

# *A Master Plan of Archaeological Resources for the City of Toronto*



*Interim Report*

*August 2004*

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## A MASTER PLAN OF ARCHAEOLOGICAL RESOURCES FOR THE CITY OF TORONTO

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Prepared by  
**Archaeological Services Inc.**  
in association with:  
Cuesta Systems Inc.  
and  
Commonwealth Historic Resources Management Limited  
Golder Associates  
Historica Research Limited

Submitted to  
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## ACKNOWLEDGMENTS

Many individuals have contributed to the collection and compilation of data for this study. It is only through their cooperation and generosity that this work was made possible. One public meeting was held during this phase of the study, hosted by the Toronto Chapter of the Ontario Archaeological Society. Our thanks go to Ms. Penny Young for accommodating our request to meet with the Toronto archaeological community. Ms. Dena Doroszenko, Mr. David Spittal, Mr. Steve Otto, Ms. Penny Young, and Mr. Joe Muller participated in another meeting, with the entire consulting team, to discuss planning for the identification of potential for the survival of archaeological deposits in urban contexts. Mr. Robert von Bitter of the Ministry of Culture assisted in the compilation of data concerning registered sites in the study area and Mr. Kevin Tierney, Mapping Services, provided the base mapping for the study and detailed ortho-imagery to aid in the modeling and identification of archaeological features. We also acknowledge Mr. Bob Burgar of the Toronto Region Conservation Authority for his interest, and for sharing his data and approach to archaeological potential modeling. Likewise, Mr. Malcolm Horne of the Ministry of Culture provided many useful insights in archaeological master planning.

Finally, we are grateful for the guidance and support provided by Ms. Susan Hughes, of Heritage Preservation Services, Culture Division, Economic Development, Culture and Tourism Department and the Archaeology Planning and Policy Committee.

<i>Front Cover Illustrations:</i>	Seventeenth century A.D. Seneca bone comb from Baby Point. <i>View of the City of Toronto</i> (1855), Mary Hastings Meyer (active 1852-1885), oil on canvas, 94.0x160.0 cm, City of Toronto Art Collection, Culture.
<i>Rear Cover Illustration:</i>	Detail of the shell design on the ceramic turtle effigy smoking pipe found in the circa A.D. 1280-1320 Iroquoian Moatfield Ossuary.

## EXECUTIVE SUMMARY

The City of Toronto has a cultural history which begins approximately 11,000 years ago and continues to the present. Due to the richness of its natural environment, the region has attracted human habitation from the time of the first peopling of Ontario. The archaeological sites that are the physical remains of this lengthy settlement history represent a fragile and non-renewable cultural legacy.

Protecting these sites has become especially important in southern Ontario, where landscape change has been occurring at an ever increasing rate since 1950, resulting in extensive losses to the non-renewable archaeological record. The most effective means of protecting those sites that remain is through adoption of planning and management guidelines that are informed by both the known distribution and character of sites and by assessment of the potential location of additional sites that have yet to be discovered.

In recognition of these facts, and the provincially-mandated role of municipalities in the archaeological conservation process, the City of Toronto retained *Archaeological Services Inc. (ASI)*, in association with *Cuesta Systems Inc.* and *Commonwealth Historic Resources Management Limited*, *Golder Associates*, and *Historica Research Limited*, to prepare a planning study of archaeological resources within the City.

The Archaeological Master Plan of the City of Toronto has four major goals:

- 1) the compilation of detailed, reliable inventories of registered and unregistered archaeological sites within the City;
- 2 the preparation of a thematic overview of the City's settlement history as it relates to the potential occurrence of additional pre- and post-contact archaeological resources;
- 3 the development of an archaeological site potential model, based on known site locations, past and present land uses, environmental and cultural-historical data, and assessment of the likelihood for survival of archaeological resources in various urban contexts and;
- 4) the provision of recommendations concerning the preparation of archaeological resource conservation and management guidelines for the City.

This report presents a summary of the research undertaken with respect to global trends in archaeological resource conservation planning, a brief thematic history of the 11,000 years of settlement in the City, the existing inventory of archaeological sites in the City, and the GIS-based model for predicting the locations of unknown pre-contact archaeological sites within the City as well as a sample of a composite pre- and post-contact potential layer for a sub-section of the first application area—the Humber River corridor.



**TABLE OF CONTENTS**

PROJECT PERSONNEL .....	ii
ACKNOWLEDGMENTS .....	ii
EXECUTIVE SUMMARY .....	iii
FOREWORD .....	1
INTRODUCTION .....	3
Study Background And Objectives .....	3
Archaeological Resources As Cultural Heritage: Definitions ..	4
PLANNING FOR ARCHAEOLOGICAL RESOURCE	
CONSERVATION: A SAMPLE OF GLOBAL PERSPECTIVES ..	5
Introduction .....	5
Canada .....	6
United States .....	8
China .....	10
Conservation Plan for Historically and Culturally	
Important City of Beijing .....	10
Conservation Plan for Historically and Culturally	
Important City of Changsha .....	10
Hong Kong .....	10
England .....	11
Summary .....	12
A THEMATIC HISTORY OF THE CITY OF TORONTO:	
AN OVERVIEW	
The Pre-contact Period .....	12
Paleo-Indian Period (9,000 B.C.-7,000 B.C.) .....	14
Archaic Period (7,000 B.C.-1,000 B.C.) .....	14

Woodland Period (1,000 B.C.-A.D. 1650) .....	16
The Contact Period .....	18
The Post-Contact Period .....	19

THE CITY OF TORONTO POTENTIAL MODEL .....	24
The Principles of Archaeological Potential Modeling .....	24
Creating the Base Map for the City of Toronto's	
Potential Model .....	25
The Pre-contact Layer .....	26
Sites .....	26
Water .....	29
Soils .....	30
Slope .....	30
The Historic Layer .....	31
The Composite Archaeological Potential Layer .....	32
Next Steps .....	37
Modeling for the Survival of Archaeological Deposits ..	37
Mapping the Survival of Archaeological Deposits .....	38
Broadening the Model .....	40

**LIST OF TABLES**

Table 1: Southern Ontario Pre-contact Culture-History .....	13
Table 2: Map Sources for the Water Layer .....	26
Table 3: Registered Archaeological Sites within the City of	
Toronto .....	28
Table 4: Registered Archaeological Sites within the Buffer ..	28
Table 5: Summary of Proposed Site Potential Modeling	
Criteria .....	32

## Foreword

All land is sacred.

Held in the land are those things that have been given to us in Creation and the remains of all that has come before us. This endowment deserves our respect. As we go about our lives on the *Body of Our Mother*, we leave our own footprints, not unlike my Ancestors who, following the last recession of the ice, traveled into this land, guided by the cycles of nature. The stories of their lives, traced and recorded through the protocols of modern, scientific archaeology, are coming up once again to teach us to remember and to respect. Such is the foundation of any deep and evolving culture.

*Toron:to* is named in the language of my Ancestors, and as a place, has become a compassionate home and refuge for peoples from the four directions. This is where we identify and care for the remains of all our Ancestors. The Archaeological Master Plan identifies the places that need to be respected, accommodated, and even commemorated. It has been said: “we will never understand the present, until we understand the past.” This has never been truer than amidst the greed and amnesia of modern life.

The spirits of the Ancestors are present among us today, unconsciously informing our daily actions. We need to begin addressing them once again, offering respect for their good ways, which can be our ways, and asking forgiveness for having dishonoured their memory. Many newcomers have come here in retreat from their original homelands, and in the trauma of leaving home, have brought an expediency to their settling in this new place. In order to heal our relationships with one another, with the Mother Earth, and indeed with Creation itself, we must begin in earnest the work of remembering. The Archaeological Master Plan is the framework and guide for such an endeavour. So I commend this innovative effort to restore our city to its proper context in time in order to create the basis for a rich and integrated future together.

Onen [“that is all, I am finished with what I had to say in my duty”].

William Woodworth *Raweno:kwás*



## INTRODUCTION

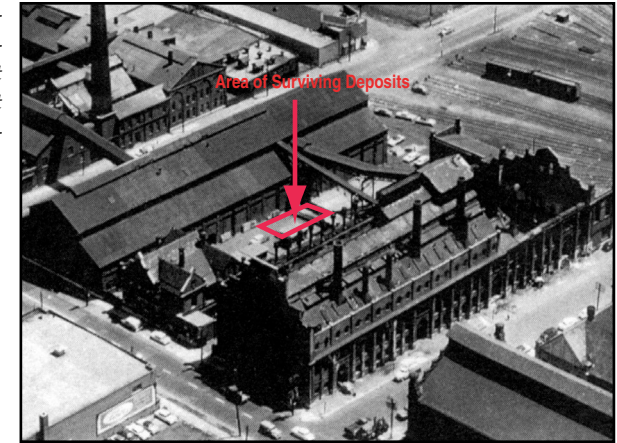
### Study Background and Objectives

Toronto is one of the largest, most culturally diverse municipalities in North America. There is also substantial geographical diversity in the City, with extensive, intricate ravine systems, some of which are buried, an evolving shoreline, and large open, relatively undisturbed spaces. Large expanses of recurrently developed land, however, pose unique challenges for modeling the survival of archaeological features within the City. Yet, the recent discovery of archaeological remains of Upper Canada's first parliament buildings in the commercial and industrial core of the City attests to the endurance of such deposits.

The primary objective of this study is to prepare an innovative management tool that will assist the City in making informed planning decisions regarding archaeological resource conservation early in the development review process, and in planning capital projects on City-owned land.

The research that has been undertaken to date has included a review of how these issues have been addressed in other select North American, European and Asian jurisdictions, including how the issue of requirements for assessment in developed urban contexts is managed. Ongoing research will result in the identification of the types of past land disturbances in the City and the development of an approach for predicting the survival of archaeological resources in variably disturbed contexts. This will be, in essence, a strategy for the identification and mapping of areas of varying degrees of remaining integrity within the City.

*Despite large scale redevelopment of the property once occupied by the first Parliament Buildings of Upper Canada, at least one area remained relatively undisturbed.*



*Complex deposits of charcoal, limestone mortar, and organic soils overlying a section of a stone slab floor and sub-floor drain associated with the Parliament Buildings.*



*The limestone footings and traces of the burned floor joists of the Parliament Buildings uncovered below brick rubble layers.*



We have also compiled a reliable inventory of all known pre-contact archaeological sites within the City, of all lands that have been subject to archaeological assessment in the past, and an evaluation of the potential for additional, as yet, undocumented pre-contact archaeological sites. This potential has been addressed through a comprehensive modeling exercise that employed data for additional known sites within one or two kilometres of the City.

A historic thematic overview of the City has also been prepared that will allow for the identification of known locations of historically significant events, places or activities, and their archaeological potential. The layering inherent in such an understanding has been applied to a small sector of the first demonstration area—the Humber River corridor.

Appropriate management strategies for the conservation, integration and enhancement of archaeological features within the City will be developed using these data. These strategies will include policies and procedures for the identification and conservation of archaeological sites that may be adversely affected by development. Opportunities for the interpretation of these fragile and non-renewable resources will be identified as well.

### **Archaeological Resources As Cultural Heritage: Definitions**

*The Province's resources—its agricultural land base, mineral resources, natural heritage resources, water supply and cultural heritage resources—provide economic, environmental and social benefits. The wise use and protection of these resources over the long term is a key*

*provincial interest* (Preamble, Provincial Policy Statement, Ministry of Municipal Affairs and Housing 1996).

In Ontario, cultural heritage conservation is accepted as a legitimate objective of land use 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.

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 have never been constant. Understanding the links between the natural and cultural heritage of the City, in particular the importance of the Humber, Don and Rouge corridors, is the single most significant objective in our effort to identify and conserve the archaeological heritage of the City.

The Ontario Planning Act provides a clear definition of archaeological features. They are:

*the remains of any building, structure, activity, place or cultural feature, which because of the passage of time is on or below the surface of the land or water, and which has been identified and evaluated and determined to be significant to the understanding of the history of a people or a place.*

Individual archaeological sites, which collectively form the archaeological resource-base, are distributed in a variety of locations across the landscape, being places that are associated with past human activities, endeavours, or events. It is for this reason that one of the tasks of this study is to prepare a thematic history of the development of the City so as to understand the relationships between places and historical events. The physical forms that these archaeological sites may take include surface scatters of artifacts; sub-surface strata that are of human origin or incorporate cultural deposits; remains of structural features, or a combination of all of these.

