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DRAFT

**Stage 1 Archaeological Assessment
Harrington Dam and Embro Dam
Class Environmental Assessment
963656 Road 96 and 843970 Road 84
Township of Zorra
Part of Lot 30, Concession 2 and
Part of Lot 15, Concession 4
Geographic Township of West Zorra
Oxford County, Ontario**

Prepared for

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The Upper Thames River Conservation Authority

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The Ministry of Tourism, Culture and Sport

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EXECUTIVE SUMMARY

Under a contract awarded by Ecosystem Recovery Inc. in May 2015, Archaeological Research Associates Ltd. carried out a Stage 1 archaeological assessment of lands involved in the Class Environment Assessment of the Harrington Dam and the Embro Dam in the Township of Zorra, Oxford County, Ontario. The project is being conducted for the Upper Thames River Conservation Authority to evaluate alternatives for the two dams. This report documents the background research and fieldwork involved in the assessment, and presents conclusions and recommendations pertaining to archaeological concerns within the study area. The assessment was triggered by the requirements set out in the *Environmental Assessment Act*.

The Stage 1 assessment was conducted in May 2015 under licence #P007, PIF #P007-0690-2015. At the time of assessment, the Harrington Dam parcel comprised Harrington Pond, the Harrington Grist Mill, a gravel driveway, pedestrian bridges, maintained lawns, wooded areas and part of an agricultural field, whereas the Embro Dam parcel comprised Embro Pond, a pavilion, a culvert, maintained lawns and wooded areas. All field observations were made from accessible public lands; accordingly, no permissions were required for property access.

The results of the assessment indicate that the study area currently comprises a mixture of areas of archaeological potential and areas of no archaeological potential. Archaeological Research Associates Ltd. recommends that all areas of archaeological potential that could be impacted by the project be subject to a Stage 2 property assessment in advance of any construction impacts. The identified areas of no archaeological potential are not recommended for further assessment.

It is requested that this report be entered into the *Ontario Public Register of Archaeological Reports*, as provided for in Section 65.1 of the *Ontario Heritage Act*.

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GLOSSARY OF ABBREVIATIONS

ARA – Archaeological Research Associates Ltd.
 CHVI – Cultural Heritage Value or Interest
 MTC – (Former) Ministry of Tourism and Culture
 MTCS – Ministry of Tourism, Culture and Sport
 PIF – Project Information Form
 S&Gs – Standards and Guidelines for Consultant Archaeologists
 UTRCA – Upper Thames River Conservation Authority

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1.0 PROJECT CONTEXT

1.1 Development Context

Under a contract awarded by Ecosystem Recovery Inc. in May 2015, ARA carried out a Stage 1 archaeological assessment of lands involved in the Class Environment Assessment of the Harrington Dam and the Embro Dam in the Township of Zorra, Oxford County, Ontario. The project is being conducted for the UTRCA to evaluate alternatives for the two dams. This report documents the background research and fieldwork involved in the assessment, and presents conclusions and recommendations pertaining to archaeological concerns within the study area. The assessment was triggered by the requirements set out in the *Environmental Assessment Act*.

The subject study area consists of an irregular-shaped 5.66 ha parcel of land at the Harrington Dam (963656 Road 96) and a rectilinear 3.14 ha parcel of land at the Embro Dam (843970 Road 84), both located in the western part of the Township of Zorra (see Map 1–Map 2). The Harrington Dam parcel is generally bounded by Road 96 (County Road 28) to the north, Victoria Street to the east, agricultural lands to the south and a maintained lawn to west, whereas the Embro Dam parcel is generally bounded by Road 84 (County Road 16) to the north, agricultural lands to the east and southeast and the remainder of the Embro Pond Conservation Area to the west. At the time of assessment, the Harrington Dam parcel comprised Harrington Pond, the Harrington Grist Mill, a gravel driveway, pedestrian bridges, maintained lawns, wooded areas and part of an agricultural field, whereas the Embro Dam parcel comprised Embro Pond, a pavilion, a culvert, maintained lawns and wooded areas. In legal terms, the Harrington Dam parcel falls on part of Lot 30, Concession 2 in the Geographic Township of West Zorra, whereas the Embro Dam parcel falls on part of Lot 15, Concession 4 in the Geographic Township of West Zorra.

The Stage 1 assessment was conducted in May 2015 under licence #P007, PIF #P007-0690-2015. All field observations were made from accessible public lands; accordingly, no permissions were required for property access. In compliance with the objectives set out in Section 1.0 of the *S&Gs* (MTC 2011:13–23), this investigation was carried out in order to:

- Provide information concerning the study area’s geography, history and current land condition;
- Determine the presence of known archaeological sites in the study area;
- Present strategies to mitigate project impacts to such sites, if they are located;
- Evaluate in detail the study area’s archaeological potential; and
- Recommend appropriate strategies for Stage 2 archaeological assessment, if some or all of the study area has archaeological potential.

The assessment was conducted in accordance with the provisions of the *Ontario Heritage Act*, R.S.O. 1990, c. O.18. All notes, photographs and records pertaining to the project are currently housed in ARA’s processing facility located at 154 Otonabee Drive, Kitchener. Subsequent long-term storage will occur at ARA’s secure storage facility located in Kitchener.

The MTCS is asked to review the results and recommendations presented in this report and express their satisfaction with the fieldwork and reporting through a *Letter of Review and Entry into the Ontario Public Register of Archaeological Reports*.

1.2 Historical Context

After a century of archaeological work in southern Ontario, scholarly understanding of the historic usage of lands in Oxford County has become very well-developed. What follows is a detailed summary of the archaeological cultures that have settled in the vicinity of the study area over the past 11,000 years; from the earliest Palaeo-Indian hunters to the most recent Euro-Canadian farmers.

1.2.1 Pre-Contact

1.2.1.1 Palaeo-Indian Period

The first documented evidence of occupation in southern Ontario dates to around 9000 BC, after the retreat of the Wisconsinan glaciers and the formation of Lake Algonquin, Early Lake Erie and Early Lake Ontario (Karrow and Warner 1990; Jackson et al. 2000:416–419). At that time (or perhaps even earlier) small Palaeo-Indian bands moved into the region, leading mobile lives based on the communal hunting of large game and the collection of plant-based food resources (Ellis and Deller 1990:38; MCL 1997:34). Current understanding suggests that Palaeo-Indian peoples ranged over very wide territories in order to live sustainably in a post-glacial environment with low biotic productivity. This environment changed considerably during this period, developing from a sub-arctic spruce forest to a boreal forest dominated by pine (Ellis and Deller 1990:52–54, 60).

An Early Palaeo-Indian period (ca. 9000–8400 BC) and a Late Palaeo-Indian period (ca. 8400–7500 BC) are discernable amongst the lithic spear and dart points. Early points are characterized by grooves or ‘flutes’ near the base while the later examples lack such fluting. All types would have been used to hunt caribou and other ‘big game’. Archaeological sites from both time-periods typically served as small campsites or ‘way-stations’ (occasionally with hearths or fire-pits), where tool manufacture/maintenance and hide processing would have taken place. For the most part, these sites tend to be small (less than 200 sq. m) and ephemeral (Ellis and Deller 1990:51–52, 60–62). Many parts of the Palaeo-Indian lifeway remain unknown.

1.2.1.2 Archaic Period

Beginning in the early 8th millennium BC, the biotic productivity of the environment began to increase as the climate warmed and southern Ontario was colonized by deciduous forests. This caused the fauna of the area to change as well, and ancient peoples developed new forms of tools and alternate hunting practices to better exploit both animal and plant-based food sources. These new archaeological cultures are referred to as ‘Archaic’. Thousands of years of gradual change in stone tool styles allows for the recognition of Early (7500–6000 BC), Middle (6000–2500 BC) and Late Archaic periods (2500–900 BC) (MCL 1997:34).

The Early and Middle Archaic periods are characterized by substantial increases in the number of archaeological sites and a growing diversity amongst stone tool types and exploited raw materials. Notable changes in Archaic assemblages include a shift to notched or stemmed projectile points, a growing prominence of net-sinkers (notched pebbles) and an increased reliance on artifacts like bone fish hooks and harpoons. In addition to these smaller items, archaeologists also begin to find evidence of more massive wood working tools such as ground stone axes and chisels (Ellis et al. 1990:65–67).

