

1.0 INTRODUCTION

The role of the municipality in the conservation of archaeological resources is crucial. Planning and land use control are predominantly municipal responsibilities and the impact of municipal land use decisions on archaeological resources is significant, especially since municipally-approved developments constitute the majority of land disturbing activities in the Province. The primary means by which these resources may be protected is through the planning application process.

This study constitutes a GIS-based archaeological site inventory and summary potential model of sensitive Aboriginal sites to be used for general planning purposes by the City of Vaughan's Policy Planning and Urban Design and Recreation and Culture Departments and to design new policies for the City's Official Plan.

A watershed approach is adopted since the waterways of the City formed the backbone of early regional travel and communication systems and because interaction between Aboriginal communities and territorial definition was to a certain degree structured by these drainages throughout much of the pre-contact and early post-contact period. This understanding has further led to a major emphasis in archaeological research projects since the early 1980s towards focusing on individual drainages in order to reconstruct the movement of communities through space and time and to investigate the full range of site types utilized by these communities. Detailed investigations at the local level are seen to provide the most useful data through which to achieve a greater understanding of the development and functioning of past societies (cf. Tuck 1971; Niemzycki 1984).

The study begins in this section with a review of key concepts and definitions regarding archaeological resources and cultural heritage. Section 2 presents a general review of the environmental setting of the study area with a focus on drainage while Section 3 provides a summary of the character and extent of pre-contact and early contact period Aboriginal occupation within the City of Vaughan. The temporal span of this review (Table 1) stretches from the first occupation of the region circa 11,000 years ago, during the Paleo-Indian period, through to the abandonment of the area by Five Nations Iroquois in the late 1680s and their replacement by the Mississauga people, having arrived from the north shore of Lake Huron. An archaeological site inventory was also prepared that is derived from both published and unpublished material generated through public (i.e., museum, university) and private (i.e., CRM) archaeological investigations, but is mainly based on the Ministry of Tourism and Culture maintained archaeological site database. These data were then reviewed to classify sites by type and temporal/cultural association as well as to evaluate them for accuracy of information (Appendix B). They were also placed on the Municipality's GIS base mapping.

Using the GIS base mapping, Section 4 presents a series of screening layers that were prepared that use the generic proximity to water criteria outlined by the Ministry of Culture in their 1997 primer entitled *Archaeology, Land Use Planning and Development in Ontario* as well as some basic soil drainage characteristics. The constraint mapping is then refined to include the definition of zones of archaeological sensitivity as buffers around all Late Woodland sites identified in the site inventory, as these are the most sensitive archaeological resources from a planning and management perspective, particularly with respect to First Nations burial concerns. These sensitivity zones are based on a very coarse model for predicting the location of ossuaries.

Section 5 reviews current legislation and strategies for archaeological planning and conservation while Section 6 provides information on engaging Aboriginal communities with respect to archaeological resources. The study recommendations for implementation are found in Section 7 as well as



recommendations for avoiding impacts to sensitive archaeological sites in the conduct of planning for any future development in the City. Appendix A contains draft new policies for the Official Plan.

Table 1: Southern Ontario Pre-contact Culture-History

Date	Period	Description
A.D. 1600- A.D. 1690	Post-Contact Period	- population displacements, movements (Huron, Neutral, Petun, Odawa, Ojibwa, Six Nations Iroquois)
A.D. 1600 - A.D. 1400	Late Iroquoian (Late Woodland)	- complex agricultural society - villages, hamlets, camps - politically allied regional populations
A.D. 1400 - A.D. 1300	Middle Iroquoian (Late Woodland)	- agricultural dependency - villages, hamlets, camps - development of socio-political complexity
A.D. 1300 - A.D. 900	Early Iroquoian (Late Woodland)	- limited agriculture and foraging - villages, hamlets, camps - socio-political system strongly kinship based
A.D. 900 - A.D. 800	Transitional Woodland	- incipient agriculture in some regions - longer term settlement occupation and reuse
A.D. 800 - 400 B.C.	Middle Woodland	- first appearance of maize in the archaeological record - hunter-gatherers, spring/summer congregation and fall/winter dispersal - large and small camps - band level society with kin-based political system - some elaborate mortuary ceremonialism
400 B.C. – 1,000 B.C.	Early Woodland	- hunter-gatherers, spring/ summer congregation and fall/winter dispersal - large and small camps - band level society with first evidence of community identity - mortuary ceremonialism - extensive trade networks for exotic raw materials
1,000 B.C. - 7,000 B.C.	Archaic	- hunter-gatherers - small camps - band level society - mortuary ceremonialism - extensive trade networks for exotic raw materials
7,000 B.C. - 9,000 B.C.	Paleo-Indian	- first human occupation of Ontario - hunters of caribou and now-extinct Pleistocene mammals - small camps - band level society