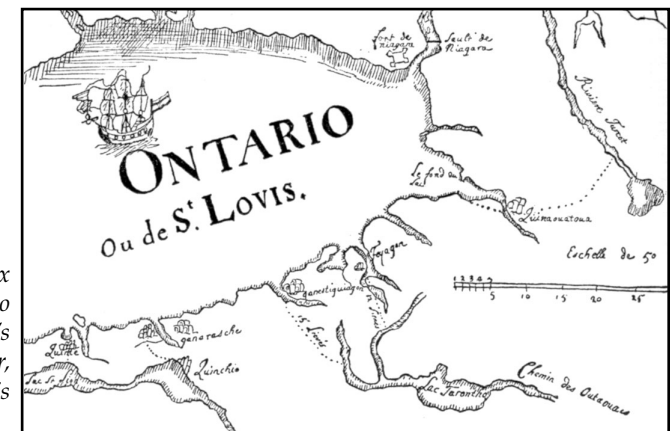
## PLANNING FOR ARCHAEOLOGICAL RESOURCE CONSERVATION: A SAMPLE OF GLOBAL PERSPECTIVES

### Introduction

There is no North American city of a size equivalent to Toronto with a comprehensive plan for the conservation of archaeological features. Comparable-sized cities would include Montreal and Vancouver in Canada and Chicago,



*View of the mouth of the Humber River in the early twentieth century.*



*In 1688, Pierre Raffeix produced the first map to depict all three of Toronto's largest rivers: the Humber, Don and Rouge. North is to the bottom of the map.*

Boston, New York, Philadelphia, Washington, Miami, Los Angeles, San Francisco, and Seattle in the United States. It should also be noted, however, that Toronto is growing faster than any other North American city both in population and area.

With respect to the current Ontario planning context, provincial legislation, in particular the Planning Act with its Provincial Policy Statement, requires a municipality to have regard for matters of provincial interest, including conservation of features of archaeological interest. The Environmental Assessment Act requires the preparation of an environmental assessment (EA) document, which normally also addresses heritage issues. The Municipal Class EA process requires that publicly funded municipal projects be preceded by assessments of heritage impacts.

Processes for the protection of heritage features are outlined in the Ontario Heritage Act. It allows for the protection of property of cultural heritage value or interest, including buildings and structures and associated archaeological remains under Parts IV and V and for archaeological sites alone under Part IV. The Ontario Heritage Foundation or a municipality is able, under the provision of Part III, to hold easements on significant properties.

Decisions to call for archaeological assessments in advance of development are currently made by Heritage Preservation Services staff and planners on the basis of desktop reviews employing a set of generic criteria provided by the Province. During those reviews, staff might conclude that archaeological features will not have survived in variably disturbed contexts although they sometimes leave such decisions to cultural resource consultants.

The current process then, is operating with only limited reference to evaluation of the significance of potential archaeological features in the context of the historical development of the City. There is little understanding of the likelihood of the survival of sites in various previously developed properties. Therefore a need exists to identify a set of criteria, specially designed for the City, which can be used to identify archaeological potential across the city in a consistent manner. These criteria would trigger archaeological studies in various development contexts. Building on the process designed for the Central Waterfront, this project will design a comprehensive approach to archaeological resource conservation in the City.

It would appear, however, that even with the limitations of the current approach, the City of Toronto is ahead of most major jurisdictions in North America and some parts of Europe and Asia, as the following selective review suggests. It should be noted that this research is ongoing. A detailed account of this research will constitute an appendix attached to the final report.

### **Canada**

There are no comprehensive archaeological heritage conservation processes in other major urban centres in Canada.

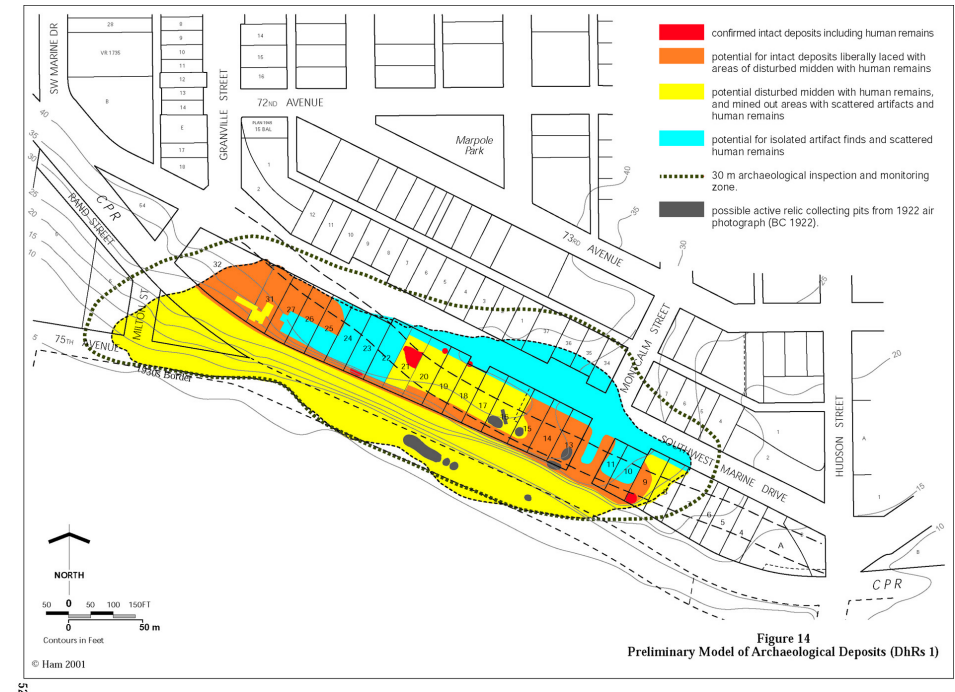
In Vancouver, planning applications are checked by the planning department against a 1985 inventory of known features. If a conflict is found, both the applicant and the Province are notified, although no action is initiated on the property unless it is required by the Province. The significance of features is based in large part on the British

Columbia Heritage Conservation Act (1996), which protects features older than 1846.

Recently, the province was forced to contact all site landowners to inform them of the site(s) on their lands. This came about as a result of threatened litigation concerning the Marpole site, a National Historic property, designated in 1935. While the site had been investigated for over 100 years by archaeologists, no detailed archaeological overview, based on past research and historic documentation, had been prepared. One of the owners argued that the Province should have alerted landowners of the development constraints posed by the site. A model of archaeological deposits was formulated for the site and specific pre-development requirements defined. In this case, and in other jurisdictions in Ontario, for example the Peace Bridge site in Fort Erie, it has been necessary to undertake detailed archaeological study in order to understand how to conserve an archaeologically sensitive area appropriately. Such areas may well exist in the City of Toronto.

In Quebec City, an archaeological review process is triggered by an application for land use change within provincially designated heritage districts. The relevant legislation is the Cultural Properties Act whereby archaeological investigations are required by the City archaeologist based on a desk-top review. All consequent archaeological investigations, however, are paid for by the Province.

The requirement for archaeological assessment in Montreal is also determined on a project by project basis by "Service du Développement Économique et Urbain" (Economic and Urban Development Services) in association with Park Services, Public Works, Cultural Services, and Building



*The Marpole National Historical Site has been the subject of archaeological investigation for over 100 years. Competing interests between the need to conserve the site and the rights of those landowners who wished to develop their properties within the site area led to the development of a detailed overview of the distribution of known and potential archaeological deposits.*



*The in situ remains of seventeenth century buildings in the "archaeological crypt" beneath Pointe-à-Callière, the Montréal Museum of Archaeology and History.*



Services, the electrical services commission of Montreal, Parks Canada, the Old Port Society of Montreal, and various utility companies. Studies of archaeological potential, inventories, excavations, analysis, and distributions of artifacts are all undertaken, keeping in mind the archaeological needs and priorities, as well as the demands and constraints that come with urban development.

In 1993, the City of Montreal adopted the practice of allowing archaeological interventions prior to any large-scale subterranean disturbances that precede construction. This allows for more adequate protection of archaeological resources, and gives more time for more detailed and comprehensive excavations.

With respect to specific areas of the City, there is an agreement (signed and renewed since 1979) with the Ministry of Culture and Communications of Quebec about the importance of Old Montreal and its heritage.

Ontario has pioneered aggressive provincial planning and environmental assessment legislation resulting in a well established consulting community, which in the context of provincial technical review, undertakes professional field research and produces reliable archaeological resource management reports. Moreover, Ontario has been a leader in the design and implementation of archaeological master plans in small and medium-sized jurisdictions including Windsor (draft), London, Brantford, Fort Erie, Niagara-on-the-Lake, Waterloo, Hamilton (in progress), Halton, East Gwillimbury, Richmond Hill, Vaughan, Markham (Phase 1 only), Scarborough (Phase 1 only), Ottawa-Carleton, Kingston, Muskoka, Walpole Island, and the Township of Howland in association with Sheguiandah and Sucker

Creek First Nations on Manitoulin Island. All of these planning studies are different in nature, as are their consequent archaeological conservation approaches.

Perhaps the most significant advantage offered by most of the Ontario municipalities is that decisions are often made by planners or other bureaucrats in consultation with archaeologists, advisory boards and/or based on a detailed archaeological study of the jurisdiction.

### **United States**

In the United States, the federal government exerts a strong influence insofar as it funds State Historical Offices and provides archaeological support for federally funded projects in cities. The federal government also sets professional standards. Indeed, the Federal process, based on Section 106 of the National Historic Preservation Act, is the most common mechanism for addressing archaeological concerns, because it involves detailed research on specific parcels of land and provides for funding eligibility.

There are no comprehensive archaeological heritage conservation studies for entire cities, although plans exist for special areas in such important historic places as Alexandria and Williamsburg. Many other cities have policies governing archaeological assessment in certain areas of their jurisdiction. In Seattle, for example, a planner-driven process, based almost entirely on proximity to existing water and former shorelines, is in place. The Department of Construction and Land Use requires a pre-development assessment, under the authority of the State Environmental Policy Act, if an application falls within 200 feet (61 metres)

of the meander line of the salt water shoreline although they recognize other areas of significant potential including confluences of freshwater and saltwater, river or creek terraces, low-bank saltwater access points, or special geological formations.

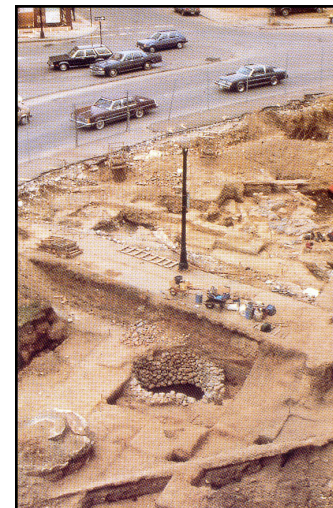
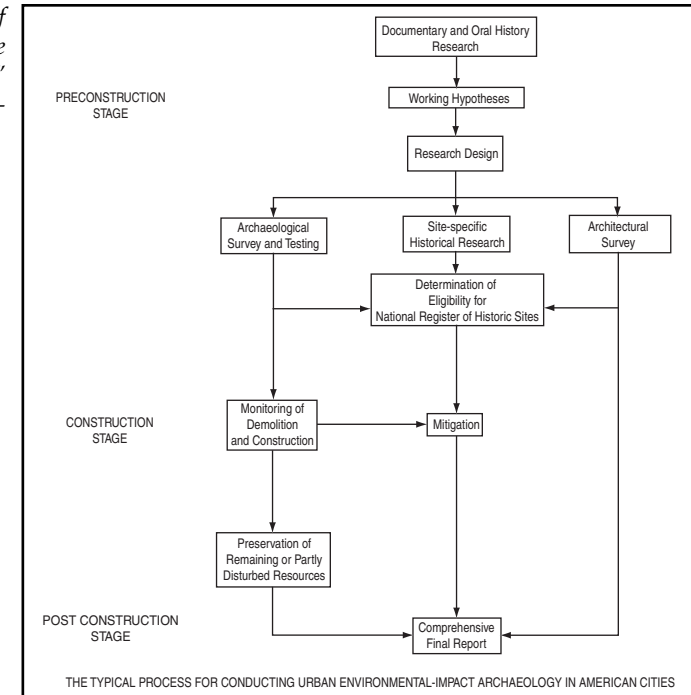
The most detailed process is that prescribed for the Historic District of Annapolis. In this case, built and archaeological heritage are co-managed using a GIS platform with over 70 attributes of information, including environmental and historic cultural information. Applications within the district are reviewed by the Office of Planning and Zoning, advised by the Historic Annapolis Foundation and the University of Maryland.

In Boston, an archaeological review process is triggered for an application for a federally enabled project (land, money, or permit). The Boston Landmarks Commission recommends an archaeological investigation after a desk-based assessment.

In cases where archaeologists make the decisions for assessments, they are often based on individual professional judgement. In New York, for example, archaeological assessment is not required in any historic district that has been previously developed to a depth exceeding ten feet. Otherwise, decisions about assessment are based on consultation between planners and city archaeologists.

On the other hand, decisions in most cities are made by planners or other bureaucrats according to pre-set criteria on federal projects only with limited input from archaeologists. Not only is this too generic and cursory to be fully effective, but cost concerns in some jurisdictions are compromising the process.

*The typical sequence of events required to achieve "Section 106 compliance" for federally-funded projects in the United States.*



*Excavations in Charlestown's City Square undertaken as part of Boston's Central Arterial Project, or the "Big Dig".*

## China

China, in recent years, has directed the demolition of entire medieval walled cities to accommodate new development. On the other hand, where foreign funding or oversight occurs, as in the case of the Three Gorges Dam, assessment and certain mitigation has occurred. Also, where the national interest is involved, detailed archaeological research might be conducted over large areas.

More commonly, only some general guidelines are provided to recognize the known and potential archaeological record during the urban planning process. There are few concrete policy mechanisms to enforce these guidelines, perhaps because centralized governments are often able to direct that certain things be done outside of what might be considered due process or diligence. The following are examples of such guidelines.