Towards the end of the Middle Archaic (ca. 3500 BC), the archaeological evidence suggests that populations were 1) increasing in size, 2) paying more attention to ritual activities, 3) engaging in long distance exchange (e.g. in items such as copper) and 4) becoming less mobile (Ellis et al. 1990:93; MCL 1997:34). Late Archaic peoples typically made use of shoreline/riverine sites located in rich environmental zones during the spring, summer and early fall, and moved further inland to deer hunting and fruit-gathering sites during late fall and winter (Ellis et al. 1990:114).

During the Late Archaic these developments continued, and new types of projectile points appeared along with the first true cemeteries. Excavations of burials from this time-frame indicate that human remains were often cremated and interred with numerous grave goods, including items such as projectile points, stone tools, red ochre, materials for fire-making kits, copper beads, bracelets, beaver incisors, and bear maxilla masks (Ellis et al. 1990:115–117). Interestingly, these true cemeteries may have been established in an attempt to solidify territorial claims, linking a given band or collection of bands to a specific geographic location.

From the tools unearthed at Archaic period sites it is clear that these people had an encyclopaedic understanding of the environment that they inhabited. The number and density of the sites that have been found suggest that the environment was exploited in a successful and sustainable way over a considerable period of time. The success of Archaic lifeways is attested to by clear evidence of steady population increases over time. Eventually, these increases set the stage for the final period of Pre-Contact occupation—the Woodland Period (Ellis et al. 1990:120).

1.2.1.3 Early and Middle Woodland Periods

The beginning of the Woodland period is primarily distinguished from the earlier Archaic by the widespread appearance of pottery. Although this difference stands out prominently amongst the archaeological remains, it is widely believed that hunting and gathering remained the primary subsistence strategy throughout the Early Woodland period (900–400 BC) and well into the Middle Woodland period (400 BC–AD 600). In addition to adopting ceramics, communities also grew in size during this period and participated in developed and widespread trade relations (Spence et al. 1990; MCL 1997:34).

The first peoples to adopt ceramics in the vicinity of the study area are associated with the Meadowood archaeological culture. This culture is characterized by distinctive Meadowood preforms, side-notched Meadowood points and Vinette 1 ceramics (thick and crude handmade pottery with cord-marked decoration). Meadowood peoples are believed to have been organized in bands of roughly 35 people, and some of the best documented sites are fall camps geared towards the hunting of deer and the gathering of nuts (Spence et al. 1990:128–137).

Ceramic traditions continued to develop during the subsequent Middle Woodland period, and three distinct archaeological cultures emerged in southern Ontario: ‘Point Peninsula’ north and northeast of Lake Ontario, ‘Couture’ near Lake St. Clair and ‘Saugeen’ in the rest of southwestern Ontario (see Map 3). These cultures all shared a similar method of decorating pottery, using either dentate or pseudo-scallop shell stamp impressions, but they differed in terms of preferred vessel shape, zones of decoration and surface finish (Spence et al. 1990:142–43).

The local Saugeen complex, which appears to have extended from Lake Huron to as far east as the Humber River and the Niagara Peninsula, is characterized by stamped pottery, distinctive projectile points, cobble spall scrapers and a lifeway geared towards the exploitation of seasonally-available resources such as game, nuts and fish (Spence et al. 1990:147–156). Although relatively distant from the study area, the Donaldson site along the Saugeen River may be representative of a typical Saugeen settlement; it was occupied in the spring by multiple bands that came to exploit spawning fish and bury members who had died elsewhere during the year (Finlayson 1977:563–578). The archaeological remains from this site include post-holes, hearth pits, garbage-dumps (middens), cemeteries and even a few identifiable rectangular structures (Finlayson 1977:234–514).

During the Middle to Late Woodland transition (AD 600–900), the first rudimentary evidence of maize (corn) horticulture appears in southern Ontario. Based on the available archaeological evidence, which comes primarily from the vicinity of the Grand and Credit Rivers, this pivotal development was not particularly widespread (Fox 1990a:171, Figure 6.1). The adoption of maize horticulture instead appears to be linked to the emergence of the Princess Point complex, whose material remains include decorated ceramics (combining cord roughening, impressed lines and punctuate designs), triangular projectile points, T-based drills, steatite and ceramic pipes, and ground stone chisels and adzes (Fox 1990a:174–188).

The distinctive artifacts and horticultural practices of Princess Point peoples have led to the suggestion that they were directly ancestral to the later Iroquoian-speaking populations of southern Ontario (Warrick 2000:427). These artifacts have not been found in the vicinity of the study area, however, suggesting that a gradual transition between Saugeen and Early Iroquoian lifeways took place here instead.

1.2.1.4 Late Woodland Period

In the Late Woodland period (ca. AD 900–1600), the practice of maize horticulture spread beyond the western end of Lake Ontario, allowing for population increases which in turn led to larger settlement sizes, higher settlement density and increased social complexity amongst the peoples involved. These developments are believed to be linked to the spread of Iroquoian-speaking populations in the area; ancestors of the historically-documented Huron, Neutral and Haudenosaunee Nations. Other parts of southern Ontario, including the Georgian Bay littoral, the Bruce Peninsula and the vicinity of Lake St. Clair, were inhabited by Algonkian-speaking peoples, who were much less agriculturally-oriented.

Late Woodland archaeological remains from the greater vicinity of the study area show three major stages of cultural development prior to European contact: ‘Early Iroquoian’, ‘Middle Iroquoian’ and ‘Late Iroquoian’ (Dodd et al. 1990; Lennox and Fitzgerald 1990; Williamson 1990).

Early Iroquoians (AD 900–1300) lived in small villages (ca. 0.4 ha) of between 75 and 200 people, and each settlement consisted of four or five longhouses up to 15 m in length. The houses contained central hearths and pits for storing maize (which made up 20–30% of their diet), and the people produced distinctive pottery with decorative incised rims (Warrick 2000:434–438). The best documented Early Iroquoian culture in the local area is the Glen Meyer complex, which is characterized by well-made and thin-walled pottery, ceramic pipes, gaming discs, and a variety of stone, bone, shell and copper artifacts (Williamson 1990:295–304).

Over the next century (AD 1300–1400), Middle Iroquoian culture became dominant in southern Ontario, and distinct ‘Uren’ and ‘Middleport’ stages of development have been identified. Both houses and villages dramatically increased in size during this time: longhouses grew to as much as 33 m in length, settlements expanded to 1.2 ha in size and village populations swelled to as many as 600 people. Middle Iroquoian villages were also better planned, suggesting emerging clan organization, and most seem to have been occupied for perhaps 30 years prior to abandonment (Dodd et al. 1990:356–359; Warrick 2000:439–446).

During the Late Iroquoian period (AD 1400–1600), the phase just prior to widespread European contact, it becomes possible to differentiate between the archaeologically-represented groups that would become the Huron and the Neutral Nations. The study area itself lies within the territorial boundaries of the Pre-Contact Neutral Nation, documented in lands as far west as Chatham and as far east as New York State.

The Neutral Nation is well represented archaeologically: typical artifacts include ceramic vessels and pipes, lithic chipped stone tools, ground stone tools, worked bone, antler and teeth, and exotic goods obtained through trade with other Aboriginal (and later European) groups (Lennox and Fitzgerald 1990:411–437). The population growth so characteristic of earlier Middleport times appears to have slowed considerably during the Late Iroquoian period, and the Pre-Contact Neutral population likely stabilized at around 20,000 by the early 16th century (Warrick 2000:446).

Pre-Contact Neutral villages were much larger than Middleport villages, with average sizes in the neighbourhood of 1.7 ha. Exceptional examples of these could reach 5 ha in size, containing longhouses over 100 m in length and housing 2,500 individuals. This seemingly rapid settlement growth is thought to have been linked to Middleport ‘baby boomers’ starting their own families and needing additional living space (Warrick 2000:446–449).

