Unit 1F - Stage 4: Protection and Avoidance

Overview of Stage 4 Options for Mitigation of Development Impacts

The objective of Stage 4 is to address development impacts on an archaeological site with cultural heritage value or interest. This unit outlines requirements for shaded section:

Protection and Avoidance

- The use of physical, legal, planning and administrative tools to protect the archaeological site and avoid it during development, with the objective of preserving it intact.
- If the archaeological site remains unaltered, no additional fieldwork is required. Archaeological concerns have been addressed and development may proceed.
- This is the preferred option for archaeological sites with cultural heritage value or interest.

Strategy	Options
Project redesign	• Exclusion of the protected area • Incorporation of the protected area
Reduction of impacts	• Frozen ground access • Partial protection and avoidance • Protection of sealed deposits • Temporary protection and avoidance
Use of legal, planning and administrative tools for long-term protection	• Designation • Zoning bylaw • Condition on title • Easement • Transfer of Ownership

Excavation

- Controlled removal and recording of archaeological site context, cultural features and artifacts, to document the site's cultural heritage value or interest and preserve its information for future study
- When the archaeological site no longer exists in the ground, archaeological concerns have been addressed and development may proceed.

Construction Monitoring

- Monitoring development activities to document sealed or deeply buried archaeological resources or to ensure avoidance of protected areas.

For unshaded sections, see *Standards and Guidelines for Archaeological Fieldwork: Stage 4: Excavation* and *Standards and Guidelines for Archaeological Fieldwork: Stage 4: Construction Monitoring.*

Stage 4 – Protection and Avoidance

Protection and avoidance is the preferred option for archaeological sites with cultural heritage value or interest, as it preserves them intact. It is most feasible when the archaeological site's cultural heritage value or interest is identified and assessed early in the planning stages of the development, when plans are most flexible.

The consultant plays both an advisory role and an active fieldwork role in Stage 4 protection and avoidance. Through the Stage 3 report recommendations, the consultant provides advice to the proponent and approval authority on protection and avoidance options and best practices for their implementation. Depending on the choice of protection and avoidance strategies, the proponent may be required to engage a consultant to carry out fieldwork activities or monitor construction where the potential to impact archaeological resources exists.

To be effective, preservation must include short-term protection (protecting the resources from impacts during construction) and long-term protection (using legal, planning and administrative tools to protect the archaeological site and ensure it is addressed in any future land use changes).

Standard Requirements for Implementation of Protection and Avoidance Strategies

When making recommendations to the proponent or approval authority, the consultant should advise that the following requirements must be met in the implementation of any protection and avoidance strategy:

1. Any protection strategy must be preceded by complete Stage 2 and Stage 3 assessments to establish the exact limits of the archaeological site. Protection is not an alternative to completing either of these documentation stages. The protected area must include the complete archaeological site as well as a 10-metre buffer zone, or 20 metre buffer zone for Aboriginal village sites. The buffer zone may be reduced where geographic constraints occur (e.g. river edge, cliff edge) within that zone.
2. An interim avoidance strategy (i.e., partial clearance at the end of Stage 2 for the entire property) may be implemented in advance of Stage 3 provided buffer zones for all sites requiring Stage 3 are a minimum 20 metres, and that monitoring of construction will occur if land disturbances come within 50 metres of the area to be avoided (see *Project Reports and Maps: Stage 2*).
3. Options that include passing ownership of a protected area to a public land-holding body (e.g. municipality, conservation authority, provincial

agency) require that the long-term owner accepts responsibility and has the capacity to ensure the long-term protection of the protected area.

4. In order to allow construction up to the edge of a protected area, the proponent must ensure the protected area is not altered, by taking the following measures:
   - ☑ erecting a temporary barrier around the protected area
   - ☑ issuing "no go" instructions to all on-site construction crews, engineers, architects or others involved in day to day decisions during construction
   - ☑ showing the location of the protected area on all contract drawings, when applicable.
5. The proponent must ensure that construction does not affect the protected area by engaging a consultant archaeologist to review site and barrier locations before construction and visit the protected area during construction to monitor effectiveness of avoidance strategies.
6. A consultant must conduct an inspection after any land use development activity and report to the Ministry of Culture on the strategy's effectiveness in ensuring that the protected area remains intact (see *Project Reports and Maps: Stage 4: Protection and Avoidance, Construction Monitoring*).