### *Conservation Plan for Historically and Culturally Important City of Beijing*

In Chapter 4 of this plan, entitled Conservation of Cultural Relics, it is stated that emphasis shall be placed on urban archaeological work, particularly the research, investigation and excavation of ancient city archaeological sites including those that were the capitals during the Liao, Jin and Yuan Dynasties.

### *Conservation Plan for Historically and Culturally Important City of Changsha*

Forty-five potential archaeological sites have been designated within the City of Changsha. In order to mediate the conflicts between development and conservation of archaeological

sites, every proposed development project located near an archaeological site is required to go through the United Assessment Procedure, which requires permission from the Department of Cultural Relics. Archaeological research and investigation shall be conducted before the commencement of construction; archaeological excavation shall be conducted if any cultural relics are discovered during the investigation process; and the construction of projects shall be continued only after the excavation and conservation works are completed.

## *Hong Kong*

While there is no comprehensive archaeological heritage conservation process in place, especially for identifying unknown sites, major projects, divided into statutory plans (government) and non-statutory plans (private sector) are subject to development control as part of environmental impact assessments. Non-statutory plans are required to express the planning intention to protect archaeological sites on their site plans.

Built and archaeological heritage as well as environmentally sensitive areas are all subject to similar processes. In the case of archaeological heritage, applications are reviewed by the Antiquities and Monuments Office (AMO), but the decision for assessment and/or mitigation activities is made by the Planning Department. The Planning Department controls non-conforming use within conservation zones on statutory plans and is able to issue and enforce stop work notices, when the archaeological sites are protected by AMO. Various planning exercises have been carried out for parts of the metropolitan area including the identification of land and marine-based archaeological features.

## England

London uses a complex, desk-based risk assessment process on a case by case basis to define the necessity for archaeological assessments. The process relies on environmental variables, present building features (e.g., nature of construction and foundation), the presence of earlier building features, and an analysis of the probable depth and volume of potential archaeological deposits. The probable volume of archaeological deposits is calculated on the basis of the difference between original ground level and likely modern truncation levels. A similar approach was used in determining the potential for the survival of archaeological deposits associated with the First Parliament site in Toronto.

Some detailed local studies are being undertaken. In the Lower Lea Valley and Thames, for example, the topography and environment of the late Pleistocene and Holocene periods have been reconstructed using geo-technical borehole data. These data are used, in turn, to generate archaeological deposit models.

The City of York is sited over a superbly preserved medieval city, which itself was built on the site of even earlier occupations. The three aims of archaeological policy in the modern city are to promote development, to conserve archaeological features and to manage archaeological features. Decisions are made by the city council in accordance with planning guidelines as outlined in the Town and Country Planning Act (1990).

Using existing documentation, the below-ground city was mapped so that the approximate location and nature of

*A perfectly preserved Roman wood floor found on the grounds of a mid-nineteenth to twentieth century brewery complex in the City of London.*



*Mid-tenth century Viking houses and workshops uncovered at Coppergate in the City of York.*



archaeological deposits could be predicted. The city was divided into sections based on archaeological information—high quality deposit zones (30%), medium quality deposit zones (20%) and insufficiently known (50%). Even when there is available information about deposits, the study recommends on-site evaluation of all proposed developments as part of the planning process.

In the York City Centre Area, no more than 5% of the volume of any archaeological deposit may be compromised by a development. Large-scale archaeological projects are only allowed if they can demonstrate appropriate funding levels and plans for publication of the final reports.

### **Summary**

It would appear that no city the size of Toronto has undertaken a potential model of its entire jurisdiction. Some centres in England, such as London and York, however, have prepared partial potential mapping leading to informed decision-making regarding the necessity for archaeological assessments in areas of development applications. The applications are, nevertheless, evaluated on a case by case basis as they are in places in the United States where zones of archaeological sensitivity within Historic Districts are also present.

In many jurisdictions, the cost of assessment is often seen as a limitation to the imposition of a comprehensive archaeological heritage conservation system, since many governments actually pay for the work. In Ontario, under provincial legislation, it is the development proponent's responsibility to pay the cost of project impact assessment and mitigation.

The preferred form of mitigation of impacts to archaeological remains is avoidance where possible. Knowing in advance where such remains are likely to be encountered provides a strategic advantage to proponents, planners and heritage managers.

## **A THEMATIC HISTORY OF THE CITY OF TORONTO: AN OVERVIEW**

### **The Pre-contact Period**

Before recorded history, the area that is now known as Toronto, was a junction point of land and water routes, with trails along the rivers extending northward from the shoreline linking the Lower and Upper Great Lakes. For over ten millennia, temporary encampments and semi-permanent villages of various sizes were situated along the river valleys and lake shore. The aboriginal occupants of these sites left no written record of their lives. Their legacy includes the oral histories and traditions passed on to their descendants and the traces of their settlements.

As there tends to be little widespread awareness of the depth of this pre-contact settlement history, or general knowledge of the societies that inhabited Ontario prior to the onset of Euro-Canadian settlement, a brief review of the pre-contact history of the study area, as it is understood in its broader regional context, is included below (see also Table 1). The terms used to describe the temporal periods were developed during the last century to recognize key shifts in environmental adaptation, subsistence strategies or technologies.

**Table 1: Southern Ontario Pre-contact Culture-History**

<b>Date</b>	<b>Period</b>	<b>Description</b>
A.D. 1650 - A.D. 1400	Late Iroquoian (Late Woodland)	<ul style="list-style-type: none"> <li>•complex agricultural society</li> <li>•villages, hamlets, camps</li> <li>•politically allied regional populations</li> </ul>
A.D. 1400 - A.D. 1300	Middle Iroquoian (Late Woodland)	<ul style="list-style-type: none"> <li>•major shift to agricultural dependency</li> <li>•villages, hamlets, camps</li> <li>•development of socio-political complexity</li> </ul>
A.D. 1300 - A.D. 900	Early Iroquoian (Late Woodland)	<ul style="list-style-type: none"> <li>•foraging with limited agriculture</li> <li>•villages, hamlets, camps</li> <li>•socio-political system strongly kinship based</li> </ul>
A.D. 900 - A.D. 600	Transitional Woodland	<ul style="list-style-type: none"> <li>•incipient agriculture in some regions</li> <li>•longer term settlement occupation and reuse</li> </ul>
A.D. 600 - 400 B.C.	Middle Woodland	<ul style="list-style-type: none"> <li>•hunter-gatherers, spring/summer congregation and fall/winter dispersal</li> <li>•large and small camps</li> <li>•band level society with kin-based political system</li> <li>•some elaborate mortuary ceremonialism</li> </ul>
400 B.C. - 1000 B.C.	Early Woodland	<ul style="list-style-type: none"> <li>•hunter-gatherers, spring/summer congregation and fall/winter dispersal</li> <li>•large and small camps</li> <li>•band level society with first evidence of community identity</li> <li>•mortuary ceremonialism</li> <li>•extensive trade networks for exotic raw materials</li> </ul>
1,000 B.C. - 7,000 B.C.	Archaic	<ul style="list-style-type: none"> <li>•hunter-gatherers</li> <li>•small camps</li> <li>•band level society</li> <li>•mortuary ceremonialism</li> <li>•extensive trade networks for exotic raw materials</li> </ul>
7,000 B.C. - 9,000 B.C.	Paleo-Indian	<ul style="list-style-type: none"> <li>•first human occupation of Ontario</li> <li>•hunters of caribou and now-extinct Pleistocene mammals</li> <li>•small camps</li> <li>•band level society</li> </ul>

***Paleo-Indian Period (9,000 B.C.-7,000 B.C.)***

It is thought that Paleo-Indian hunting bands arrived in southern Ontario sometime between approximately 11,000 and 10,500 years ago, soon after the area became habitable. During the previous millennia, glaciers had covered much of southern Ontario. As these glaciers began to retreat approximately 12,500 years ago, large meltwater lakes formed in their wake.

The landscape that subsequently emerged was one of relatively barren tundra interspersed with areas of open boreal forest. This environment supported large Pleistocene mammals such as mastodon, moose, elk and especially herds of caribou, the latter of which were a major focus of Paleo-Indian hunters. Evidence concerning the Paleo-Indian peoples is very limited since their populations were not large and since little of their sparse material culture has survived the millennia. Furthermore, in following the herds, Paleo-Indian groups traveled extremely long distances over the course of the year, and seldom stayed in any one place for a significant length of time. Virtually all that remains are the tools and by-products of their flaked stone industry, the hallmark being large distinctive spear points that have a prominent channel or groove on each face.

Paleo-Indian sites are frequently found adjacent to the shorelines of large post-glacial lakes, suggesting that their camping sites were located along the shores of lakes to intercept migrating caribou herds. The circa 12,500 B.P. Lake Iroquois strandline, which forms the bluff above Davenport Road, is one such relict shore, although it was likely located well inland by the time of the first occupation of Toronto. Dozens of 10,000-11,000 year old artifacts have been found along this ancient shoreline in the municipalities that border

Toronto. While residential backyards along this ridge are now the best locations to find evidence of the earliest occupants of Toronto, most of this landform was heavily developed in the twentieth century. The water levels in the Lake Ontario basin continued to fall in the early post-glacial period before rising again to modern levels. Unfortunately, some of the largest campsites were along its shoreline and adjacent to estuaries that drained into this early Lake Ontario. Many of these sites are now situated more than a kilometre into the lake.

***Archaic Period (7,000 B.C.-1,000 B.C.)***

The Archaic period is commonly divided into three sub-periods: Early Archaic (circa 7,000-6,000 B.C.), Middle Archaic (circa 6,000-2,500 B.C.), and Late Archaic (circa 2,500-1,000 B.C.). Few Early or Middle Archaic period sites have been investigated and they, like Paleo-Indian sites, are often identified on the basis of the recovery of isolated projectile points. Paleo-environmental data suggest that a mixed needle and broadleaf forest cover had been established in Ontario by circa 7,000 B.C. and that the nomadic hunter-gatherers of this period exploited deer, moose and other animals, as well as fish and some plant resources, still moving relatively large distances over the landscape during the course of the year. The landscape in which these people lived continued to change, with much lower water levels in the Great Lakes and the expansion of more temperate forests. Over the following millennia, technological and cultural change is evident in the wide variety of tools produced, which in turn reflect the shifts in hunting strategies necessitated by a constantly evolving environment. By the Late Archaic period, however, hunter-gatherer bands had likely settled into familiar hunting territories. Their

annual round of travel likely involved occupation of two major types of sites. Small inland camps, occupied by small groups of related families during the fall and winter, were situated to harvest nuts and to hunt the deer that also browsed in the forests, and which congregated in cedar swamps during the winter. Larger spring and summer settlements located near river mouths, were places where many groups of families came together to exploit rich aquatic resources such as spawning fish, to trade, and to bury their dead, sometimes with elaborate mortuary ceremonies and offerings.

The lakeshore and estuary sites associated with this period are now submerged. Some of the interior sites survive, however, along the middle reaches of the regional rivers. One such site was found on Deerlick Creek, a tributary of the Don River. The site was investigated by Mima Kapches of the Royal Ontario Museum and found to have been occupied several times, including one occasion 6,700 years ago when a small stone pebble with a human effigy was left behind. An isolated 2,500 year old, exquisitely flaked biface was also recovered from the campsite, indicating recurrent uses of this place over thousands of years. Other isolated finds are known from within the former Township of Scarborough, now in the east end of the City. Farms near the Scarborough Bluffs, for example, have yielded 9,500-10,000 year old spear points, a 7,000 year old point, and several 4,000 year old stone tools including ground stone axes.

Excavations of regional sites have also yielded important insights into long-distance trade and elaborate mortuary ceremonies shared with distant groups throughout north-eastern North America. By approximately 3,000 years ago,

*Typical Paleo-Indian spear points that date to the Late Paleo-Indian period, circa 8,000 B.C.*



*The earliest Paleo-Indian occupants of the Toronto area knew a very different landscape than that encountered 10, 000 years later by the first European settlers.*





many of the stone tools, and especially those made from ground stone, have both social and symbolic functions. Many of these objects were made of banded slate and were carved and ground to resemble animals. While they may have had day-to-day uses such as weights for spear-throwing devices, their inclusion in burials also ascribes to them a sacred intent. Regardless of the context in which they were used or found, they rival any of the art produced anywhere in the world.

### ***Woodland Period (1,000 B.C.-A.D. 1650)***

The Woodland period is divided into four sub-periods: Early (1,000 B.C.-400 B.C.), Middle (400 B.C.-A.D. 600), Transitional (A.D. 600-A.D. 900) and Late (A.D. 900-A.D. 1650). The Late Woodland period, which witnessed the florescence of Iroquoian society in the southern Great Lakes region, is further divided into the Early, Middle and Late Iroquoian stages.