It has been suggested that the size of these villages, along with the necessary croplands to sustain them, may have had some enduring impacts on the landscapes that surrounded them. In particular, there has been a correlation postulated between Pre-Contact era corn fields and modern stands of white pine (Janusas 1987:69–70, Figure 7). Aside from these villages, the

Pre-Contact Neutral also made use of hamlets, agricultural field cabins, specialized camps (e.g., fishing camps) and cemeteries (MCL 1997:35; Warrick 2000:449).

For the most part, Pre-Contact Neutral archaeological sites occur in isolated clusters defined by some sort of geographic region, usually within a watershed or another well-defined topographic feature. It has been suggested that these clusters represent distinct tribal units, which may have been organized as a larger confederacy akin to the historic Five Nations Iroquois (Lennox and Fitzgerald 1990:410). Nineteen main clusters of villages have been identified, the closest manifestation of which is known simply as the ‘London Cluster’. This cluster, which includes the Lawson, Windermere, Ronto, Smallman, Black Kat and Mathews sites, appears to have flourished primarily in the 15th century (Lennox and Fitzgerald 1990:Table 13.1).

Late Pre-Contact Neutral sites are largely absent in this part of southern Ontario, indicative of substantial shifts in local settlement patterns (see Map 4). By the early 16th century there was a definite contraction of earlier territories, perhaps linked to the consolidation of tribal units, and by AD 1534 the Neutral appear to have moved east of the Grand River (Warrick 2000:454). Although scholars once thought that this shift was linked to a desire for better access to European goods, the fact that the fur trade did not begin for several decades has led to the recognition of an alternate reason—war. Later historical sources suggest that the Neutral were engaged in hostilities with the Fire Nation (possibly the Mascouten), an Algonkian-speaking people to the southwest known archaeologically as the Western Basin Tradition. Remains from the frontier zone include strongly fortified villages and earthworks, clearly illustrating a defensive mindset (Lennox and Fitzgerald 1990:437–438; Warrick 2000:449–451).

The end of the Late Woodland period can be conveniently linked to the arrival and spread of European fur traders in southern Ontario, and a terminus of AD 1600 effectively serves to demarcate some substantial changes in Aboriginal material culture. Prior to the establishment of the fur trade, items of European manufacture are extremely rare on Pre-Contact Neutral sites, save for small quantities of reused metal scrap. With the onset of the fur trade ca. AD 1580, European trade goods appear in ever-increasing numbers, and glass beads, copper kettles, iron axes and iron knives have all been found during excavations (Lennox and Fitzgerald 1990:425–432).

1.2.2 Early Contact

1.2.2.1 European Explorers

One of the first Europeans to venture into what would become Ontario was Étienne Brûlé, who was sent by Samuel de Champlain in Summer 1610 to accomplish three goals: 1) to consolidate an emerging friendship between the French and the First Nations, 2) to learn their languages, and 3) to better understand their unfamiliar customs. Other Europeans would subsequently be sent by the French to train as interpreters. These men became *coureurs de bois*, “living Indian-style ... on the margins of French society” (Gervais 2004:182). Such ‘woodsmen’ played an essential role in all later communications with the First Nations.

Champlain himself made two trips to Ontario: in 1613, he journeyed up the Ottawa River searching for the North Sea, and in 1615/1616, he travelled up the Mattawa River and descended to Lake Nipissing and Lake Huron to explore Huronia (Gervais 2004:182–185). He learned about many First Nations groups during his travels, including prominent Iroquoian-speaking peoples such as the Wendat (Huron), Petun (Tobacco) and ‘*la nation neutre*’ (the Neutrals), and a variety of Algonkian-speaking Anishinabeg bands.

Champlain’s *Carte de la Nouvelle France* (1632) encapsulates his accumulated knowledge of the area (see Map 5). Although the distribution of the Great Lakes is clearly an abstraction in this early map, important details concerning the terminal Late Woodland occupation of southern Ontario are discernable. Numerous Aboriginal groups are identified throughout the area, for example, and prolific Neutral village sites can be seen ‘west’ and ‘south’ of *Lac St. Louis* (Lake Ontario).

1.2.2.2 *Trading Contacts and Conflict*

The first half of the 17th century saw a marked increase in trading contacts between the First Nations and European colonists, especially in southern Ontario. Archaeologically, these burgeoning relations are clearly manifested in the widespread appearance of items of European manufacture by AD 1630, including artifacts such as red and turquoise glass beads, scissors, drinking glasses, keys, coins, firearms, ladles and medallions. During this time, many artifacts such as projectile points and scrapers began to be manufactured from brass, copper and iron scrap, and some European-made implements completely replaced more traditional tools (Lennox and Fitzgerald 1990:432–437).

Nicholas Sanson’s *Le Canada, ou Nouvelle France* (1656) provides an excellent representation of southern Ontario at this time of heightened contact. Here the lands of the Neutral Nation are clearly labelled with the French rendering of their Huron name, ‘*Attawandaron*’ (see Map 6). Unfortunately, this increased contact had the disastrous consequence of introducing European diseases into First Nations communities. These progressed from localized outbreaks to much more widespread epidemics (MCL 1997:35; Warrick 2000:457). Archaeological evidence of disease-related population reduction appears in the form of reduced longhouse sizes, the growth of multi-ossuary cemeteries and the loss of traditional craft knowledge and production skills (Lennox and Fitzgerald 1990:432–433).

1.2.2.3 *Five Nations Invasion*

The importance of European trading contacts eventually led to increasing factionalism and tension between the First Nations, and different groups began to vie for control of the lucrative fur trade (itself a subject of competition between the French and British). In what would become Ontario, the Huron, the Petun, and their Anishinabeg trading partners allied themselves with the French. In what would become New York, the League of the Haudenosaunee (the Five Nations Iroquois at that time) allied themselves with the British. The latter alliance may have stemmed from Champlain’s involvement in Anishinabeg and Huron attacks against Iroquoian strongholds in 1609 and 1615, which engendered enmity against the French (Lajeunesse 1960:xxix). Interposed between the belligerents, the members of the Neutral Nation refused to become involved in the conflict.

Numerous military engagements occurred between the two opposing groups during the first half of the 17th century, as competition over territories rich in fur-bearing animals increased. These tensions boiled over in the middle of the 17th century, leading to full-scale regional warfare (MNCFN 2010:5). In a situation likely exacerbated by epidemics brought by the Europeans and the decimation of their population, a party of roughly 1,000 Mohawk and Seneca warriors set upon Huronia in March 1649. The Iroquois desired to remove the Huron Nation altogether, as they were a significant obstacle to controlling the northern fur trade (Hunt 1940:91–92).

The Huron met their defeat in towns such as Saint Ignace and Saint Louis (Sainte-Marie was abandoned and burned by the Jesuits in the spring of 1649). Those that were not killed were either adopted in the Five Nations as captives or dispersed to neighbouring regions and groups (Ramsden 1990:384). The Petun shared a similar fate, and the remnants of the affected groups formed new communities outside of the disputed area, settling in Quebec (Wendake), in the area of Michilimackinac and near Lake St. Clair (where they were known as the Wyandot).

Anishinabeg populations from southern Ontario, including the Ojibway, Odawa and Pottawatomi, fled westward to escape the Iroquois (Schmalz 1977:2). The Neutral were targeted in 1650 and 1651, and the Iroquois took multiple frontier villages (one with over 1,600 men) and numerous captives (Coyne 1895:18). The advance of the Iroquois led to demise of the Neutral Nation as a distinct cultural entity (Lennox and Fitzgerald 1990:456).

For the next four decades, southern Ontario remained an underpopulated wilderness (Coyne 1895:20). This rich hunting ground was exploited by the Haudenosaunee to secure furs for trade with the Dutch and the English, and settlements were established along the north shore of Lake Ontario at places like Teiaiagon on the Humber River and Ganatswekwyagon on the Rouge River (Williamson 2008:51). The Haudenosaunee are also known to have traded with the northern Anishinabeg during the second half of the 17th century (Smith 1987:19).

