to the Mississippi river system. The trade routes established during this time would last for thousands of years.
It is undoubtedly along these trade routes that an influence leading to the next major technological change in prehistory first was introduced to the north. This change was the introduction of ceramics (clay vessels) into artifact assemblages, and its first appearance in the region is usually pointed to by archaeologists as the start of the Woodland period. Ceramics first appear in the Mississippi and Ohio river systems, and then southern Ontario, some 500 years before they reach northern Ontario. After ceramics had been established across the north, subsequent changes in the method of manufacture, vessel form and decorative styles all help to allow archaeologists to subdivide the Woodland period into an Early, Middle and Late Woodland. And with this distinction, other changes through time are observed. For example, the building of burial mounds begins in selected areas, and there also appears to be a sudden increase in the use of wild rice as a staple food resource. This, in turn, may also have led to an increase in population, but we still can’t say what magnitude of increase this consisted of, or how consistent this increase was across the north.

It is during the Late Woodland, in the 17th century AD that European explorers and others first arrive in northern Ontario. This brings written accounts and histories, and the rise of a fur trade and the subsequent European expansion in the north that would have a dramatic effect on Native ways of life.
APPENDIX B:

CHECKLIST FOR NON-SPECIALISTS WHEN DETERMINING THE ARCHAEOLOGICAL POTENTIAL OF A DEVELOPMENT PROPERTY
**ARCHAEOLOGICAL POTENTIAL CHECKLIST**
*FOR NON-SPECIALISTS*

<table>
<thead>
<tr>
<th>Potential Feature</th>
<th>Yes</th>
<th>No</th>
<th>Not Available</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Known Archaeological Site (250 m)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>If Yes, Potential Determined.</td>
</tr>
</tbody>
</table>

*** PHYSIOGRAPHIC FEATURES ***

| 2  Water - Any within 300 metres? | [ ] | [ ] | [ ] | If Yes, what kind of water? |
| 2a  Primary Water Source (300 m) (lakeshore, river, large creek, etc.) | [ ] | [ ] | [ ] | If Yes, Potential Determined. |
| 2b  Secondary Water Source (200 m) (stream, spring, marsh, swamp) | [ ] | [ ] | [ ] | If Yes, Potential Determined. |
| 2c  Ancient Water Source (300 m) (beach ridge, river bed) | [ ] | [ ] | [ ] | If Yes, Potential Determined. |
| 3  Elevated Topography (knolls, drumlins, eskers, plateaus, etc.) | [ ] | [ ] | [ ] | If Yes, and Yes for any of 4-9, Potential Determined. |
| 4  Pockets of Sandy Soil in a clay or rocky area | [ ] | [ ] | [ ] | If Yes, and Yes for any of 3, 5-9, Potential Determined. |
| 5  Unusual Land Formations (mounds, caverns, waterfalls, etc.) | [ ] | [ ] | [ ] | If Yes, and Yes for any of 3-4, 6-9, Potential Determined. |

*** HISTORIC CULTURAL FEATURES ***

| 6  Extractive Area (for food or scarce resources) | [ ] | [ ] | [ ] | If Yes, and Yes for any of 3-5, 7-9, Potential Determined. |
| 7  Non-Aboriginal Settlement (monuments, cemeteries, etc.) | [ ] | [ ] | [ ] | If Yes, and Yes for any of 3-6, 8-9, Potential Determined. |
| 8  Historic Transportation (road, rail, portage, etc.) | [ ] | [ ] | [ ] | If Yes, and Yes for any of 3-7 or 9, Potential Determined. |
| 9  Designated Property (Refer to LACAC or Clerk’s office) | [ ] | [ ] | [ ] | If Yes, and Yes for any of 3-8, Potential Determined. |

*** APPLICATION SPECIFIC INFORMATION ***

| 10  Local Knowledge | [ ] | [ ] | [ ] | If Yes, Potential Determined |
| 11  Recent Disturbance (confirmed extensive and intensive) | [ ] | [ ] | [ ] | If Yes, No Potential |

- If Yes to any of 1, 2a-2c, or 10: Archaeological Potential is **Confirmed**
- If Yes to two or more of 3-9: Archaeological Potential is **Confirmed**
- If unqualified Yes to 11, or no to 1-10: **Low** Archaeological Potential is Confirmed

Please refer to Section 3 of this Primer for full explanation of the categories listed. These criteria are not intended for use by professional archaeologists, who are expected to apply expertise and in-depth knowledge of regional archaeology to determine survey strategies.
<table>
<thead>
<tr>
<th>SOUTHERN ONTARIO</th>
<th>Time Period</th>
<th>Cultural Label</th>
<th>Time</th>
<th>NORTHERN ONTARIO</th>
<th>Time Period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LATE HISTORIC</strong></td>
<td>Urban (commercial/industrial) Rural (farming) Pioneer (land surrenders &amp; reserves)</td>
<td><strong>100 years ago</strong></td>
<td>Pioneer (land surrenders &amp; reserves)</td>
<td><strong>HISTORIC</strong></td>
<td></td>
</tr>
<tr>
<td><strong>EARLY HISTORIC</strong></td>
<td>French &amp; Algonquian &amp; British Iroquoian</td>
<td><strong>250 years ago</strong></td>
<td>Fur Trade</td>
<td><strong>LATE WOODLAND</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LATE WOODLAND</strong></td>
<td>Inter-Lakes Western Basin Inter-Lakes Western Basin - Neutral, Huron, St. Lawrence</td>
<td><strong>500 years ago</strong></td>
<td>Wanikan</td>
<td><strong>EARLY WOODLAND</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Late Middle Early</td>
<td><strong>1,000 years ago</strong></td>
<td>Blackduck</td>
<td><strong>EARLY/ARCHAIC</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transitional</td>
<td><strong>2,000 years ago</strong></td>
<td>Selkirk</td>
<td><strong>ARCHAIC</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Riviere</td>
<td><strong>3,000 years ago</strong></td>
<td>Eastern Algonkians</td>
<td><strong>PALEO-INDIAN</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Glen Meyer, Pickering</td>
<td><strong>4,000 years ago</strong></td>
<td>Laurel</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDDLE WOODLAND</strong></td>
<td>Point Penninsula Saugeen Meadowood</td>
<td><strong>6,000 years ago</strong></td>
<td>Shield Archaic</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EARLY WOODLAND</strong></td>
<td>Meadowood</td>
<td><strong>7,000 years ago</strong></td>
<td>Old Copper Culture</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LATE ARCHAIC</strong></td>
<td>Small Point Tradition Broad Point Tradition Narrow Point Tradition</td>
<td><strong>8,000 years ago</strong></td>
<td>Laurentian Stemmed</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MIDDLE ARCHAIC</strong></td>
<td></td>
<td><strong>9,000 years ago</strong></td>
<td>Plano</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EARLY ARCHAIC</strong></td>
<td>Bifurcate Corner-Notched Side Notched</td>
<td><strong>10,000 years ago</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PALEO-INDIAN</strong></td>
<td>Late Early</td>
<td><strong>12,000 years ago</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>