The Early Woodland period differed little from the previous Late Archaic period with respect to settlement-subsistence pursuits. This period is, however, marked by the introduction of ceramics into Ontario. Although a useful temporal marker for archaeologists, the appearance of these ceramics, does not seem to have profoundly changed the hunter-gatherer lifestyle. There is compelling evidence in the Early Woodland period, however, for an expanding network of societies across northeastern North America that shared burial rituals. A common practice, for example, was the application of large quantities of symbolically important red ochre (ground iron hematite) to human remains and the inclusion in graves of offerings of objects that represented a considerable investment of time and artistic skill. Moreover, the nature and variety of these exotic

grave goods suggest that members of the community outside of the immediate family of the deceased were contributing mortuary offerings.

The most significant change, during the Early and Middle Woodland periods, was the increase in trade of exotic items, no doubt stimulated by contact with more complex, mound-building cultures in the Ohio and Mississippi valleys. These items were included in increasingly sophisticated burial ceremonies that occasionally involved the construction of burial mounds by local groups. These developments may have emanated from the need for greater social solidarity among growing aboriginal populations that were competing for resources. Elaborate burial sites from this period were discovered near Grenadier Pond and at Baby Point on the Humber River during the late nineteenth and early twentieth centuries.

The pace of cultural change seems to have accelerated during the Transitional Woodland period. Much of this change was brought about by the acquisition of tropical plants species, such as maize and squash, from communities living south of the Great Lakes. The appearance of these plants initiated a transition to food production that reduced the traditional reliance on naturally occurring resources, thereby leading to a decrease in group mobility as people tended to their crops. Sites were more intensively occupied and subject to a greater degree of internal spatial organization.

Revolutionary changes continued in the settlement-subsistence regimes of regional populations. As the most populous and the most involved in the development of this new life-style, Ontario Iroquoian societies often form a distinct focus of Late Woodland archaeology; hence the Late

Woodland period is often subdivided into Early (A.D. 900-A.D. 1300), Middle (A.D. 1300-A.D. 1400) and Late Iroquoian (A.D. 1400-A.D. 1650) periods. The people who resided along the central north shore of Lake Ontario were the ancestors of the Neutral, Huron, and Petun, while to the south of Lake Ontario, in what is now central New York State, ancestral Iroquoians became the Five Nation Iroquois (Seneca, Cayuga, Onondaga, Oneida and Mohawk). While there were most certainly interactions between these Iroquoian-speaking groups, the Five Nation Iroquois did not inhabit the Toronto area until the mid-to-late seventeenth century.

Early Iroquoian society represents a continuation of Transitional Woodland subsistence and settlement patterns. Villages tended to be small, palisaded compounds with longhouses occupied by either nuclear or, with increasing frequency, extended families. These extended families formed the basis of social and political relationships within each village and between communities. The camps and hamlets around villages served as temporary bases from which to collect wild plants or to hunt game. While some corn appears to have been an important dietary component at this time, its role was still more that of a supplementary nature than a staple.

The Middle Iroquoian period marks the stage in Iroquoian cultural evolution at which point a fully developed horticultural system (based on corn, bean, and squash husbandry) and complex political means for regulating village affairs and linking separate villages had developed. Widespread similarities in pottery and smoking pipe styles also point to increasing levels of inter-community communication and integration. The commitment to producing



*Most of the art of the pre-contact peoples of the Great Lakes region likely was created using perishable materials such as wood and bone. When they used more durable materials, such as slate, their works are of great beauty. Moreover, the imagery typically is imbued with complex symbolism and powerful cultural meanings.*



*Large Iroquoian settlements, based on horticulture, were complex and dynamic communities.*



food through agriculture involved abandoning the group mobility that had characterized aboriginal life for millennia. Instead, base settlements were established and land cleared around them for crops, while hunting, fishing, and gathering parties were sent out to satellite camps to harvest additional naturally occurring resources. By the beginning of the fourteenth century and due to the increasing reliance on horticulture, most Iroquoian people inhabited large, sometimes fortified villages throughout southern Ontario, including the central north shore of Lake Ontario within the Humber, Don, Duffins, and Rouge drainage systems. New villages are discovered and excavated every year. The Alexandra site, for example, is a fourteenth century Iroquoian village discovered in the summer of 2000, during a routine pre-development archaeological assessment along Highland Creek in northeast Toronto. The site was over two hectares in extent and yielded evidence of 17 house structures, more than 600 sub-surface cultural features and approximately 19,000 artifacts. Three others were discovered near Toronto in 2003.

Communities continued to change during the fourteenth and fifteenth centuries. Certain village households, for example, consistently grew larger and more variable in membership than others within the same community. This trend peaked around the turn of the sixteenth century with some longhouses being repeatedly enlarged to reach lengths of over 120 metres. Some villages attained a size of over four hectares. This trend may reflect changes in the fortunes and solidarity of dominant lineages within villages and/or the movement of families between allied communities. During the sixteenth century, longhouses became smaller again. This modification of residential patterning suggests that changes had occurred in the kin-based politi-

cal system. It has been suggested that this change reflects increased importance of clans over lineages. Since clan membership cut across related communities, this aspect of kinship was an important source of tribal integration. When European explorers and missionaries arrived in Ontario at the beginning of the seventeenth century, Iroquoian villages were under the direction of various chiefs elected from the principal clans. In turn, these villages were allied within the powerful tribal confederacies.

Most, if not all, of the Lake Ontario north shore communities, had moved by about 1600 from Lake Ontario northward, joining with other groups in Simcoe County to form the Petun and Huron, or westward to join other ancestral groups of the Neutral, who were situated around the west end of lake Ontario and in the Niagara Peninsula. While this movement of communities likely took place over many generations, the final impetus was conflict with the Five Nations Iroquois of New York State. Intertribal warfare with the Five Nations during the first half of the seventeenth century, exacerbated by the intrusion of Europeans, ultimately resulted in the collapse (and dispersal) of the three Ontario Iroquoian confederacies—the Huron, the Petun and the Neutral.

### *The Contact Period*

By the late 1600s, the Five Nations Iroquois, in particular the Seneca, were using the central north shore of Lake Ontario for hunting, fishing, and participation in the European fur trade. Their main settlements were located near the mouths of the Humber and Rouge Rivers, two branches of the Toronto Carrying Place—the route that linked Lake Ontario to the upper Great Lakes via Lake Simcoe.

Indeed, on the plateau above and on the flats at Baby Point on the Humber River, David Boyle documented a village site in the late nineteenth century, more familiarly referred to as “Teiaiaagon.” Another Seneca village called “Ganatsekwyagon” (thought to be the Bead Hill archaeological site) was situated two kilometres from the mouth of the Rouge River. The first European use of the latter site was as a mission established by the Sulpician Fathers from 1669 to 1671 under François d’Urfé. The missionary François de Salignac de la Motte-Fénélon spent the winter of 1669-1670 on the site. This represents one of the first recorded residencies of a non-aboriginal in the Toronto region.

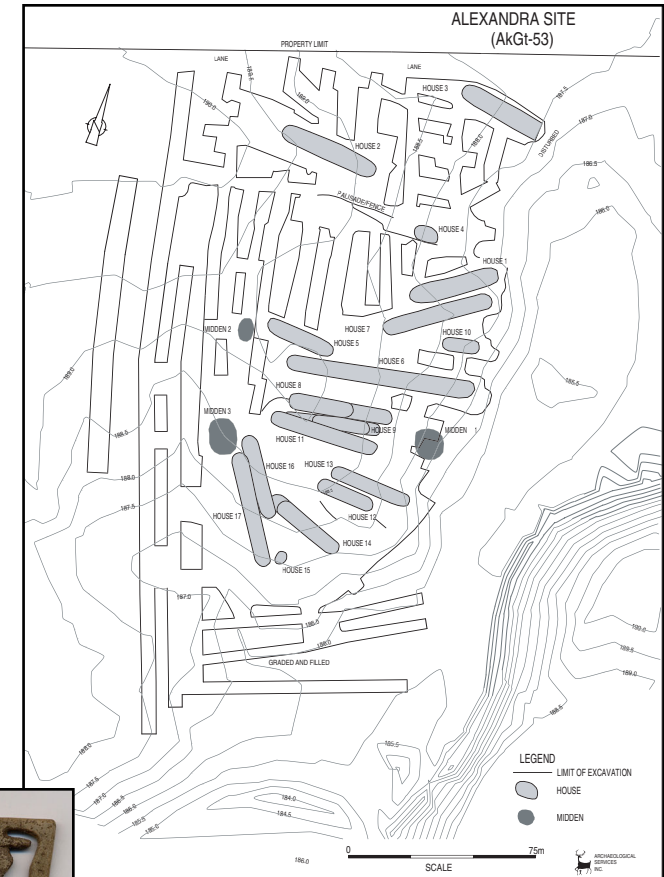
Both the Seneca and earliest European occupations along the original Toronto waterfront, therefore, were largely defined by the area’s strategic importance for accessing and controlling long-established economic networks. All of these occupations occurred on or near the Lake Ontario shoreline, between Kingston and Hamilton, at sites that afforded both natural landfalls for Great Lakes traffic, and convenient access, by means of the various waterways and overland trails, into the hinterlands.

Thus, the first European settlement of Toronto was very much a continuation of patterns that had been in place for thousands of years.

### *The Post-Contact Period*

When we think about urban growth, it is often with an idea of ever widening circles expanding outward over time from a historic core. Although to some extent the City of Toronto can trace its origins to the ten-block radius of the (Old Town of) York, the history of the city and how it formed and

*The layout of the mid-to late fourteenth century Iroquoian village known as the Alexandra site, discovered in 2003 during an archaeological assessment carried out in advance of a subdivision development in Scarborough. The settlement extended over an area of 2.5 hectares.*



*Reproduction of a bone comb recovered from a seventeenth century Seneca burial accidentally disturbed by a service line at Baby Point. The original artifact was re-interred with the individual after the grave site had been documented.*

developed over time is a far more complicated process. The contemporary city, made up of the historic townships of Etobicoke, York and Scarborough, is actually the product of a coalescence of settlement centres, the evolving patterns of industrial and agricultural development, and the transportation networks that emerged to support them. The needs of aboriginal communities and European traders and settlers, and the demands of political economy, drove these patterns, while practical necessity and historic memory determined settlement areas.

The first Europeans to arrive in the area, such as Etienne Brulé and Robert Cavelier, Sieur de la Salle, were transient merchants and traders from France and England, who wisely followed aboriginal pathways and set up trading posts at strategic locations along well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls for Great Lakes traffic and convenient access, by means of the various waterways and overland trails, into the hinterlands. Chief among these was Fort Rouillé, a small, wooden trading post on the shore of Lake Ontario east of the Humber River, which was built for the purpose of intercepting aboriginal traders before they could cross the lake to trade with the English on the south shore. Jean Baptiste Rosseau established a later trading post at the mouth of the Humber.

During the early contact period, settlement in the Toronto area was limited, although its potential to serve as an effective link in the transportation and communications network associated with the fur trade was widely recognized. With the ascendancy of British authority and the purchase of aboriginal lands, came additional military sites on the lakeshore. Lieutenant Governor John Graves Simcoe's settlement on the

west side of the outlet of the Don River was very much a continuation of earlier patterns. Like the aboriginals before them, the first settlers chose a shoreline port location for the Town of York, and they established economic subsistence industries along accessible waterways such as the Humber and Don Rivers. Following the extensive use of the Humber River as a trade route and outpost, Simcoe established the King's Mill, on the site of an earlier French mill, near the present day crossing of the river at Bloor Street. Early transportation routes followed early aboriginal trails, both along the lakeshore and adjacent to various creeks and rivers. The primary north-south route was the Toronto Passage, which connected Lake Ontario, via the Humber River and other waterways and trails, to Georgian Bay.

Following the American Revolution, lands north of the lake were surveyed into townships, then patented and either sold or granted to a mix of European immigrants and United Empire Loyalists. The Town of York formed a compact plot within the area now bounded by Front, George, Duke and Berkeley Streets. This ten block survey was set below the baseline of a grid of concessions surveyed for farming settlements to the north, while 100 acre park lots that stretched from Lot Street (present day Queen Street) to Bloor Street were also offered up as grants to government officials who, it was hoped, would establish estates and form a landed aristocracy. On the west side of town, the Garrison maintained control of those lands east of Garrison Creek, between the lakeshore and the present Queen and Peter Streets.

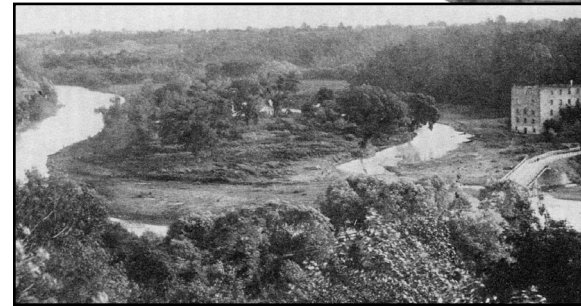
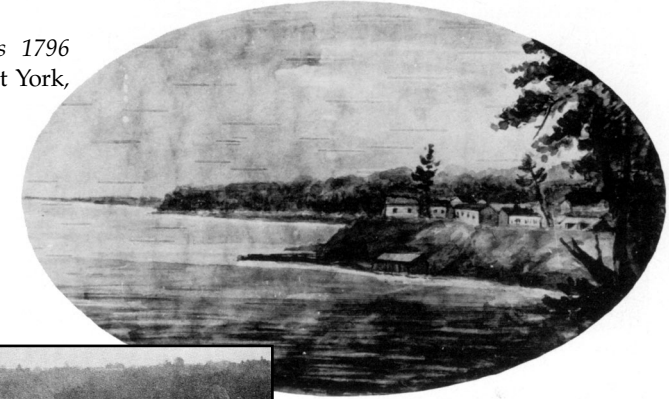
York did not grow dramatically at first because the area's first settlers only passed through on their way to assume land in the surrounding townships. They used the town solely as a place for purchasing goods and services or for



providing services. The carpentry and construction offered by William Berczy's German Company, for example, cleared roads and built a hamlet of log and timber houses in the middle of the town plot. While rural hamlets were establishing their own stores, mills, taverns, and blacksmith shops, the civilian settlement of York largely supplied goods and services to the military. Governor Simcoe began construction of Dundas Street, Yonge Street, and Danforth Road to carry troops and supplies, to support settlement and facilitate movement between town and town, and town and country.