Due to their mutually violent history, the Haudenosaunee did not permit French explorers and missionaries to travel directly into southern Ontario for much of the 17th century. Instead, they had to journey up the Ottawa River to Lake Nipissing and then paddle down the French River into Georgian Bay (Lajeunesse 1960:xxix). New France was consequently slow to develop in southern Ontario, at least until the fall of several Iroquoian strongholds in 1666 and the opening of the St. Lawrence and Lake Ontario route to the interior (Lajeunesse 1960:xxxii).

In 1669, the Haudenosaunee allowed an expedition of 21 men to pass through their territory. This expedition, which included François Dollier de Casson (a Sulpician priest) and René Bréhant de Galinée, managed to reach and explore the Grand River, which they named *le Rapide* after the swiftness of its current. These men descended the Grand to reach Lake Erie, and they wintered at the future site of Port Dover (Coyne 1895:21). Galinée's map is one of the earliest documented representations of the interior of southwestern Ontario (see Map 7). In it, he notes the locations of several former Neutral villages at the western end of Lake Ontario, likely consisting of abandoned ruins.

1.2.2.4 Anishinabeg Influx

The fortunes of the Five Nations began to change in the 1690s, as disease and casualties from battles with the French took a toll on the formerly-robust group (Smith 1987:19). On July 19, 1701, the Haudenosaunee ceded lands in southern Ontario to King William III with the provision that they could still hunt freely in their former territory (Coyne 1895:28). However, judging from the land cessions to follow, this agreement appears to have lacked any sort of binding formality.

According to the traditions of the Algonkian-speaking Anishinabeg, Ojibway, Odawa and Potawatomi bands began to mount an organized counter-offensive against the Iroquois in the late 17th century (MNCFN 2010:5). Around the turn of the 18th century, the Anishinabeg of the Great Lakes expanded into Haudenosaunee lands, and attempted to trade directly with the French and the English (Smith 1987:19). This led to a series of battles between the opposing groups, in which the Anishinabeg were more successful (Coyne 1895:28).

Haudenosaunee populations subsequently withdrew into New York State, and Anishinabeg bands established themselves in southern Ontario. Many of these bands were mistakenly grouped together by the immigrating Europeans under the generalized designations of ‘Chippewa/Ojibway’ and ‘Mississauga’. ‘Mississauga’, for example, quickly became a term applied to many Algonkian-speaking groups around Lake Erie and Lake Ontario (Smith 1987:19), despite the fact that the Mississaugas were but one part of the larger Ojibway Nation (MNCFN 2010:3).

The Anishinabeg are known to have taken advantage of the competition between the English and French over the fur trade, and they were consequently well-supplied with European goods. The Mississaugas, for example, traded primarily with the French and received “everything from buttons, shirts, ribbons to combs, knives, looking glasses, and axes” (Smith 1987:22). The British, on the other hand, were well-rooted in New York State and enjoyed mutually beneficial relations with the Haudenosaunee.

As part of this influx, many members of the Algonkian-speaking Ojibway, Potawatomi and Odawa First Nations came back to Lake Huron littoral. Collectively, these people came to be known as the Chippewas of Saugeen Ojibway Territory (also Saugeen Ojibway Nation). These Algonkian-speakers established themselves in the Bruce Peninsula, all of Bruce and Grey Counties, and parts of Huron, Dufferin, Wellington, and Simcoe Counties (Schmalz 1977:233).

Throughout the 1700s and into the 1800s, Anishinabeg populations hunted, fished, gardened and camped along the rivers, floodplains and forests of southern Ontario (Warrick 2005:2). However, their ‘footprint’ was exceedingly light, and associated archaeological sites are both rare and difficult to detect. Around 1720, French traders are known to have established a trading post at the western end of Lake Ontario, and the Mississaugas were actively involved in the regional fur trade (MNCFN 2010:09). In September 1750, construction began on another trading post in the vicinity of present-day Toronto, which was called Fort Rouillé, or Fort Toronto. Fort Rouillé was completed in Spring 1751 and served as an outstation for the larger Fort Niagara until it was abandoned and burned in 1759 (Williamson 2008:56).

Historical maps from the 18th century shed valuable light on the cultural landscape of what would become southern Ontario. H. Popple's *A Map of the British Empire in America* (1733), for example, shows the Neutral and Huron/Petun Nations destroyed by the Haudenosaunee ca. 1650, and also demonstrates the ephemeral environmental impact of the mobile Anishinabeg (see Map 8). This map also includes an early rendering of the Thames River, although its full extent was clearly not yet understood.

1.2.2.5 *Relations and Ambitions*

The late 17th and early 18th centuries bore witness to the continued growth and spread of the fur trade across all of what would become the Province of Ontario. The French, for example, established and maintained trading posts along the Upper Great Lakes, offering enticements to attract fur traders from the First Nations. Even further north, Britain's Hudson Bay Company dominated the fur trade. Violence was common between the two parties, and peace was only achieved with the Treaty of Utrecht in 1713 (Ray 2015). Developments such as these resulted in an ever-increasing level of contact between European traders and local Aboriginal communities.

As the number of European men living in Ontario increased, so too did the frequency of their relations with Aboriginal women. Male employees and former employees of French and British companies began to establish families with these women, a process which resulted in the ethnogenesis of a distinct Aboriginal people: the Métis. Comprised of the descendants of those born from such relations (and subsequent intermarriage), the Métis emerged as a distinct Aboriginal people during the 1700s (MNO 2015).

Métis settlements developed along freighting waterways and watersheds, and were tightly linked to the spread and growth of the fur trade. These settlements were part of larger regional communities, connected by "the highly mobile lifestyle of the Métis, the fur trade network, seasonal rounds, extensive kinship connections and a shared collective history and identity" (MNO 2015).

In 1754, hostilities over trade and the territorial ambitions of the French and the British led to the Seven Years' War (often called the French and Indian War in North America), in which many Anishinabeg bands fought on behalf of the French. After the French surrender in 1760, these bands adapted their trading relationships accordingly, and formed a new alliance with the British (Smith 1987:22). In addition to cementing British control over the Province of Quebec, the Crown's victory over the French also proved pivotal in catalyzing the Euro-Canadian settlement process. The resulting population influx caused the demographics of many areas to change considerably.

R. Sayer and J. Bennett's *General Map of the Middle British Colonies in America* (1776) provides an excellent view of the ethnic landscape of southern Ontario prior to the widespread arrival of European settlers. This map clearly depicts the Thames River ('the Long River without Falls'), the Grand River ('the Great River'), the territory of the Ojibway and the virtually untouched lands of southwestern Ontario (see Map 9).

1.2.3 *The Euro-Canadian Era*

1.2.3.1 *British Colonialism*

With the establishment of absolute British control came a new era of land acquisition and organized settlement. In the *Royal Proclamation* of 1763, which followed the Treaty of Paris, the British government recognized the title of the First Nations to the land they occupied. In essence, the ‘right of soil’ had to be purchased by the Crown prior to European settlement (Lajeunesse 1960:cix). Numerous treaties and land surrenders were accordingly arranged by the Crown, and great swaths of territory were acquired from the Ojibway and other First Nations. These first purchases established a pattern “for the subsequent extinction of Indian title” (Gentilcore and Head 1984:78).

The first land purchases in Ontario took place along the shores of Lake Ontario and Lake Erie, as well as in the immediate ‘back country’. Such acquisitions began in August 1764, when a 3.0 km strip of land on the west side of the Niagara River was surrendered by the Seneca First Nation (Surtees 1994:97; NRC 2010). Although many similar territories were purchased by the Crown in subsequent years, it was only with the conclusion of the American Revolutionary War (1775–1783) that the British began to feel a pressing need for additional land. In the aftermath of the conflict, waves of United Empire Loyalists came to settle in the Province of Quebec, driving the Crown to seek out property for those who had been displaced. This influx had the devastating side effect of sparking the slow death of the fur trade, which was a primary source of income for many First Nations groups.