Standard Documentation of Protection and Avoidance

If the approval authority and proponent support the recommendation for protection and avoidance, the Ministry of Culture requires the following documentation to be filed as appropriate, to ensure the conservation, protection and preservation of the heritage of Ontario:

1. Documentation confirming support of the strategy (e.g. letter from the approval authority, copy of the implemented formal long-term protection provision).
2. Documentation from the proponent confirming measures to ensure short-term protection during construction.
3. A schedule for monitoring during and after construction.
4. Clear colour photographs or digital images documenting the processes of covering over exposed features, shoring up exposed profiles and re-sealing deeply buried deposits, as appropriate: minimum of before, during and after from two locations or views.
5. Large scale section of the development plan to clearly document:
   - The location of the archaeological site recommended for protection

- The protective buffer around the site
- The extent of property subject to long term protection.

Project Redesign

This involves changing the design, layout, extent or location of the proposed project or planned construction within the project property, in combination with the use of legal, planning or administrative tools to protect the archaeological site. This could include relocating or re-positioning buildings, roadways, lot size or layouts, or project facilities (e.g. construction staging areas or stockpiles).

The two options for project redesign are:

Exclusion of the Protected Area

The boundaries of the area proposed for development are re-drawn to exclude the protected area in the final development application (e.g. a proposed quarry is reduced in scale, a proposed highway or pipeline is realigned away from the protected area). In this way, the protected area is no longer part of the proposed development. This is usually only viable for pre-submission processes, where archaeology is completed before the submission of a development application.

Incorporation of the Protected Area

The protected area is included in the final development plan, but the area containing the site is not subject to any form of land alteration (e.g. within an open space, woodland or parkland setting, restrictive setback or protected environmentally sensitive area). The allowable uses for the area must not include any activities that might affect the archaeological site either temporarily or permanently. This includes landscaping, infilling, or tree removal.

Reduction of Impacts

The intent of this approach is to reduce impacts to the protected area by minimizing disturbance or by using construction practices that minimize ground disturbance. These options are most viable when construction disturbance will be limited or temporary:

Frozen Ground Access

Temporarily restricting access over the surface of a protected area to winter when the ground is frozen and access has minimal impact. This is

an effective option for temporary access roads or staging areas for construction or linear corridor projects.

Requirements

1. Ground must be frozen to a depth of 10 centimetres before allowing heavy machinery access (e.g. vehicle crossings, timber harvesting).
2. The proponent must engage a consultant archaeologist to monitor and assess the protected area for impacts in the field season following any activity.

Partial Protection and Avoidance

Conducting excavation and documentation on part of the archaeological site and leaving the remainder intact and protected through incorporation strategies. This is only acceptable when a single clearly defined portion of a site cannot be protected.

Requirements

1. The unexcavated protected area must be planned for eventual ownership by a single publicly accountable landowner (e.g. municipality, conservation authority, provincial agency).
2. The unexcavated protected area must be continuous and uninterrupted (i.e. it is not acceptable to excavate scattered fragments of an archaeological site and leave the rest undocumented). Locating a cluster of back yards or parcels of land with multiple allowable land alterations over the area is not acceptable.
3. Any previously exposed faces of the archaeological site must be recorded by a consultant archaeologist, shored up to avoid collapse, and then backfilled.
4. When dealing with very large and complex urban archaeological sites (e.g. extending over a city block or more, previously subjected to alterations and fill), site- and project-specific strategies may combine partial excavation and partial avoidance, such as:
   - ☑ excavation of footings for a structure at several locations across an archaeological site, if the unexcavated protected areas will remain accessible after construction (e.g. bridge footings)
   - ☑ excavation to accommodate installation of a pipeline through the archaeological site, if the excavation is wide enough to avoid future impacts to the unexcavated protected areas due to installation and contingencies (e.g. emergency excavations to repair a pipeline break) and if remnant protected area on either side of the pipeline is not too small to be effectively protected.