Before the three townships surrounding York were permanently settled by successive waves of European and Loyalist emigration, economic activity was isolated, transient, and related exclusively to servicing military outposts and facilitating the fur trade. Once the early settlers arrived, however, they used the dense mixed hardwood and softwood forests on their land for the construction of local buildings as well as for export. In the 1800s, Etobicoke and Scarborough Townships, and the northern portion of York Township consisted of many scattered villages, the locations of which were at first determined by their proximity to water-powered mills and transportation routes. Mills and milling provided the focus for community development, and the first township villages followed a common pattern, beginning with the establishment of a saw mill, then a grist mill, followed by a variety of trades and services that supported the needs of industry and settlers. In time, agricultural production supplanted timber production, and when roads and rail systems were built to bring produce and livestock to ports and town markets, other settlements were established at crossroads and junctions along the way. As transportation networks diversified so, too, did the location of communities.

*Lady Elizabeth Simcoe's 1796 painting The Garrison at York, viewed from the east.*



*View of Gamble's Mill, site of the King's Mill on the Humber River.*



*Lambton Mills and its surrounding area, as depicted in the 1878 Illustrated Historical Atlas of York County.*



Villages eventually lost their dependency on rivers when, with a major population influx, roads were surveyed and improved through the wilderness, and small settlements sprang up wherever major thoroughfares and concession and line roads intersected. The same is true after 1856, when the construction of railway lines created junction communities adjacent to stops along the route. At first, these crossroads and junction settlement centres existed largely to provide goods and services to travelers on long distance journeys, or to aid in the shipment of goods across the province, but as resident families settled near the crossroads and created other institutions and amenities of village life, population growth, diversified industries and a consolidation of a strong agricultural base allowed villages to flourish beyond their initially transient economies. The growth and development of the civilian Town of York also continued throughout the early nineteenth century, expanding inland to the present Queen Street (comprising what was known as the New Town) with additional lots surveyed as far north as Bloor Street.

York's most significant economic role in the early years was as an importing and distributing centre, with the advantages of an expanding transportation system and a strong mercantile community. York Harbour attracted schooners, bateaux and steamboats, and was used as a transshipment point as roads were cut to link the interior with the lake. When the fledgling community established coal and iron technologies, local manufacturing increased so that by the 1830s, in addition to the mills along the rivers, the town had iron foundries, plough and axe manufacturers, steam engine-driven plants and mills, as well as cabinet and carriage makers, leather works, tanning yards, and candle and soap factories. These industries were largely concentrated

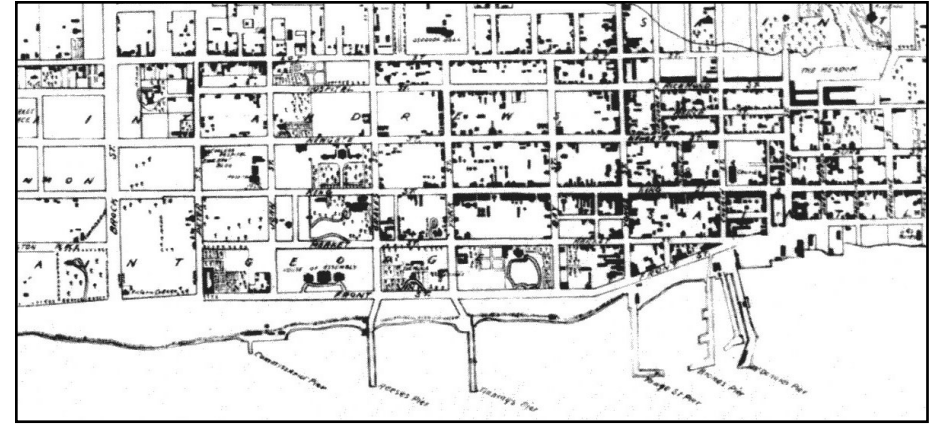
in the waterfront area of the town, although the post-1833 steam engine power boom allowed industries to establish manufacturies away from the rivers. This move toward decentralization coincided with the incorporation of the new city of Toronto (with its expanded boundaries) in 1834.

Commercial and industrial development intensified during the latter half of the nineteenth century, and the construction of railways during this time radically altered development patterns as the city expanded westward. This expansion encouraged a wave of urban building and, along with the development of key junction communities in adjacent townships, is inextricably linked to the city's railway and industrial history. Railways laid the foundation for new industrial growth and fostered concentrations of large-scale manufacturers. In time, new technologies and transportation systems brought township villages closer to each other, while the villages closest to Toronto were incorporated into the city boundaries or were annexed directly in the latter part of the nineteenth century. Economic prosperity and urban opportunity drew people to various parts of the city to live and work, and the development of internal urban transport promoted a more widely spread community. Eventually, the establishment of discrete business and residential districts further decentralized the city.

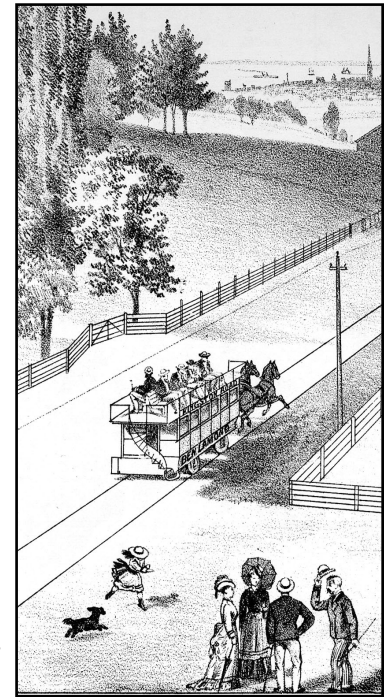
The evolution of the city continued at an even greater pace throughout the late nineteenth and early twentieth centuries, with the consolidation of rail systems and the growth of numerous industrial and commercial operations within the city limits and along the rail corridors. Rail and ship connected Toronto to the larger Canadian resource economy. While the urban city was growing, however, the populations of Scarborough and Etobicoke were decreasing, and

this decrease was accompanied by the loss of several industries as well as village trades and occupations. Agricultural production was also adversely affected and this, too, altered the character of township lands over time. Whereas the natural resources and industries of the hinterlands had once provided the economic foundation for the mercantile Town of York, the new concentration of industries within the urban centre and the easy availability of wheat and grain from western markets caused a shift in the reciprocity between town and country. Nevertheless, the townships that surrounded Toronto remained largely agricultural well into the twentieth-century, although a steady replacement of agricultural fields with suburban residential development persisted. The twentieth century also brought with it many modern conveniences—electric power, telephone service, and the automobile, all of which altered traditional settlement and transportation patterns.

To understand the city of Toronto as the product of dynamic processes—processes that are linear and progressive but not centralized—is to envision the historic development of discrete areas that were at once independent and interdependent. Just as the Town of York relied on William Berczy's labour and the Humber's lumber, so too did township villages rely on the roads and rails that were fueled and funded by urban innovators and entrepreneurs. Farms in Etobicoke, Scarborough, and York Townships fed York's markets, as did local mills and small-scale industries. Toronto's financial core was built, in those early years, on the fortunes of rural land speculators, millers, and merchants. The urban city developed segmentally, without much public ordering, municipal planning, or design. Colonial town plots, reserves, and park lots were replaced by the *ad hoc* building enterprises of entrepreneurs and a



*The increasing density of development within the Old Town by the mid-nineteenth century is apparent from Cane's Topographical Map of the City and Liberties of Toronto, produced in 1842.*



*The view from the verandah of the Boston Hotel, Kingston Road, Norway.*

civic-minded upper class. Growth was uneven, spreading westward from Old Town to New Town and outward to the liberties and suburbs, while in the surrounding townships, farms were established on every lot, and agricultural producers harnessed technological advancements to increase production. Over time, villages and towns grew toward each other to form larger municipal areas. In this way, the present day City of Toronto can be seen to be an amalgamation of early settlement centres, agricultural lands, and waterways that were later bisected and altered by railway tracks, roads, and the industries that sustained residential communities and manufacturing enterprises.

The implications of this thematic approach to the history of the city for developing a predictive model of archaeological potential are numerous. Rather than focusing our efforts on uncovering a city centre, a thematic approach allows us to perceive the city as a layered series of pre-contact and historic pathways and nodes, which are more or less obscured by twentieth century building. These nodes can be understood both individually and cumulatively, and the discovery of each occupational layer can be anticipated in the landscape's archaeological record. Appreciating the overlapping uses of land over time, and understanding the reasons why people have historically chosen the places they do for subsistence and settlement, will help us to identify locations that have a long and continuous history of occupation, and to predict the kind of material evidence that will be encountered during archaeological investigations. This approach will also aid in the preliminary determination of areas that have the potential to yield significant cultural heritage resources. The pre- and post-contact uses of the Humber, Don, and Rouge Rivers, for example, make these geographic regions significant areas of high archaeological

potential, and we can expect to find material evidence from various periods of human occupation in the valley lands.

Finally, it is important to recognize how activities in one part of the city are linked to developments in other areas, and how they are all part of larger processes of historic change. In this way each investigation of an archaeological site, from an Iroquoian village to a nineteenth-century farmstead, a mill, a waterfront industry or a working-class New Town cottage, will not only provide information about a discrete period or place, it will also contribute to our understanding of the dynamic process of urban growth and the interdependence of human communities.

## THE CITY OF TORONTO POTENTIAL MODEL

### The Principles of Archaeological Potential Modeling

Archaeological site potential modeling can trace its origins to a variety of sources, including human geography, settlement archaeology, ecological archaeology, and paleoecology. The basic assumption is that pre-contact land use was limited or shaped by ecological factors, such as the locations of the natural resources upon which people depended for their livelihood. Potential modeling therefore represents the attempt to reconstruct past land use patterns through archaeology, geography, paleoecology and history.

Two basic approaches to predictive modeling can be described. The first employs known site locations, derived from either extant inventories or through sample surveys, as a guide for predicting additional site locations. The second

approach predicts site locations on the basis of expected behavioural patterns, as identified from suitable ethnographic, historical, geographical, ecological, and archaeological analogues. Every modeling exercise will incorporate elements of both approaches.

Three major factors limit the resolution of our images of the past and hence our ability to predict pre-contact site locations with absolute certainty:

- 1) the inadequacies of the existing archaeological database—few areas in the City have been subject to systematic archaeological survey.
- 2) knowledge of the pre-contact natural environment is limited by both the inadequacies of the existing paleoenvironmental database and the inherent difficulties in interpreting extinct ecosystems.
- 3) pre-contact aboriginal people possessed a world view that was substantively different from our own. There are certain classes of sites, used for burials or vision quests, for example, that were situated primarily for ideological or aesthetic reasons and are, therefore, impossible to understand using economically based methods of spatial analysis.

In spite of these limitations, predictive modeling efforts to date have proven successful to the extent that they can permit site potential assessments at a level of probability that is useful in the context of heritage resource assessment and planning.

### **Creating the Base Map for the City of Toronto's Potential Model**

Toronto's potential model is being developed using a Geographic Information System (GIS) to map various sets of criteria or filters as separate, but complementary layers of spatial data on approximately 1:10,000 scale digital base mapping of the study area. Overlaying and adjusting these filters will lead to the production of a final digital map of archaeological potential, which will exist as a discrete layer in the City's GIS system.

Since access to drinking water is perhaps the most important criterion on which to model site location in the pre-contact and early contact periods, it was necessary to enhance the water layer in the City's system. All watercourses (e.g., the lake, major rivers, creeks and their tributaries) and other water bodies, such as ponds and wetlands were identified on the project base mapping and identified on a discrete GIS layer. This layer was refined through comparison with variable scale NTS mapping, historic sources and the graphic synthesis prepared by the Lost Rivers Project, the latter of which should be considered an impressive volunteer achievement. The resultant drainage pattern is the most comprehensive hydrographic pattern that has yet been prepared for the City although field checking of various sites has indicated that water previously moved through the formerly forested landscape in ways that are still not captured. For example, the incidence of kettles, springs and ponds increases toward the north edge of the study area, signs of which have been completely erased from the landscape. A final step in refining this layer might be comparison of the current layer with the City's digital elevation model.

The map sources that were used to refine the resolution of the water layer are presented in Table 2.