By the mid-1780s, the British recognized the need to 1) secure a military communication route from Lake Ontario to Lake Huron other than the vulnerable passage through Niagara, Lake Erie and Lake St. Clair; 2) acquire additional land for the United Empire Loyalists; and 3) modify the administrative structure of the Province of Quebec to accommodate future growth. The first two concerns were addressed through the negotiation of numerous ‘land surrenders’ with Anishinabeg groups north and west of Lake Ontario, and the third concern was mitigated by the establishment of the first administrative districts in the Province of Quebec.

On July 24, 1788, Sir Guy Carleton, Baron of Dorchester and Governor-General of British North America, divided the Province of Quebec into the administrative districts of Hesse, Nassau, Mecklenburg and Lunenburg (AO 2011). The vicinity of the study area fell within the Hesse District at this time, which consisted of a massive tract of land encompassing all of the western and inland parts of the province extending due north from the tip of Long Point on Lake Erie in the east. According to early historians, “this division was purely conventional and nominal, as the country was sparsely inhabited ... the necessity for minute and accurate boundary lines had not become pressing” (Mulvany et al. 1885:13).

Further change came in December 1791, when the Parliament of Great Britain’s *Constitutional Act* created the Provinces of Upper Canada and Lower Canada from the former Province of Quebec. Colonel John Graves Simcoe was appointed as Lieutenant-Governor of Upper Canada, and he became responsible for governing the new province, directing its settlement and establishing a constitutional government modelled after that of Britain (Coyne 1895:33).

Simcoe initiated several schemes to populate and protect the newly-created province, employing a settlement strategy that relied on the creation of shoreline communities with effective transportation links between them. These communities, inevitably, would be composed of lands obtained from the First Nations, and many more purchases were subsequently arranged. The eastern and southern parts of Oxford County, for example, were acquired on December 7, 1792 as part of the second ‘Between the Lakes Purchase’, conducted to enhance Governor Haldimand’s original purchase from 1784. In this transaction, the Mississaugas received goods worth 1,180.74 Quebec pounds as compensation for approximately 1,215,000 ha (NRC 2010).

In July 1792, Simcoe divided the province into 19 counties consisting of previously-settled lands, new lands open for settlement and lands not yet acquired by the Crown. These new counties stretched from Essex in the west to Glengarry in the east. Three months later, in October 1792, an Act of Parliament was passed whereby the four districts established by Lord Dorchester were renamed as the Western, Home, Midland and Eastern Districts. The vicinity of the study area nominally fell within the boundaries of Kent County in the Western District at this time, which comprised all of the territory of Upper Canada that was not included in the other 18 counties (AO 2011). In essence, Kent was the largest county ever created, stretching from Lake Erie to Hudson’s Bay (McGeorge 1939:36). This arrangement would not last, however, and the ‘northern’ parts of Kent County would soon be sectioned off to form separate counties.

1.2.3.2 Oxford County

Shortly after the creation of Upper Canada, the original arrangement of the province’s districts and counties was deemed inadequate. As population levels increased, smaller administrative bodies became desirable, resulting in the division of the largest units into more ‘manageable’ component parts. The first major changes in the vicinity of the study area took place in 1798, when an Act of Parliament called for the realignment of the Home and Western Districts and the formation of the London and Niagara Districts. Many new counties and townships were subsequently created (AO 2011).

The vicinity of the study area became part of Oxford County in the London District at this time. D.W. Smyth’s *A Map of the Province of Upper Canada* (1800) and J. Purdy’s *A Map of Cabotia* (1814) show the layout of the first townships in this area (see Map 10–Map 11). Although Oxford County would endure for the entirety of the Euro-Canadian era, it was not excluded from the many changes associated with the evolving administrative landscape. In 1821, for example, the county was enlarged through the addition of the Townships of Nissouri and Zorra (see Map 12). In the 1830s and early 1840s, the layout of what would become southern Ontario was significantly altered through the creation of the Huron, Brock, Wellington, Talbot and Simcoe Districts (AO 2011). Oxford became part of the Brock District in November 1839 and part of Canada West in the new United Province of Canada in February 1841 (see Map 13).

The earliest settler in Oxford County was Thomas Horner, who first came to the Township of Blenheim from New Jersey in 1793 to inspect the area and select a mill site. Horner’s uncle, Thomas Watson, Esquire, had aided Governor Simcoe when he was imprisoned by the Americans, and Simcoe had invited Watson’s friends and relations to settle in Blenheim in 1792.

Watson sent his son (also named Thomas) with Horner in response to Simcoe's request. To accommodate the arrival of Horner and other settlers, Simcoe had the first three concessions of Blenheim surveyed by "Surveyor Jones and his Indian Party" (Shenston 1852:29).

A second grant was made by Governor Simcoe in 1795 to Major Thomas Ingersoll, a Loyalist soldier from Massachusetts. The grant was a reward for Ingersoll's service in the Revolutionary War and was made on the condition that 40 families had to be settled on the land within 10 years. By 1805, 40 families had attempted settlement of the area, but many had been discouraged by the hardness of life there and abandoned their holdings. At the time, the historically-surveyed Dundas Street was the only road traversing the area, and it was more of a roughhewn and boggy trail than a real road (MTO 1984). As a result, Ingersoll lost his charter and moved to Port Credit where he died in 1812 (Frost and Stoyles 2003:4).

Between 1815 and 1824, heavy immigration from the Old World resulted in the doubling of the non-Aboriginal population of Upper Canada from 75,000 to 150,000. This dramatic increase was a result of the outcome of the War of 1812 and the Crown's efforts to populate the province's interior. A total of six major land-cession agreements were then pursued, which would yield nearly 3,000,000 ha of lands for Euro-Canadian settlement (Surtees 1994:112). These agreements were concerned with lands located well beyond the original waterfront settlements of Upper Canada, and included the Lake Simcoe-Nottawasaga, Ajetance, Rice Lake, Rideau, Long Woods and Huron Tract Purchases (Surtees 1994:113–119).

In October 1818, John Askin, Superintendent of Indian Affairs at Amherstburg, was sent to the Thames River area between London and Chatham in order to arrange for the purchase of a large tract of land to the north. Askin met with the chiefs of the Ojibway bands of the Chenal Ecarté, the St. Clair River, Bear Creek, the Ausable River and the Thames River, and began negotiations for lands on the Thames River and on Lake Huron just north of the Ausable River, extending inland as far as the Grand River Tract. The Ojibway leaders agreed to sell the land, and stipulated that 1) six reserves be set aside for them and that 2) a blacksmith and farm instructor be stationed near the reserves (Surtees 1994:117).

Based on Askin's report, the government decided to purchase the subject tract through two agreements: the 'Long Woods Purchase' and the 'Huron Tract Purchase'. The Long Woods area interested the Crown the most, as it was immediately north of the Thames River and was the next logical destination for Euro-Canadian settlers. Askin met with the Ojibway in 1819, and a provisional agreement was created which involved the surrender of 210,000 ha in exchange for an annuity of 600 pounds in currency and goods. The Huron Tract provisional agreement was also negotiated that same year, in which over 1,000,000 ha were to be sold for an annuity of 1,375 pounds in currency and goods (Surtees 1994:117–118).

Neither agreement was executed, however, as objections over the nature of the cash payments led to the revision of both proposals. The Long Woods Purchase was finally completed on November 28, 1822, and almost 552,190 ha were exchanged for 600 pounds in currency (NRC 2010). Specifically, a *per capita* payment of 2 pounds 10 shillings was agreed upon, to a maximum of 240 persons (Surtees 1994:118). The Huron Tract Purchase took longer to settle, and it was not pursued in earnest until John Galt's Canada Company began to materialize. This

purchase was completed on July 10, 1827 for 1,375 pounds in currency (NRC 2010). Over the ensuing years, these lands would become parts of Waterloo, Wellington, Huron, Lambton, Middlesex and Oxford Counties. The vicinity of the study area was acquired as part of the Huron Tract Purchase, which extended westerly from the South Thames River and the western limits of the second ‘Between the Lakes Purchase’.

Eventually, county roads were improved and the pace of settlement in the county increased, with the bulk of immigrants coming from Scotland, England and Ireland. By 1842, the population of Oxford County had reached 16,271 (Smith 1846:20). Settlement subsequently occurred at such a pace that, by 1846, no remaining Crown Lands were available for sale in the entirety of the county (Smith 1846:20). Woodstock, located in the northwest corner of the Township of East Oxford, served as the District town throughout this period of rapid growth (Smith 1846:20, 233).