1.1 Archaeological Resources as Cultural Heritage: Definitions

1.1.1 Conservation, Change and Planning: Some Key Concepts

The Province’s natural resources, water, agricultural lands, mineral resources, and cultural heritage and archaeological resources provide important environmental, economic, and social benefits. The wise use and management of these resources over the long term is a key provincial interest. The Province must ensure that its resources are managed in a sustainable way to protect essential ecological processes and public health and safety, minimize environmental and social impacts, and meet its long-term needs (Vision for Ontario’s Land Use Planning System, Provincial Policy Statement, Ministry of Municipal Affairs and Housing 2005, pp. 2-3).



In Ontario, cultural heritage conservation is accepted as a legitimate objective of planning activity, as it is in many other provinces and countries. Conservation planning provides an important mechanism for ensuring that future development (e.g., residential, industrial and infrastructure construction) respects the cultural heritage of the City.

Conservation planning and management is generally concerned with ensuring that valued cultural heritage resources are conserved and protected, in a sound and prudent manner, in the continuing and unavoidable process of change in the environment. A key issue is that the role of the custodian and steward of these resources generally falls to the private property owner. It is neither possible nor desirable that all resources be brought into public ownership. Therefore, conservation management is undertaken by a variety of actors, and it is necessary, through legislation and education, to bring all of these actors together in pursuit of a common goal. In many instances, it is traditional planning mechanisms that now seek to ensure that cultural heritage resources are conserved and/or maintained within the process of change.

In the process of change, cultural heritage resources may be affected in several ways. Change may be some action that is purposefully induced in the environment, such as development activities (e.g., road building, residential construction). This may result in both adverse and beneficial impacts, depending on the degree to which the change is sensitively managed. Change may also be a gradual and natural process of aging and degeneration, independent of human action, which affects artifacts, building materials, human memories or landscapes. Thus cultural resource management must ensure that change, when it does occur, is controlled. Its negative impacts upon cultural heritage resources must be either averted or minimized, through either ensuring that change has no adverse impacts whatsoever, or that intervention in the process will result in the promotion of beneficial effects.

In the protection of archaeological sites from land use disturbances or infrastructure facilities, the major characteristics of both archaeological sites and “planning” have a bearing on success. Archaeological resources have many distinct attributes that make their protection a challenging task. Not only are they fragile and non-renewable, but from a planning perspective one of their most important characteristics is that they are frequently located on private property. Thus, any policy must attempt to satisfy the dual and sometimes conflicting objectives of respecting certain private property rights while at the same time, protecting a resource valued by society. “Planning” is generally undertaken in an effort to seek a common or public good that market forces and private interests do not seek. Within the context of planning and development approval, archaeological sites are similar to ecological features in that they may not have a tangible market value. Moreover, traditional benefit-cost valuation techniques are unable to price the resource accurately in market terms, since there is no legitimate market for archaeological artifacts. Consequently, individuals responsible for the disruption of archaeological sites may not comprehend the value of preservation to society, a factor which has an obvious impact on protection policies.