## The Pre-contact Layer

### Sites

While our knowledge about archaeological sites in the amalgamated city is very uneven, attempts were made by nineteenth and early twentieth century historians to consolidate what was known. In 1933, for example, Percy J.

Robinson identified many of the important historic sites in the Toronto area in his *Toronto During the French Regime*. This built on his own extensive research as well as that of Henry Scadding and others. An overview of aboriginal sites in the metropolitan area was carried out in 1971 by Victor Konrad, a geographer from York University. Konrad reviewed and mapped all of the site locations he could document in the published and unpublished archaeological literature, newspapers, and university and museum collections. He also recorded sites on the basis of interviews with

**Table 2: Map Sources for the Water Layer**

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Energy Mines and Resources National Topographic Series, 1985 based on 1980 and 1981 aerial photography, NAD27 Maps 30M/11, 12, 13, 14.

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*Toronto and Area*, 2003 Edition, MapArt Publishing and Peter Heller Ltd., Toronto.

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Environment Canada Flood Risk Maps 5, 6, 7 and 8 – Metropolitan Toronto and Region, based on hydrologic and hydraulic analyses 1977-79 and aerial photography taken by MTRCA in 1978, Toronto.

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*Lost Rivers of the Downsview Lands and Surrounding Toronto Area*, North Toronto Green Community: Lost Rivers Project, 1999, Toronto, Ontario, which relied on:

*Plan of York Harbour with the Soundings*, Sholes A. Aitkin, 1793; *Plan of the Harbour of York*, Gothe Mann, 1800; *Plan shewing the survey of the land reserved for government buildings east end of the Town of York*, Tom G. Wilmot, 1811; *Sketch of the Ground in advance of and including York Upper Canada*, George Williams, 1814; *Plan of York*, George Phillpotts, 1818; *Plan of the Town of York*, J. G. Chewitt, 1827; *Plan of the Town and Harbour of York Upper Canada*, S.J. Ford, 1833; *Map of the City of Toronto*, 1851; *Canada Toronto Verification Plan*, Sanford Fleming, 1852; *Incorporated Village of Yorkville*, C.P. Liddy, 1853; *Sketch of a Reconnaissance of the Ground in the Neighbourhood of Toronto*, F.H. Fawkes, 1868; *Plan of Part of the City of Toronto Shewing the Town Lots on Bellevue*, J. Staughton Dennis, 1854; *Map of the Village of Parkdale, Wadsworth and Unwin*, 1879; *The Mapping of Victorian Toronto, the 1884 and 1890 Atlases of Toronto in Comparative Rendition*, Charles Edward Goad, 1973.

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*Illustrated Historical Atlas of the County of York*, 1878, Miles and Company, Toronto

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*The Other Map of Toronto: Your Gateway to Nature, Culture and Urban Adventure*, Green Tourism Association and the City of Toronto, 2003. Toronto.

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*Parks and Green Space in the City of Toronto*, Toronto Parks and Recreation.

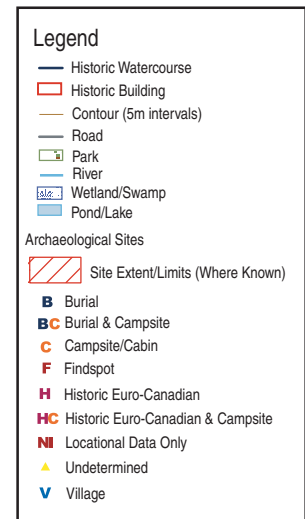
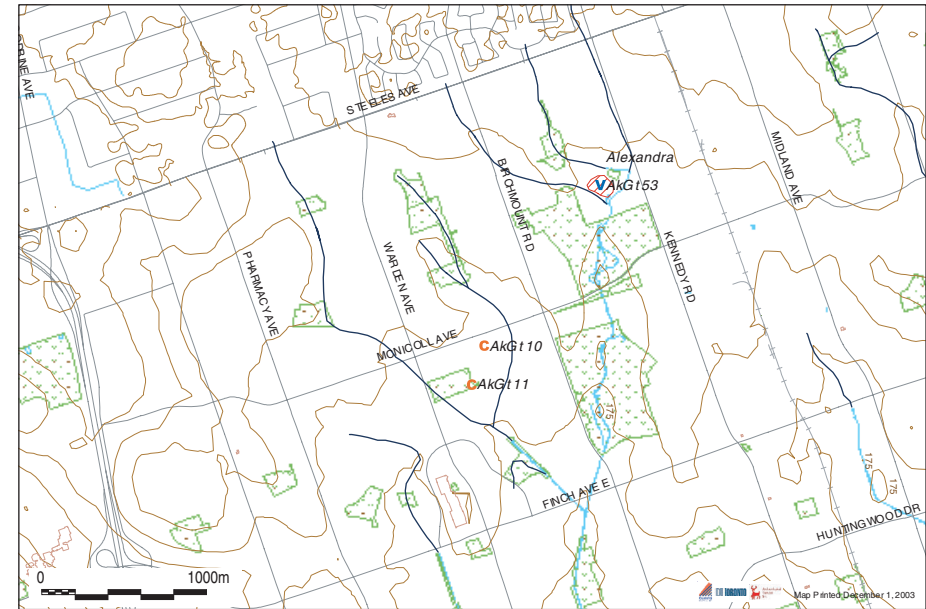
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professional and avocational researchers and landowners. He recorded these sites, but did not verify them through field work. This sometimes led to inaccurate locations and/or incomplete characterizations being ascribed to sites. Despite its limitations, Konrad's study was crucial in drawing attention to the mid-twentieth century destruction of Toronto's archaeological record through development, and remains a reference for contemporary archaeological research.

Systematic professional assessment of the City began in the 1980s with the completion of the first phase of an Archaeological Master Plan for the City of Scarborough, undertaken by Dana Poulton, and the 1985 survey, undertaken by Don Brown, Scarlett Janusas and Margot Teasdale, of the basic historical documentation within the boundaries of the old city. They did some preliminary site identification based on historic mapping, city directories, local histories and registered archaeological sites. Although no potential modeling was carried out, they did undertake preliminary field identification. Files were created for each of the sites. Also, a number of informative studies were undertaken within the City throughout the 1990s by ROM-based and consultant archaeologists.

The starting point, however, for acquiring site information for the City is with the Province. Since 1974, all archaeological sites for the Province of Ontario have been registered in a data base maintained by the Heritage Branch of the Ontario Ministry of Culture, Toronto. This data base is the official, central repository of all site information for the province collected under the Ontario Heritage Act. An associated GIS has been developed by the Ministry. The inventory of registered archaeological



*The former distribution of registered archaeological sites within part of Scarborough. This area has been extensively developed in recent years, resulting in the destruction of these, and perhaps other, sites. The Alexandra site, however, was completely excavated prior to its destruction.*

sites presented here was compiled through consultation with their Data Co-ordinator, Mr. Robert von Bitter.

The data base is organized by Borden block, named for Dr. Charles Borden, who designed this Canada-wide archaeological site registration system in the early 1950s. A Borden Block is a unit defined as 10 minutes latitude by 10 minutes longitude. Each Borden Block is given a four digit alphanumeric designator, which gives it a unique geographic placement within Canada. The City of Toronto encompasses lands within nine Borden Blocks: AjGt, AjGu, AjGv, AkGs, AkGt, AkGu, AkGv, AlGs, and AlGt.

There are 172 registered archaeological sites that could be accurately plotted on the base mapping within the City (Table 3). While most of these were in the Ministry database, several were added based on research undertaken by our firm. The locations of these sites were refined carefully using the Ministry's site record forms and the descriptions of site locations found in the original assessment or site reports. Of equal importance is the fact that our staff had visited many of these sites. Of the 172 sites, 31 are classified as villages and 45 as camps. For the purposes of archaeological resource planning and management, sites classed as camps, purportedly of substantial size, and Late Woodland agricultural villages represent the most significant and reliably-documented sample upon which to base statistical analysis and the identification of archaeological potential zones. Findspots, consisting of only one or two artifacts, are not used since they were likely discarded during highly transient activities on the landscape such as hunting, while the locations of burials may reflect landscape and spiritual values that are beyond the ability of economic modeling to detect.

**Table 3: Registered Archaeological Sites within the City of Toronto**

	<b>Number</b>	<b>%</b>
Village	31	18
Campsite/Cabin	45	26
Pre-contact Findspot	33	19
Pre-contact Site of Unknown Nature	8	5
Pre-contact Burial	18	10
Euro-Canadian	37	22
Total	172	100

**Table 4: Additional Registered Archaeological Sites within the Expanded Study Area**

	<b>Number</b>	<b>%</b>
Village	7	3
Campsite/Cabin	71	32
Pre-contact Findspot	70	31
Pre-contact Site of Unknown Nature	30	13
Pre-contact Burial	8	4
Euro-Canadian	37	17
Total	223	100

In order to gain a larger sample of sites that could be used in the model, a buffer of two to eight kilometres, but typically four, was added around the City boundary. This resulted in the addition of 223 sites of which 7 were villages and 71 were camps (Table 4), most of which are situated in the upper reaches of the Rouge, Highland, East Don and Humber river systems. These additional sites, therefore, directly inform modeling of the pre-contact potential of the middle and lower reaches of these drainage systems in the City. The total modeling sample is 154 sites.

All registered pre-contact archaeological sites were buffered in the pre-contact archaeological potential model to ensure that sites for which limited location or size data are available will be conserved. In the case of those sites where substantial investigation has occurred, the buffer is intended to capture deposits associated with activities undertaken outside the perimeter of the sites. For Late Woodland villages, a 200 metre buffer, measured from their centre points, has been established, while for other sites a 100 metre buffer was used.

### *Water*

In southern Ontario, “distance to water” is considered to have been a primary factor in the selection of site locations by pre-contact groups, since watercourses would have served important functions as sources of potable water, principal transportation corridors, and rich habitats supporting various food resources including plants, fish, waterfowl, and certain mammals.

Having overlaid the pre-contact archaeological sites onto the refined hydrographic layer, statistical analyses were completed to identify any spatial relationships between sites of particular types and water. For each pre-contact village or campsite mapped in the GIS, a circular buffer was defined with a radius of ten metres, starting from the centre point of each site, and increasing at ten metre increments, in order to identify the edge of the closest water source.

To summarize, over 85% of all registered pre-contact camps and villages in the City and expanded study area lands are found within 250 metres of water, a finding which suggests that a buffer zone extending 250 metres from any water source constitutes an acceptable characterization of pre-contact archaeological site potential as that relates to water within the

study area. The explanations for the 19 sites that were more than 250 metres from a source of water lies with the resolution of hydrographic mapping and/or the casual nature of their initial registration, often based on collection reviews and interviews. Ten of the sites are situated within completely developed zones of the City where evidence of small tributaries or formerly intermittent streams has been largely obliterated. Fourteen of the sites were documented by researchers on the basis of hearsay evidence, the result of which is almost always inaccurate records of site locations. One site, however, located 330 metres from water as currently mapped in the Humber River Valley, is directly on the top-of-slope of the valley. This situation must be accommodated within the model.

To further refine this basic proximity to water criterion, therefore, all lands located beyond 250 metres of water, but within 250 metres of the top of bank of all major rivers within the City, such as the Humber, Don or Rouge and their major tributaries, are also considered to demonstrate significant potential for selection by pre-contact populations. In addition to the buffering of linear hydrographic features, a 200 metre buffer was established back from the brow of the glacial Lake Iroquois strand. A 100 metre buffer was established out from the bottom of the bluff. Although Lake Iroquois had retreated more than a millennium before the first human occupants of the City arrived, and was hence not significant as a hydrographic feature *per se*, its role as an important aboriginal route has long been acknowledged. A 250 metre buffer was also applied to the original Lake Ontario shoreline. Accordingly, these zones are mapped as a discrete layer of pre-contact potential within the project GIS.

With respect to the other site categories that are not used in the model, this water buffer captures 81% of findspots, 75%

of burials, and 76% of those sites where no information is known other than the fact that they are pre-contact.

### *Soils*

Soil distribution affected the distribution of past plant communities and, in turn, faunal communities. Moreover, soils can be considered a resource, which to some extent, influenced the distribution of groups that practiced horticulture. Therefore, soils were also considered for modeling potential.

The Ontario Soil Survey has mapped twenty-nine distinct soil series within the City of Toronto, as well as a number of other land categories, including bottom land, marsh, muck, and unclassified urban land. A digital version of the soils map for Toronto was incorporated as a separate layer within the project GIS.

For purposes of analysis, the 29 mineral soil series and three wetland soils mapped for the City of Toronto were collapsed into two groups considered to provide a more meaningful understanding of the distribution of soils. First, the soils were re-grouped on the basis of Canada Land Inventory (CLI) capability for agriculture ratings. The CLI classes are as follows: Class 1—no significant limitations for agriculture; Class 2—moderate limitations for agriculture; Class 3—moderately severe limitations to agriculture; Class 4—severe limitations to agriculture; Class 5—very severe limitations to agriculture; Class 6—only capable of producing perennial forage crops; Class 7—no capability for arable culture or permanent pasture. Second, the soils were re-grouped on the basis of a composite of texture (sand, coarse loam, fine loam, clay, organic, and alluvium) and drainage (well, imperfect, and poor) classes. These groupings were done in order to facilitate the use of

soils data as proxy measures for physiographic attributes, such as surficial geology and landforms, as well as biotic attributes, such as preferred growing conditions for various tree species. They also were deemed to be useful categories for evaluating the possibility that Late Woodland peoples may have selected certain gross soil classes when locating their agricultural settlements.