As the population of the county increased, so did public frustration with the Government, which was largely Crown-appointed and dominated by members of the privileged ‘Family Compact’. In 1837, many Oxonians (people of Oxford County) led by their local member of the Legislative Assembly, Dr. Charles Duncombe, joined the Upper Canada Rebellion. Their efforts were soon thwarted, and Duncombe was forced to flee to America (Stagg 2013). Success came in 1839, however, with the creation of the Brock District. This new district consisted solely of Oxford County (formerly part of the London District)—a move that was intended to provide the county with more political autonomy (AO 2011). The new political system made settlement in Canada West more attractive, particularly to Americans, and caused the population of Oxford County to surge to 31,448 by 1852.

Following the abolishment of the district system in 1849, the counties of Canada West were reconfigured once again. Oxford County emerged to stand on its own as an independent municipality at this time, comprising the Townships of Blandford, Blenheim, Dereham, East Nissouri, North Oxford, East Oxford, West Oxford, North Norwich, South Norwich, East Zorra and West Zorra (see Map 14). The county was known for its high, rolling lands that offered excellent opportunities for cultivation, as well as its many waterways, including the Grand River, the Thames River, Otter Creek and Catfish Creek (Smith 1846:20).

In 1853, the arrival of the Great Western Railway encouraged further settlement within Oxford County. The railway allowed the area’s residents to prosper as producers and exporters of grain and cheese. Increased demand for such products, accompanied by increasing prices, created considerable prosperity during the Crimean War (1853–1856) and the American Civil War (1861–1865). By the late 19th century, the county was traversed by multiple railway lines, and major population centres had developed in each township (see Map 15).

On January 1, 1975, major revisions to Oxford County's structure occurred when the historic townships were amalgamated into five new municipalities: Zorra, East Zorra-Tavistock, Blandford-Blenheim, South-West Oxford and Norwich. The urban centres of Ingersoll, Tillsonburg and Woodstock were retained, although there were modifications to their layouts.

1.2.3.3 Township of West Zorra

In historic times, the Township of Zorra was bounded by the Townships of Downie and South Easthope to the north, the Townships of Wilmot and Blandford to the east, the Township of North Oxford to the south and the Township of Nissouri to the west. According to early historical sources, the township contained “very excellent land, and the timber is generally hard wood, maple, oak, elm, beech, etc.” (Smith 1846:226), and “its general aspect is rolling, and the soil rich and fertile, producing excellent crops of grain and fruit” (Sutherland 1862:94). The land was well-watered by various tributaries of the Thames River, providing power for milling operations (Sutherland 1862:94).

The Township of Zorra was surveyed by Shubal Parke in 1820, and by January 1820, a total of 27,951 ha had been granted in parcels of various sizes. Most of the parcels were 40.5 ha (100 acres) or 81.0 ha (200 acres) in size, but Thaddeus Davis was granted 2,051.4 ha (5,069 acres) and Thomas Merritt and James Kerby were granted 404.7 ha (1,000 acres). Joseph Randell, Daniel Randell, Robert Roseburgh, Thomas Roseburgh, Samuel Roseburgh, Lewis Evans, Shubal Parke and Thomas Woomack were only granted 20.2 ha (50 acres) each. The township was first organized in 1822, and only 58.7 ha (145 acres) had been cleared at that time (Shenston 1852:164–165).

The population of Zorra as a whole was 2,722 in 1842, and there was one grist mill and three saw mills in operation. A total of 24,370 ha were taken up by ca. 1846, 4,301 ha of which were under cultivation (Smith 1846:226). The Township of Zorra was divided into the municipalities of West and East Zorra in 1845, and West Zorra comprised the portion of the Township of Zorra located west of the line between Concessions 8 and 9 (Shenston 1852:28; Sutherland 1862:94). The first lot sold by the government was Lot 12, Concession 4, the northern half of which was acquired by Barnabus Ford, Jr. and the southern half of which was acquired by Abel Ford in January 1832 (Shenston 1852:173).

By 1851, the population of West Zorra was 3,302, and by 1861, it was 3,691. The majority of the population was of Scottish origin at that time (Sutherland 1862:94), and there were 64 McKays, 25 Murrays, 24 Rosses, 19 Sutherlands, 15 McLeods and 13 McDonalds on an enumerator list from the mid-19th century (Shenston 1852:173). In the mid-19th century, there were three saw mills, two grist mills, one wheat and barley mill, one oat mill, one carding and fulling mill and one tannery in the township (Shenston 1852:173). In 1862, the major roads in the township included the “Ingersoll, North Oxford, East Nissouri, and West Zorra Gravel Road” and the “North Oxford and West Zorra Gravel Road” (Sutherland 1862:94).

As a testament to the prosperity of the farming industry in West Zorra, “The West Zorra Agricultural Society” was formed in 1854 and ran an annual exhibition. The association met at the Albion Hotel in Embro, and the show ground was on the green opposite the hotel. Prizes were awarded for “horses, cattle, sheep, swine, dairy produce, grain, vegetables, domestic manufactures, farming implements, other mechanic works, fruit and field roots” (Sutherland 1862:94). The Western Ontario Pacific Railway (operated by Canadian Pacific) was surveyed in 1886 and opened in 1887, whereas the St. Marys & Western Ontario Railway and the Tillsonburg, Lake Erie & Pacific Railway (both operated by Canadian Pacific) were opened in 1908 and abandoned in 1995 (Zadro and Delamere 2009).

The principal historic communities in West Zorra included Harrington in the northwest and Embro in the south-centre, although smaller settlements also developed at Brooksdale, Youngsville and Maplewood (see Map 16). Harrington (originally called Springville) had a population of approximately 100 in 1862, and it contained a post office, a school, saw, flouring and oatmeal mills, general stores as well as shoe, carpenter, cabinet-maker, wagon and other workshops at that time (Sutherland 1862:128). Embro developed 9.6 km from the ‘Governor’s Road’ (Dundas Street) and it had excellent hydraulic power for mill purposes. By 1846, Embro had a population of roughly 150 and contained one grist and saw mill, a carding machine and cloth factory, a distillery, a tannery, three stores, two taverns, one wagon maker, two blacksmiths, three shoemakers and one tailor (Smith 1846:54). By 1862, the settlement had a population of 551 and boasted three flouring and grist mills, one saw mill, a woollen factory, a tannery and a post office, and its business included mercantile stores, workshops and a brick hotel called the Albion (Sutherland 1862:122–124).

1.2.3.4 The Study Area

As discussed in Section 1.1, the Harrington Dam parcel falls on part of Lot 30, Concession 2 in the Geographic Township of West Zorra, whereas the Embro Dam parcel falls on part of Lot 15, Concession 4 in the Geographic Township of West Zorra. The lots in this area were laid out during the early 19th century, and the vicinity of the study area was well-settled for the remainder of the Euro-Canadian period.

In an attempt to reconstruct the historic land use of the study area, ARA examined three historical maps that documented past residents, structures (e.g., homes, businesses and public buildings) and features during the mid- and late 19th century. Specifically, the following maps were consulted:

- G.C. Tremaine’s *Tremaine’s Map of Oxford County, Canada West* (1857) at a scale of 60 chains to 1 inch (OHCMP 2015),
- *Harrington* from Walker & Miles’ *Topographical and Historical Atlas of the County of Oxford* (1876) at a scale of 10 chains to 1 inch (McGill University 2001); and
- *West Zorra Township* from Walker & Miles’ *Topographical and Historical Atlas of the County of Oxford* (1876) at a scale of 45 chains to 1 inch (McGill University 2001).

The consulted historical maps were georeferenced and integrated into ARA’s GIS database, and the limits of the study area are illustrated in Map 17–Map 19. The content of these maps is referenced throughout the following historic land use summary.