On the other hand, the nature of the decision-making process constitutes one of the major and unique characteristics of planning in Ontario. Indeed, properly documented heritage criteria are often considered in the determination of the form, spatial extent and character of land disturbances. Also, the involvement of public and interest groups is encouraged or mandatory, such that decisions are sensitive to community concerns and are discussed openly. Moreover, the review and approvals process permits administrative hearings on matters at issue, with an independent decision. Thus, there is the opportunity to protect or conserve heritage features by selecting least damaging alternatives, through participation in planning decisions and in the review and approvals process.



1.1.2 Defining Cultural Heritage

The utility of this study as a guide that will assist to incorporate archaeological resources within the overall planning and development process, fundamentally rests upon a clear understanding of the physical nature of cultural heritage resources in general, the variety of forms they may assume, and their overall significance and value to society.

In common usage, the word heritage tends to be vaguely equated with “things of the past.” While it may be arguable that such an interpretation of the term is true, it is so only in the very narrowest sense. An interest in heritage does indeed indicate an awareness of, and concern for, “things of the past,” yet at the same time it recognizes that these “relics” are worthy of such interest primarily because they provide insights into the processes that have helped to shape the contemporary world in which we live, and that will continue to exert an influence into the future. Examination of our heritage, therefore, not only allows us to learn about our origins and our history, but it also provides a means of understanding who we are now, and a means of glimpsing who we may become.

In recognition of the essentially timeless quality of these “things of the past,” Ontario’s heritage has been defined as:

all that our society values and that survives as the living context — both natural and human — from which we derive sustenance, coherence and meaning in our individual and collective lives (Ontario Heritage Policy Review [OHPR] 1990:18-19).

Such an all-encompassing definition has the additional advantage of recognizing that our heritage consists of both natural and cultural elements. As human beings, we do not exist in isolation from our natural environment. On the contrary, there has always been a complex interrelationship between people and their environment and each has shaped the other, although the nature and direction of these mutual influences has never been constant. This definition further recognizes that heritage not only includes that which is tangible, but also that which is intangible.

All of those elements that make up this heritage are increasingly being viewed in the same manner as are “natural resources,” in that they are scarce, fragile, and non-renewable. These cultural heritage resources, therefore, must be managed in a prudent manner if they are to be conserved for the sustenance, coherence and meaning of future generations, even if their interpretations of the significance and meaning of these resources in contributing to society may be different from our own.

The development of the means by which to manage these cultural resources depends, in turn, on the recognition that on a practical level it is necessary to categorize them by type, yet at the same time these basic types also form a continuum. Both the distinctiveness of the individual categories of cultural resources and the overlap between these categories has been recognized by the Ontario Heritage Policy Review. This work (OHPR 1990:23) defined three broad classes of cultural resources:

IMMOVABLE HERITAGE – land or land-based resources, such as buildings or natural areas that are “fixed” in specific locations; for example:

structures – buildings, ruins, and engineering works, such as bridges;

sites – archaeological sites, battlegrounds, quarries, earth science sites such as rock formations, and life science sites such as rare species habitats;



areas – streetscapes, neighbourhoods, gardens, lakes, rivers and other natural, scenic, and cultural landscapes;

MOVABLE HERITAGE – resources, such as artifacts and documents, that are easily “detachable” and can be transported from place to place; for example:

objects – artifacts such as artworks, utensils and adornments, and earth and life science specimens, such as fossils and crystals;

documents – including newspapers, letters, films, and recordings;

INTANGIBLE HERITAGE – such as traditional skills and beliefs; for example:

values – attitudes, beliefs and tastes;

behaviours – including skills, games, dances and ceremonies;

speech – stories and narratives, songs, sayings, and names.

Each of these categories, however, often overlaps with others. Archaeological sites, for example, are “immovable” resources, yet in most cases these sites are formed by concentrations of man-made or man-modified objects that are “movable” resources. Similarly, “movable” or “immovable” resources, such as buildings or documents often derive their significance through their intangible cultural associations, as they may reflect or typify specific skills or beliefs.