Once the re-classifications had been mapped, the site layer was then overlaid on the two soils layers, and soils frequencies were tabulated for each site within its catchment. This allowed the comparison of soil frequencies within the site catchments to the background levels across the study area to see if significant correlations between sites and soils could be identified.

The subsequent analysis indicated that, for the sites used in the analysis, there was no significant correlation with any particular soil group. In other words, the sites were randomly distributed with respect to soils. While significant correlations were noted with respect to Late Woodland villages and soils, there was no consistently over-riding trend that could be used for inductively modeling site potential throughout the City. In light of these results, soils were not pursued as a criterion for deriving zones of archaeological potential.

### *Slope*

Slope is also considered to have been a key factor in the selection of site locations by pre-contact groups. Data were provided by the Toronto Region Conservation Authority, which were then categorized and mapped according to three classifications: 0-5°, 6-10° and over 10°. It is assumed that non-transient occupations would only have occurred on lands belonging to the first category, although the

peripheries of large village sites regularly incorporate landscape elements that exceed 5°.

### **The Historic Layer**

Examination of eighteenth and nineteenth century mapping, as well as other primary source material, together with consideration of the basic historical themes that have been most influential in explaining the development within the City, have led to the identification of areas of early settlement with its associated commercial, industrial and transportation features. It is recognized that these maps did not always illustrate historic features that may be of interest and are thus not definitive.

With regard to the settlement centres across the City, their boundaries will be plotted using the same sources. The boundaries of these settlements, as plotted, serve to indicate those areas where most of the building activity was concentrated at the time the sources were produced. In general, individual public buildings and homes will not be mapped within these centres. On the whole, however, the settlement centre overlay is indicative of those areas that exhibit potential for the presence of places of worship, meeting halls, school houses, blacksmith shops, stores, hotels, taverns, and other commercial service buildings.

The original design of this study involved the application of modeling criteria to sections of the City demonstration areas. In order to examine how the historic layer will be developed for each demonstration area, based on the thematic history and additional, more detailed historical research, a GIS layer of historic features was created for a

small section of the Humber corridor—the first demonstration area. The following paragraphs detail how historic potential will be mapped for each demonstration area.

All schools, places of worship and commercial buildings, such as inns, that occur outside of the major settlement centres will be mapped individually, if their locations are shown on the relevant historic maps. These features represent the earliest structures of social and economic significance in the City and should be considered heritage features demonstrating significant archaeological potential. All features will be mapped as points buffered by a radius of 100 metres. All mill locations, lime kilns, and quarries will be mapped.

Transportation routes such as early settlement roads (buffered by zones of 100 metres either side), and early railways (buffered by zones of 50 metres either side) will be mapped to draw attention to potential heritage features adjacent to their rights-of-way. Cemeteries and family burial grounds will be included in the historic theme layer due to their particularly sensitive nature and the fact that these sites may become invisible in the modern landscape. In general, information concerning pioneer cemeteries will be obtained from Ontario Genealogical Society records and members of the public. Their locations will be plotted based on an examination of relevant historic maps and the layer provided by the City. Some of these locations will be field verified. In general, this inventory of cemeteries will not include large, municipal and private cemeteries in urban areas, especially if they have been established recently. The historic cemeteries will be buffered with 100 metre zones.

Homesteads, that were formerly rural and isolated, will also be illustrated, where possible. It should be noted that

nineteenth century maps rarely provided comprehensive location data for rural homesteads. Those that will be mapped will be buffered with a radius of 100 metres. Also, many homes first illustrated on a map in the mid-nineteenth century may date to an earlier period and only specific archival research can confirm its history.

Table 5 provides a summary of the proposed modeling criteria.

### *The Composite Archaeological Potential Layer*

The final GIS layer, which is the map of the overall zones of archaeological potential within each of the demonstration areas, is compiled by merging the zones of pre-contact archaeological potential and the thematically defined zones of historic archaeological potential. Four maps have been provided for the small section of the Humber corridor to demonstrate how the composite layer is derived: 1. pre-contact archaeological potential; 2. historic features; 3. historic archaeological potential; and 4. composite archaeological potential. The composite archaeological potential map, therefore, illustrates all areas within that study area that exhibit the potential for archaeological features.

**Table 5: Summary of Proposed Site Potential Modeling Criteria**

	Environmental or Cultural Feature	Buffer Distance (metres)	Buffer Qualifier
<b>PRE-CONTACT SITE POTENTIAL</b>	Lake Ontario shore	250	none
	rivers	250	from top of bank
	floodplains	complete	none
	creeks	250	none
	Glacial Lake Iroquois strand	200	above strand only
	Glacial Lake Iroquois strand registered archaeological sites	100 100-200	below strand only none
<b>HISTORIC SITE POTENTIAL</b>	aboriginal trail	100	both sides
	historic settlement centres	polygon as mapped	no buffer
	domestic sites	100	none
	breweries and distilleries	100	none
	hotels/taverns	100	none
	historic schools and churches	100	none
	historic mills, forges, extraction industries	100	none
	early settlement roads	100	both sides
	early railways	50	both sides
	train stations	100	none
	cemeteries	100 around polygon	none
	military batteries	100	none
	battlefields	polygon as mapped	none
	registered archaeological sites	100	none

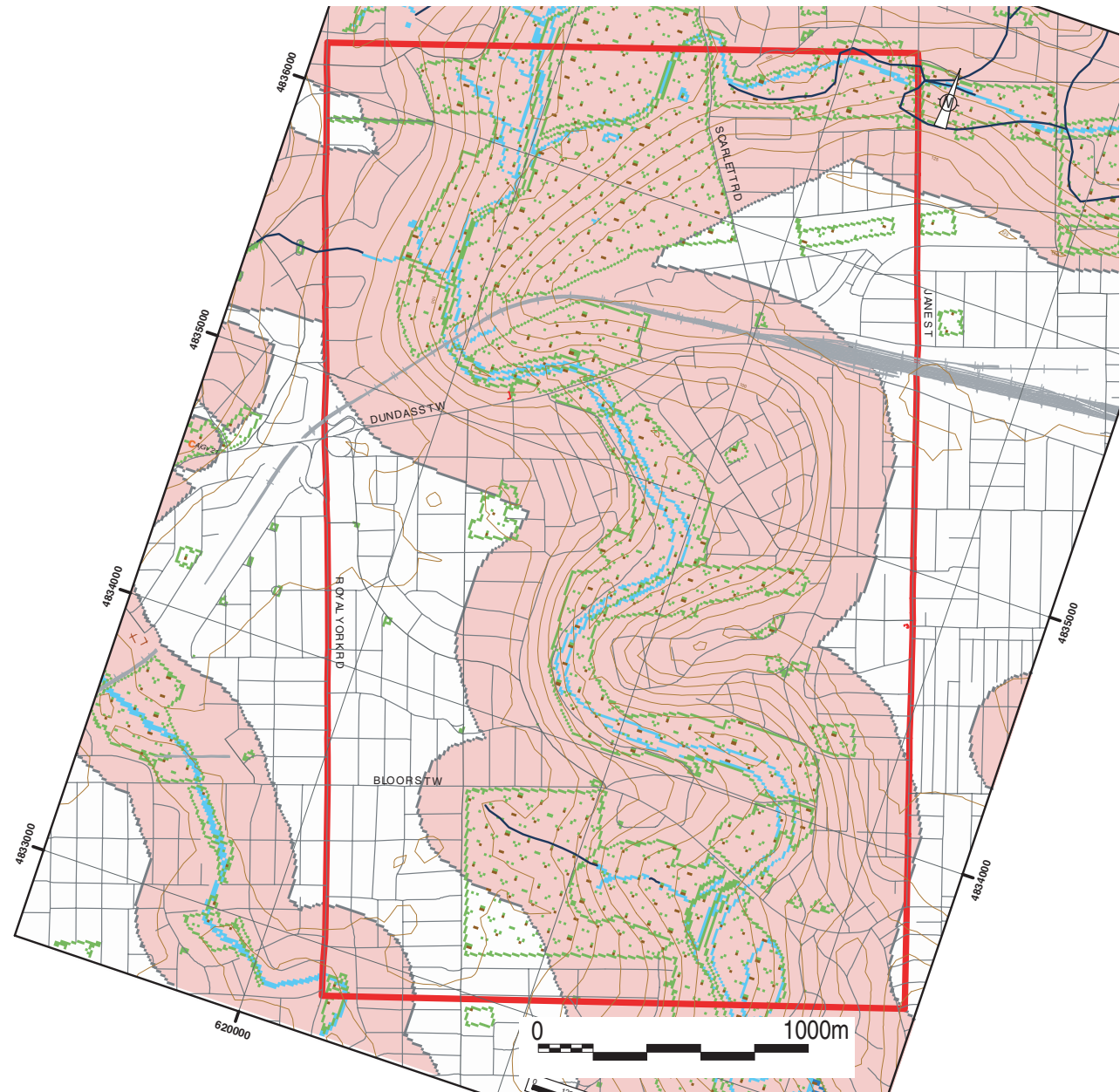


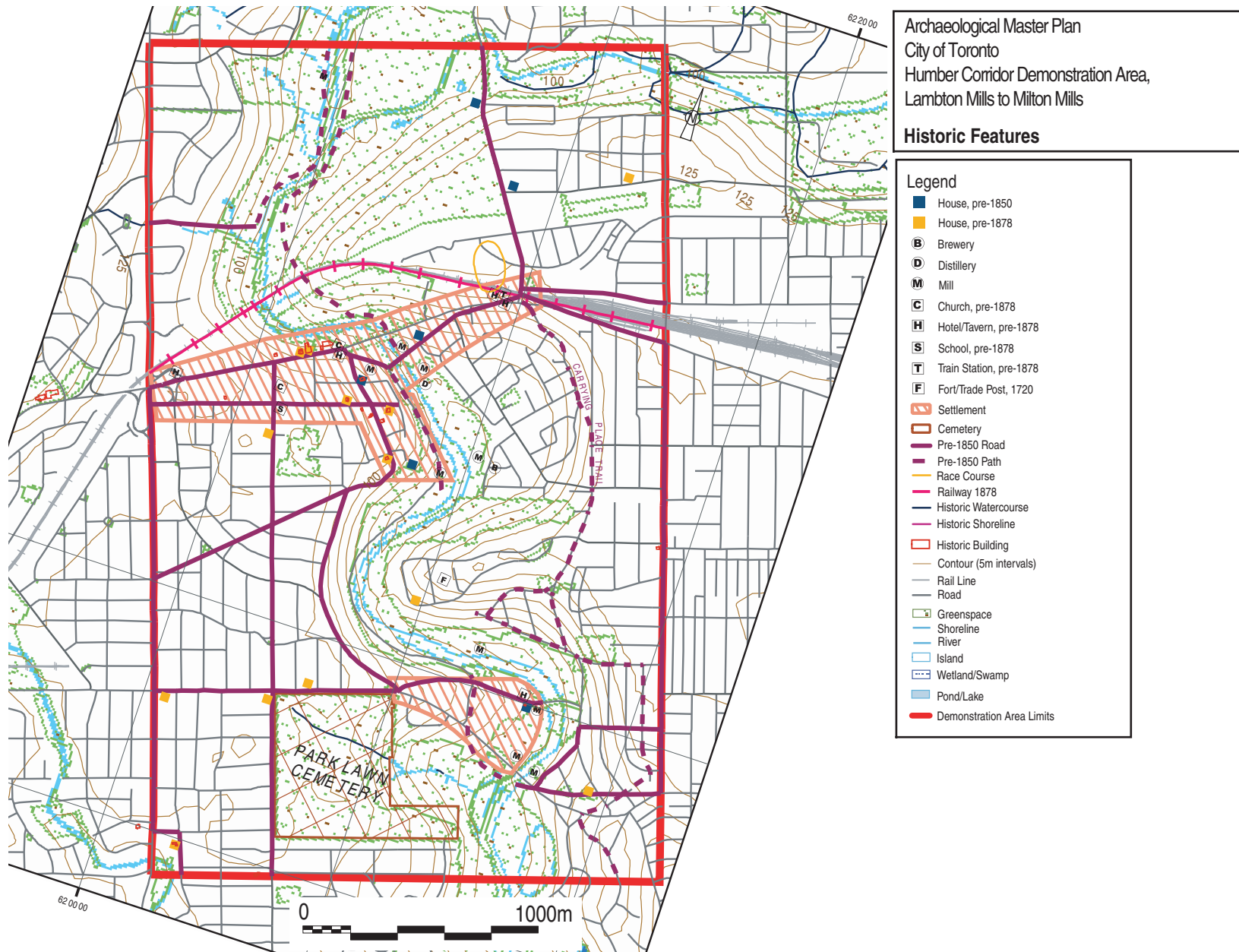
Archaeological Master Plan  
City of Toronto  
Humber Corridor Demonstration Area,  
Lambton Mills to Milton Mills