G.C. Tremaine’s *Tremaine’s Map of Oxford County, Canada West* (1857) indicates that the community of Harrington was well-established around the Harrington Dam parcel, and the Harrington Pond and Grist Mill are illustrated within the study area (a saw mill is also shown to the west). The lands southwest of the community were owned by William Ross, whereas the lands to the southeast were owned by L.D. Demarest (Demorest). According to Sutherland’s *County of Oxford Gazetteer and General Business Directory for 1862-3*, D.L. Demorest was a post master and saw mill owner, Richard Paige was the proprietor of the Harrington Mills, and Sutherland & White were the proprietors of the Harrington Oatmeal Mill (Sutherland 1862:129).

The Embro Dam parcel, on the other hand, falls within lands owned by George Leonard, and a grist mill is shown within the study area. Sutherland's *County of Oxford Gazetteer and General Business Directory for 1862-3* lists Mrs. Munro as the proprietress of Spring Creek Mills on Lot 15, Concession 4 (Sutherland 1862:103).

West Zorra Township from Walker & Miles' *Topographical and Historical Atlas of the County of Oxford* (1876) indicates that the majority of Lot 30, Concession 2 was owned by S.F. Rounds at that time, and a school house and church are illustrated in the northwestern and south-central parts, respectively. S.F. Rounds is listed as an American-born farmer and mill owner who settled in the Township of West Zorra in 1837, and he collected his mail from the Harrington post office. The northern part of the lot comprised the community of Harrington, and *Harrington* from Walker & Miles' *Topographical and Historical Atlas of the County of Oxford* (1876) provides a comprehensive picture of the settlement. The mill pond is shown, as is the Harrington Grist Mill on the east bank of 'Trout Creek' (now Harrington-West Drain). Regarding the Embro Dam parcel, *West Zorra Township* from Walker & Miles' *Topographical and Historical Atlas of the County of Oxford* (1876) indicates that Lot 15, Concession 4 was owned by Thomas Sutherland, and a grist mill is illustrated on the east side of 'Spring Brook' (now Youngsville Drain). Few biographical details are listed for Sutherland, save for the fact that he collected his mail from the Embro post office (McGill University 2001).

The Harrington Grist Mill is a major feature of the Harrington Dam parcel, and it was built by United Empire Loyalist D.L. Demorest. It operated continuously from 1846 to 1966, save for short periods in 1903 (when the mill dam broke), 1923 (when the mill was destroyed by fire) and 1949 (when the mill dam broke again). The original structure consisted of pine timbers and a split shingle roof, and it was powered by an overshot wheel (later replaced by a more efficient turbine in the 1880s). The mill initially used the French Burr stone system for producing flour, but in the late 1890s, modern milling equipment was introduced in the form of an oat roller and chopper (the oat roller at the mill was manufactured by Whitelaw Machinery of Woodstock). The mill was acquired by the UTRCA in 1966, and it then remained closed and unused (HCC 2008).

In 1999, the Harrington Community Club entered into a lease agreement in order to preserve and restore the mill as a museum and educational site. The work involved "re-installations, new foundation and re-alignments to loosen up the running gear" (Dale 2010:6). The restorations also included recladding the structure in board and batten, installing a new roof, restoring the oat roller from the 1890s and restoring the turbine (Fischer and Harris 2007:219). Interestingly, there is an advertisement for Harrington Mills, Gristing and Chopping in Walker & Miles' *Topographical and Historical Atlas of the County of Oxford* (1876), listing the proprietor as J.S. Betzner. The advertisement reads: "Harrington Mills, J.S. Betzner, Proprietor, Gristing and Chopping, Done on Short Notice. Highest Market Price for Wheat and other Grain" (Walker & Miles 1876:94).

ARA also consulted a historic aerial image of the properties from 1954 to gain a better understanding of their more recent land use (see Map 20). The Harrington Dam parcel comprised Harrington Pond, the Harrington Grist Mill and a laneway running along the western edge of the study area at this time. The Embro Dam parcel comprised Spring Brook and adjacent grassed and wooded areas, but no structures or features are visible (University of Toronto 2009).

1.2.4 Summary of Past and Present Land Use

During Pre-Contact and Early Contact times, the vicinity of the study area would have comprised a mixture of deciduous trees and open areas. It seems clear that the First Nations managed the landscape to some degree, but the extent of such management is unknown. During the early 19th century, Euro-Canadian settlers arrived in the area and began to clear the forests for agricultural purposes. Over the course of the Euro-Canadian era, the Harrington Dam parcel would have fallen within the community of Harrington and contained a mill pond surrounded by homes, roadways and businesses. The Embro Dam parcel contained a mill pond surrounded by agricultural lands and wooded areas. At the time of assessment, the Harrington Dam parcel comprised Harrington Pond, the Harrington Grist Mill, a gravel driveway, pedestrian bridges, maintained lawns, wooded areas and part of an agricultural field, whereas the Embro Dam parcel comprised Embro Pond, a pavilion, a culvert, maintained lawns and wooded areas.

1.2.5 Additional Background Information

Given that no other archaeological assessment reports have been prepared for the project, and that no other assessments have been documented in the immediate area (see Section 1.3.1), additional relevant background information was not available to inform ARA's archaeological potential modelling or recommendations (MTC 2011:125).

1.3 Archaeological Context

1.3.1 Previous Archaeological Work

In order to determine whether any archaeological assessments had been previously conducted within the limits of, or immediately adjacent to the study area, ARA submitted an inquiry to the Archaeology Data Coordinator (MTCS 2015) and conducted extensive independent background research. As a result of these investigations, it was determined that there are no reports on record documenting past work within a 50 m radius.

1.3.2 Summary of Registered or Known Archaeological Sites

An archival search was conducted using the MTCS's Ontario Archaeological Sites Database in order to determine the presence of any registered archaeological resources which might be located within a 1 km radius of the study area (MTCS 2015). The results of this search indicate that there are no previously-identified archaeological sites within these limits. The lack of documented archaeological sites in the vicinity of the study area should not be taken as an indicator that the area was unattractive or undesirable for human occupation. Instead, this absence of sites is likely related to a lack of local archaeological exploration.

1.3.3 Natural Environment

Environmental factors played a substantial role in shaping early land-use and site selection processes, particularly in small Pre-Contact societies with non-complex, subsistence-oriented economies. Euro-Canadian settlers also gravitated towards favourable environments, particularly those with agriculturally-suitable soils. In order to fully comprehend the archaeological context

of the study area, the following four features of the local natural environment must be considered: 1) forests; 2) drainage systems; 3) physiography; and 4) soil types.

The study area lies within the deciduous forest, which is the southernmost forest region in Ontario and is dominated by agricultural and urban areas. This region generally has the greatest diversity of tree species, while at the same time having the lowest proportion of forest. It has most of the tree and shrubs species found in the Great Lakes–St. Lawrence forest (e.g., eastern white pine, red pine, eastern hemlock, white cedar, yellow birch, sugar and red maple, basswood, red oak, black walnut, butternut, tulip, magnolia, black gum, and many types of oaks and hickories), and also contains black walnut, butternut, tulip, magnolia, black gum, many types of oaks, hickories, sassafras and red bud. The deciduous forest region has the most diverse forest life in Ontario, including rare species such as the southern flying squirrel, red-bellied woodpecker, black rat snake, milk snake and gray tree frog (MNRF 2014).

With an area of almost 3,000,000 ha, the deciduous forest region has largely been cleared, and only scattered woodlots remain on sites too poor for agriculture (MNRF 2014). In Pre-Contact times, however, these dense forests would have been particularly bountiful. It is believed that the First Nations of the Great Lakes region exploited close to 500 plant species for food, beverages, food flavourings, medicines, smoking, building materials, fibres, dyes and basketry (Mason 1981:59–60). Furthermore, this diverse vegetation would have served as both home and food for a wide range of game animals, including white tailed deer, turkey, passenger pigeon, cottontail rabbit, elk, muskrat and beaver (Mason 1981:60).