Standards for Fieldwork

1. Before beginning partial excavation, map and stake out the exact limits of planned impacts, based on the final project design specifications.
2. The excavated area must extend five metres beyond the edge of mapped impacts, to ensure no incidental impacts to intact archaeological resources.
3. If a portion of an archaeological site that should have been avoided is accidentally exposed (e.g. topsoil stripping extends beyond established limits of area to be excavated), it must be completely excavated and documented. Do not rebury the exposed portion without documenting it.
4. Conduct and report on excavation following *Standards and Guidelines for Archaeological Fieldwork: Stage 4: Excavation* and *Project Reports and Maps: Stage 4.*

Protection of Deeply Buried Sealed Deposits

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

This is not the same as artificial “capping” (sealing exposed archaeological resources that are not deeply buried under a deposit of soil such as a berm or mound). Capping is not acceptable as a protection strategy in any context, as it can increase the risk of damage from compaction, accelerated artifact deterioration and unintentional impacts during cap construction.

Protection of deeply buried sealed deposits is a viable option if the following requirements are met:

Requirements

1. The fill above the archaeological site is a minimum depth of 50 centimetres.
2. The size, depth and extent of the sealed archaeological site have been determined and mapped by a consultant archaeologist.
3. Any previously exposed faces of the archaeological site must be recorded by a consultant archaeologist, shored up to avoid collapse, and then backfilled.
4. The proposed surface uses:

   ☑ are similar to as-found surface conditions (e.g. road or parking lot, green space)

- ☑ do not require below ground construction or excavation to within 20 centimetres of the archaeological site.

5. Increasing the grade of the as-found ground surface (i.e. adding to the fill already on top of the deeply buried archaeological resources) is acceptable if it will not impede future access to the archaeological resources or threaten their preservation when that fill is removed in the future. Geotextile fabric must be placed under the new fill to mark the former ground surface.

Temporary Protection and Avoidance

Delaying the excavation of the archaeological site until just before development (e.g. when an archaeological site is in a part of a proposed quarry where aggregate extraction will not begin for several years, or a plan of subdivision is to be developed in stages). This is less a protection strategy and more a co-ordination of excavation with development schedules. This strategy does not afford the archaeological site long-term protection; its intent is to ensure short-term protection while allowing development to proceed on the rest of the property.

Requirements

1. Temporary protection and avoidance may be recommended when the intent is to conduct full excavation, but the archaeological site will not be impacted in the short term.
2. The proponent must provide a written temporary protection and avoidance strategy, approved by the approval authority, and schedule for completing excavations for the Ministry's records.

Legal, Planning and Administrative Tools for Long-term Protection

Regardless of the avoidance option chosen, long-term protection measures must be part of an avoidance plan. Most tools described in the *Ontario Heritage Tool Kit* are effective for the long-term protection of archaeological resources. The tools used most commonly are zoning bylaws, conditions on title, easements, and transfer of ownership.

Designation

Archaeological sites with cultural heritage value or interest may be protected by provincial designation under Part VI of the Ontario Heritage Act.

Zoning bylaw

The most common mechanism to protect archaeological sites in land use development is through the Planning Act zoning bylaw provisions. Part V of the act allows a municipal council to pass a zoning bylaw *"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"*.

Condition on title

An approval authority may place a number of types of planning and development restrictive conditions on title to ensure long-term protection, including:

- inhibiting order on title
- restrictive setbacks or protected areas
- holding provision
- condition on the subdivider's agreement for residential development.

These conditions should set out how the archaeological site should be addressed if the restrictive condition is lifted in the future. The condition should define the steps to be taken to lift the condition, such as ensuring that the archaeological site is further protected or is excavated by a licensed archaeologist.

Easement

A heritage easement is a voluntary legal agreement registered on title, setting out requirements for maintaining a property or specific heritage features of a property.

Transfer of Ownership

The proponent may transfer ownership of property containing an archaeological site to a municipality or other public land-holding body (e.g. conservation authority, provincial agency) for the purpose of long-term protection. The recipient must be aware of the stewardship obligations for the archaeological site and have a plan to address concerns in the case of any future development.

Related Units:

- *Standards and Guidelines for Archaeological Fieldwork: Stage 4: Excavation*

- *Standards and Guidelines for Archaeological Fieldwork: Stage 4: Construction Monitoring*
- *Project Reports and Maps: Stage 2*
- *Project Reports and Maps: Stage 3*
- *Project Reports and Maps: Stage 4: Protection and Avoidance, Construction Monitoring*
- *Ontario Heritage Tool Kit*