**Pre-contact Potential**

**Legend**

- Potential Zone
- Contour (5m intervals)
- Rail Line
- Road
- Greenspace
- Shoreline
- River
- Island
- Wetland/Swamp
- Pond/Lake
- Demonstration Area Limits





Archaeological Master Plan  
City of Toronto  
Humber Corridor Demonstration Area,  
Lambton Mills to Milton Mills

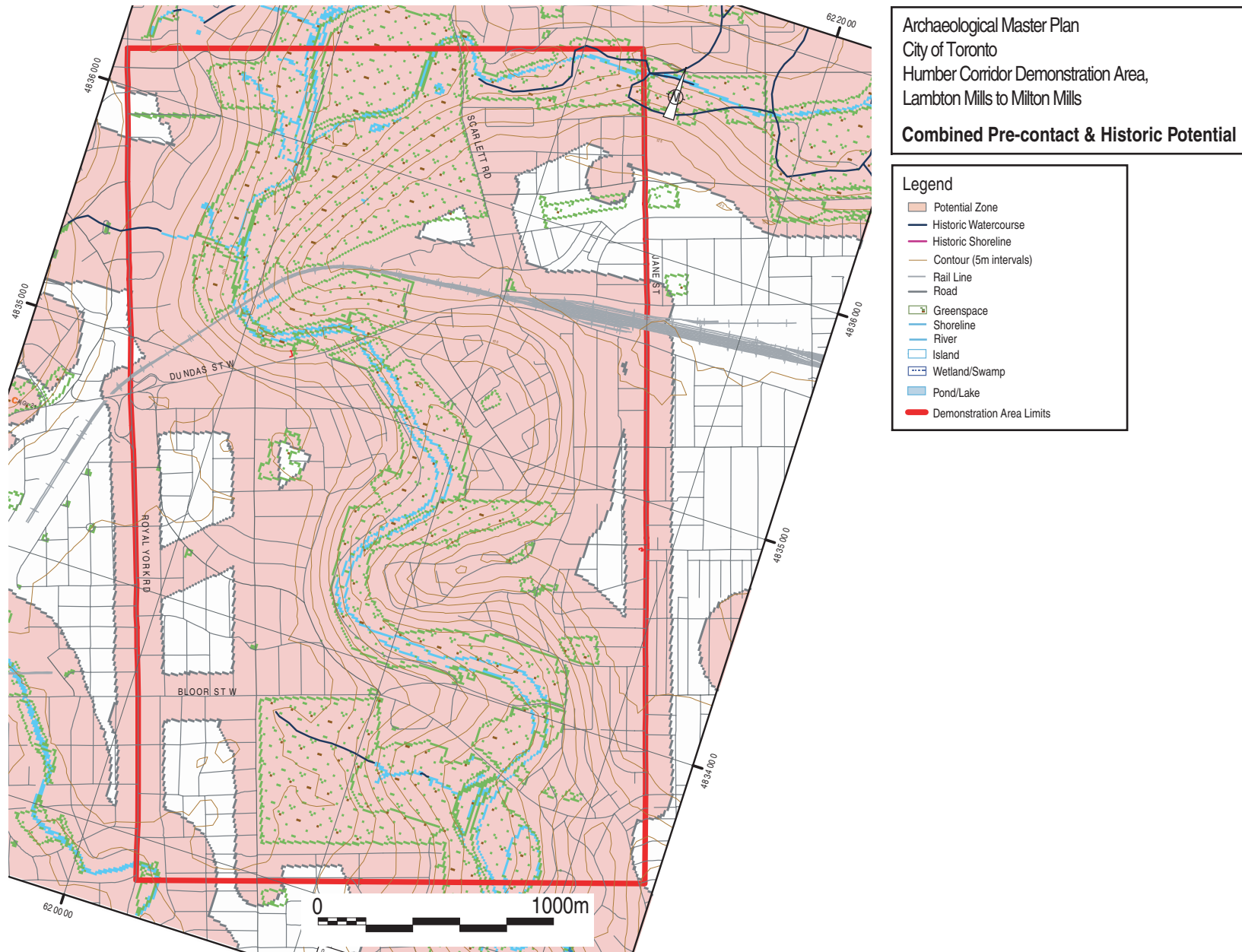
**Historic Potential**

**Legend**

- Potential Zone
- House, pre-1850
- House, pre-1878
- Brewery
- Distillery
- Mill
- Church, pre-1878
- Hotel/Tavern, pre-1878
- School, pre-1878
- Train Station, pre-1878
- Fort/Trade Post, 1720
- Settlement
- Cemetery
- Pre-1850 Road
- Pre-1850 Path
- Race Course
- Railway 1878
- Historic Watercourse
- Historic Shoreline
- Historic Building
- Contour (5m intervals)
- Rail Line
- Road
- Greenspace
- Shoreline
- River
- Island
- Wetland/Swamp
- Pond/Lake
- Demonstration Area Limits







## Next Steps

### *Modeling for Survival of Archaeological Deposits*

Having demonstrated how the composite archaeological potential layer will be formulated for all sections of the City, it remains to determine how the model will consider the potential for survival of archaeological deposits in various development contexts. The objective of this task is to distinguish between those lands upon which development activities have likely destroyed any archaeological resources and those lands that remain wholly or primarily undisturbed.

One of the conclusions to emerge from our review of other jurisdictions, is that most major urban centres approach this particular question on a case by case basis, not that there are not some understandings about the relationship between past development and the survival of archaeological deposits. Indeed, the potential for archaeological remains to have survived into the present varies among categories of land that have not yet been completely disturbed.

*Greenfield* lands, for example, are those where post-settlement disturbance of the grade of the site has been minimal, perhaps limited to agricultural clearance and cultivation, resulting in soil disturbance to a depth of no more than 10-20 centimetres. Such a category might include fencelines, hedge rows, parkland, road allowances, environmental set backs or ravine or hazard lands, school lands, cemeteries, hydro or other utility corridors, parkway belts and shore lands along drainage systems of lakes and ponds. Examples include High Park, Mount Pleasant Cemetery, farm land in northern Scarborough, Upper Canada College, Queen's Park, and the valleys of the Rouge, Don and Humber rivers. Residential or commercial lands, which

were developed early in the last century, might also reflect significant potential as was recently evidenced by the documentation of a Seneca burial on a residential lot on Baby Point. Other neighbourhoods, which might yet demonstrate pre-contact archaeological potential include those with houses backing onto substantial ravine systems such as those on Deerlick Creek, a tributary of the Don River, where the 7,000 year old site was documented by Mima Kapches of the Royal Ontario Museum.

*Brownfield* lands, on the other hand, are derelict, dysfunctional or under-used industrial and commercial properties where expansion or redevelopment is complicated by real or perceived environmental contamination (e.g., the West Donlands). Despite the complexity of developing these properties, they are often in desirable and strategic locations—in the heart of urban communities, on scenic waterfronts, or near urban cores, and most importantly, they may not have been completely disturbed during their development history. While usually at least partially disturbed, these properties have the advantage of having infrastructure in place and having a variety of potential uses that can contribute to urban intensification, community revitalization, economic development and jobs. They could be sites of new housing thereby relieving the pressure on greenfield lands. As a result, in Ontario, there has been growing interest among municipalities, owners, developers and environmentalists to find ways to clean up these sites and put them to new use.

Whatever the development history, it is recognized that some features associated with many historic archaeological sites are likely to have survived, as deeply buried deposits, in areas that have been developed and even re-developed.

Only where land has been completely disturbed to a depth of ten or more feet should it be concluded that there is no potential for survival and therefore no requirement to carry out an assessment. The key criterion in this case is whether the subject property was entirely excavated, or just the footprint(s) of former or existing buildings. In the case of linear infrastructure, the extent and depth of disturbance are similarly significant.

As Toronto is a coastal city, consideration must also be given to potential *marine* archaeological resources. The Toronto lakeshore is believed to have stabilized in its early nineteenth century position circa 5000 B.P., but this process likely began sometime after about 7,000 B.P. Prior to that time, and beginning with the draining of glacial Lake Iroquois at about 12,000 B.P., the level of Lake Ontario was considerably lower and the shoreline was far to the south of its present location. Coastal lands that would have attracted settlement prior to circa 5,000 B.P. are now submerged by 30 to 40 metres of water.

Toronto's lakeshore zone was a key feature in the early development of the city. Throughout much of this lakeshore zone, a succession of docks, wharfs, railway corridors, and industrial sites, which were constructed from the late eighteenth century onwards, were buried during later campaigns of filling in the effort to expand the capacity of the waterfront. Much of this lakefill zone now constitutes brownfield lands, and modelling for the potential survival of resources must proceed accordingly.

Other potential resources, such as shipwrecks, may be incorporated in the lake fill of the waterfront or may lie further off shore on the lake bottom. Such resources may also be found along the lower reaches of the Humber and Don

rivers. Humber Bay, for example, is the site of several shipwrecks that remain well-preserved because of the dark cold-water in which they rest.

### *Mapping the Survival of Archaeological Deposits*

Smaller municipalities in Ontario have approached this issue through the creation of an "integrity" layer, compiled on the basis of review of developed areas using their GIS-based built layers, recent aerial photography and visual survey. All areas that are identified as having been recently developed and extensively disturbed (since the 1950s) are then excluded from the composite potential layer. This is supportable since construction techniques in the latter half of the twentieth century often involved complete topsoil removal and grading of greenfield lands for industrial, commercial and residential development. Redevelopment in the city core, however, is often more likely to involve footprint excavation rather than complete property (re)grading. Both patterns of construction must be considered when assessing integrity. The final map shows a provisional version of the final potential model for the small demonstration area of the Humber River corridor having had the recently developed land removed from the potential layer.

In summary, it should be possible to map those areas of the City where development has resulted in total land disturbance, thereby excluding them from the composite archaeological potential layer. Detailed research into the history of development and construction techniques for each of the demonstration areas might aid in the resolution of such mapping. Whenever the development history of the property is in question, or it is uncertain whether archaeological deposits might have survived, a Stage 1 archaeological



Archaeological Master Plan  
City of Toronto  
Humber Corridor Demonstration Area,  
Lambton Mills to Milton Mills  
**Combined Pre-contact & Historic Potential  
Revised to Account for Integrity**

- Legend**
- Potential Zone
  - Historic Watercourse
  - Historic Shoreline
  - Contour (5m intervals)
  - Rail Line
  - Road
  - Greenspace
  - Shoreline
  - River
  - Island
  - Wetland/Swamp
  - Pond/Lake
  - Demonstration Area Limits

The integrity assessments presented on this map are provisional, as they are based only on a review of orthoimagery for the demonstration area.



assessment (background research) might be undertaken, a primary goal of which would be to ascertain whether there remained any potential for the survival of deposits on that particular property.

### *Broadening the Model*

The development of the site potential model, which began in the lower Humber Demonstration Area, will expand to include the valleys of the East and West Branches of the Humber and their associated tributaries from the mouth to Steeles Avenue, the northern boundary of the City.

The next two Demonstration Areas include the East Branch of the Don River and the Old Town, with the addition of Regent Park. South of Bloor Street/Danforth Avenue, the East Don River demonstration area stretches from Logan Avenue west to the built up neighbourhoods on the west side of the valley. It extends northward to York Mills Road, extending roughly between Don Mills Road and Victoria Park Avenue and includes the confluence of the East and West Branches, together with the lower part of Taylor Creek in the area between Overlea Boulevard and O'Connor Drive.

The Old Town-Regent Park Demonstration Area is bounded by the Bayview Extension on the east, the Gardiner Expressway on the south, and Victoria Street on the west. Its northern boundary is formed by Gerrard Street between Bayview and Parliament, and by Dundas Street East between Parliament and Church.

Work in both of these demonstration areas will be guided by our experience in the Humber, together with the development of thematic overviews, the refinement of the potential

model using environmental and cultural-historic criteria specific to each location, and the evaluation of landscape integrity, leading to the identification of areas of potential archaeological sensitivity.

Once draft maps have been produced for these areas, we will be consulting with City staff and residents to build and refine the knowledge base, and to ensure that proposed changes in land use in areas with archaeological potential are managed in a sound and responsible manner to ensure that any impacts to archaeological resources are adequately mitigated. This will typically require that land use changes in areas of potential must be preceded by the appropriate level of assessment, carried out by licensed archaeologists. Where significant archaeological remains are encountered, impacts must be appropriately mitigated.

While avoidance must always be considered the preferred option, there exists a range of potential mitigative strategies that may be employed following consideration of the character and significance of a particular archaeological resource, such as salvage excavation or archaeological monitoring. In these situations, the level of mitigation required will be thoroughly discussed between all relevant stakeholders, including the development proponent, City staff and the staff of the Heritage Operations Unit of the Ontario Ministry of Culture, in the same manner that is typical of other jurisdictions in the province. By such means, the City will have acquired the tools that will allow it to manage, preserve and interpret its 11,000 year history.



*Excavations under way on part of the mid-fifteenth century A.D. Parsons site, located overlooking Black Creek, a tributary of the Humber River. Many ancient settlement sites survive in the green spaces of Toronto, such as this hydro corridor, which is surrounded by modern apartment buildings.*

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