Despite the fact that all cultural heritage resources should be viewed as components of a single continuum, there remains a need to distinguish between the three basic categories outlined above. This is because the approaches to the examination of resources within the different categories must be specifically tailored to their characteristics and needs. Not only does the study of the different types of resources require different and often highly specialized techniques, but the threats that these resources face are often different as well. Thus planning decisions related to the conservation of different types of resources are informed by different sets of considerations. Likewise, the means by which such planning decisions are implemented will also vary.

1.1.3 The Threats to Archaeological Resources

Protecting archaeological sites has become especially important in southern Ontario, where landscape change has been occurring at an ever increasing rate since 1950, resulting in substantial losses to the non-renewable archaeological record.

The scale of the threats facing the archaeological record of southern Ontario were considered in a study in which rates of demographic and agricultural change were examined over the last century, and estimates generated of the number of archaeological sites that have been destroyed (Coleman and Williamson 1994). While the period of initial disturbance to sites was from 1826 to 1921, when large tracts of land were deforested and cultivated for the first time, that disturbance typically resulted in only partial destruction of archaeological data as most subsurface deposits remained intact. However, extraordinary population growth in the post-World War I period, resulted in a more disturbing trend as large amounts of cultivated land were consumed by urban growth.



The nature and potential magnitude of the threat that continued landscape change posed to a finite and non-renewable archaeological feature base between 1951 and 1991 is staggering; it is possible that more than 10,000 sites were destroyed during that period of which 25% represented significant archaeological features that merited some degree of archaeological investigation, since they could have contributed meaningfully to our understanding of the past (Coleman and Williamson 1994: Tables 2 and 3). It can be assumed that the reduction of the archaeological feature base of the City of Vaughan also took place at a serious rate.

Archaeological sites also face a less direct, but equally serious form of threat, in which man-made changes to the landscape inadvertently alter or intensify destructive natural processes in adjoining regions. Increased run-off of surface water in the wake of forest clearance, for example, or hydrological fluctuations associated with industrial and transportation development may result in intensified rates of erosion on certain sites due to processes such as inundation. The amount of land (and hence the potential number of archaeological sites) which has been subjected to these destructive forces is impossible to quantify, but is likely to be considerable.

While there has recently been a marked reduction in the rate of archaeological site destruction throughout much of the province, since certain municipalities adopted progressive planning policies concerning archaeological site conservation, the potential for the loss of archaeological resources in the future remains great, due to continuing growth and development.

2.0 ENVIRONMENTAL SETTING

The settlement history of the City of Vaughan took place within a variety of physiographic zones (Chapman and Putnam 1984). The southernmost part of the City is occupied by the bevelled till plains of the Peel Plain physiographic region (Chapman and Putnam 1984:174-176). The surface of the Peel Plain is characterized by level to gently rolling topography, with a consistent, gradual slope toward Lake Ontario. The Plain is made up of deep deposits of dense, limestone and shale imbued till, often covered by a shallow layer of clay sediment. Many of the rivers and streams have cut deep valleys across this well-drained plain.

The northeast corner of the City is occupied by a section of the Oak Ridges Moraine, a massive, irregular feature which in places covers the Ordovician limestones and shales to a depth of over 200 metres. Although the Oak Ridges Moraine forms the drainage divide and is the source for many streams flowing both north and south, the hummocky topography and porous sediments have resulted in very few streams in the centre of the upland. Instead, water percolates down through the sands until reaching an aquitard which directs flow laterally. Springs issuing from the flanks of the moraine feed streams that have dissected the peripheral slopes.

The physiographic zones south of the Oak Ridges Moraine, as well as the moraine itself, are oriented roughly east-west. Sloping southward from the heights of the Oak Ridges Moraine into the Lake Ontario basin is a broad relatively featureless till plain, named the South Slope. The underlying bedrock of the South Slope is Ordovician in age, comprising grey and black shale with some interbedded limestone (Freeman 1979). The region east of Maple is smoothed and faintly drumlinized, and features numerous streams and intermittent drainage gullies running down slope (southward) toward Lake Ontario. Many of the streams have cut steep-sided valleys in the till. West of Maple, the region is characterized by a ground moraine of limited relief (Chapman and Putnam 1984:173).