In terms of local drainage systems, the Harrington Dam parcel lies within the Trout Creek watershed, which makes up 5% of the Upper Thames River watershed and drains parts of Zorra, Perth South, Perth East, St. Marys and Stratford into the North Thames River at St. Marys. The Embro Dam parcel lies within the Mud Creek watershed, which also makes up 5% of the Upper Thames River watershed and drains parts of Zorra and East Zorra-Tavistock into the Middle Thames River downstream of Embro (UTRCA 2012). Specifically, the Harrington Dam parcel is traversed by a tributary of Trout Creek (Harrington-West Drain) and is located 294 m south of Trout Creek and 397 m southeast of the Wildwood Reservoir. The Embro Dam parcel is traversed by a tributary of North Branch Creek West (Youngsville Drain) and is located 4.1 km west of Mud Creek and 4.0 km northwest of the Middle Thames River.

Physiographically, the study area lies within the region known as the Oxford Till Plain, which occupies a central position in the peninsula of southwestern Ontario. This plain covers approximately 156,000 ha and has a drumlinized surface. The till consists of a pale brown calcareous loam with limestone and grey/pale brown dolostone (Chapman and Putnam 1984:143). The underlying bedrock consists of limestone and dolostone belonging to the Middle Devonian Detroit River group (Davidson 1989:42).

The soils within the Harrington Dam parcel consist primarily of Muck (M) in the north and Guelph loam (Gl) to the south, although there is also some Bottom Land (B.L.) and Fox sandy loam-rolling phase (Fxs1-r) in the southwest. The Embro Dam parcel consists entirely of Guelph loam (Wicklund and Richards 1961:Soil Map). The characteristics of these soils can be summarized as follows:

- Muck: An Alluvial soil consisting of deep organic deposits underlain by sand, silt and clay with a depressional topography, a stone-free matrix and very poor drainage qualities;
- Guelph loam: A Grey-Brown Podzolic consisting of calcareous loam till with a smooth moderately-to-steeply rolling topography, a slightly stony matrix and good drainage qualities;
- Bottom Land: An Alluvial soil consisting of recent alluvium with a level topography, a stone-free matrix and variable drainage qualities; and
- Fox sandy loam-rolling phase: A Grey-Brown Podzolic consisting of calcareous sand with a smooth very gently sloping to rolling topography, a stone-free matrix and good drainage qualities.

In summary, the study area possesses a number of environmental characteristics which would have made it attractive to both Pre-Contact and Euro-Canadian populations. The rich deciduous forest and the nearby water sources would have attracted a wide variety of game animals, and consequently, early hunters. The areas of well-drained soils would have been ideal for the maize horticulture of Middle to Late Woodland peoples and the mixed agriculture practiced by later Euro-Canadian populations. The proximity of the study area to Trout Creek, Mud Creek and the Upper and Middle Thames Rivers—principal transportation routes in both Pre-Contact and Euro-Canadian times—would also have influenced its settlement and land-use history.

1.3.4 Archaeological Fieldwork and Property Conditions

The Stage 1 property inspection was carried out on May 19, 2015 under licence #P007, PIF #P007-0690-2015. The assessment involved the visual survey of the study area and the documentation of all areas of archaeological potential. All field observations were made from accessible public lands; accordingly, no permissions were required for property access.

Key personnel involved in the assessment included P.J. Racher, Project Director; C.E. Gohm, Operations Manager; C.J. Gohm, Deliverables Manager; V. Cafik, Assistant Project Manager; and H. Buckton, Field Director.

At the time of assessment, the Harrington Dam parcel comprised Harrington Pond, the Harrington Grist Mill, a gravel driveway, pedestrian bridges, maintained lawns, wooded areas and part of an agricultural field, whereas the Embro Dam parcel comprised Embro Pond, a pavilion, a culvert, maintained lawns and wooded areas. The specific weather and lighting conditions for the day of assessment are summarized in Section 2.2. No unusual physical features were encountered during the property inspection that affected the results of the Stage 1 assessment.

2.0 STAGE 1 BACKGROUND STUDY

2.1 Summary

The Stage 1 assessment, conducted under licence #P007, PIF #P007-0690-2015, was accomplished through an examination of the archaeology, history, geography and current land condition of the vicinity of the study area. This background study was carried out using archival sources (e.g., historical publications and records) and current academic and archaeological publications (e.g., archaeological studies and reports). It also included the analysis of modern topographic maps (at a 1:50,000 scale), recent satellite imagery and historical maps/atlas of the most detailed scale available (i.e., 60 chains to 1 inch, 10 chains to 1 inch and 45 chains to 1 inch).

With occupation beginning approximately 11,000 years ago, the greater vicinity of the study area comprises a complex chronology of Pre-Contact and Euro-Canadian histories (see Section 1.2). Artifacts associated with Palaeo-Indian, Archaic, Woodland and Early Contact traditions are well-attested in Oxford County, and Euro-Canadian archaeological sites dating to pre-1900 and post-1900 contexts are likewise common. The lack of documented archaeological sites in the vicinity of the study area should not be taken as an indicator that the area was unattractive or undesirable for human occupation. Instead, this absence is more likely related to a lack of local archaeological exploration (see Section 1.3.2).

As mentioned in Section 1.3.3, the natural environment of the study area would have been attractive to both Pre-Contact and Euro-Canadian populations as a result of proximity to Harrington-West Drain, Trout Creek, Youngsville Drain and North Branch Creek West (all primary water sources). The areas of well-drained soils and the diverse local vegetation would also have encouraged settlement throughout Ontario's lengthy history. Euro-Canadian populations would have been particularly drawn to Road 96, Elizabeth Street and Victoria Street at the Harrington Dam parcel as well as Road 84 and 37th Line at the Embro Dam parcel (all historically-surveyed thoroughfares).

In summary, the Stage 1 assessment included an up-to-date listing of sites from the MTCS's Ontario Archaeological Sites Database (within at least a 1 km radius), the consideration of previous local archaeological fieldwork (within at least a 50 m radius), the analysis of topographic and historic maps (at the most detailed scale available), and the study of aerial photographs/satellite imagery. In this manner, the standards for background research set out in Section 1.1 of the *S&Gs* (MTC 2011:14–15) were met.

2.2 Field Methods (Property Inspection)

In order to gain first-hand knowledge of the geography, topography and current condition of the study area, a property inspection was conducted on May 19, 2015. Although optional, Section 1.2 of the *S&Gs* (MTC 2011:15–17) outlines the appropriateness of such an option when a greater level of detail is needed to recommend further assessment strategies. All field observations were made from accessible public lands; accordingly, no permissions were required for property access.

Environmental conditions were ideal during the property inspection, with partly cloudy skies, a high of 14 °C and good lighting. ARA therefore confirms that fieldwork was carried out under weather and lighting conditions that met the requirements set out in Section 1.2 Standard 2 of the *S&Gs* (MTC 2011:16).

Given the narrow nature of the study area around each pond, the lands were subjected to a systematic survey at an interval of ≤ 15 m in accordance with the requirements set out in Section 1.2 of the *S&Gs* (MTC 2011:15–17). Specifically, the systematic survey began in the northeastern part of each parcel and progressed clockwise around the southern and western parts. The visually surveyed areas were examined under ideal weather and lighting conditions with high ground surface visibility.

The property inspection/visual survey confirmed that all features of archaeological potential (e.g., historically-surveyed roadways, etc.) were present where they were previously identified, and did not result in the identification of any additional features of archaeological potential not visible on mapping (e.g., relic water channels, patches of well-drained soils, etc.). No new structures or built features (e.g., heritage structures, plaques, monuments, cemeteries, etc.) were identified that would affect assessment strategies (MTC 2011:16–17). The property inspection result in the identification of several areas of no archaeological potential, however, which are discussed in Section 2.3.

2.3 Analysis and Conclusions

In addition to the relevant historical sources and the results of past excavations and surveys (see Section 1.2–Section 1.3), the archaeological potential of a property can be assessed using its soils, hydrology and landforms as considerations. What follows is an in-depth analysis of the archaeological potential of the study area, which incorporates the results of the property inspection conducted in May 2015.

Throughout southern Ontario, scholars have noted a strong association between site locations and waterways. Young, Horne, Varley, Racher and Clish, for example, state that "either the number of streams and/or stream order is always a significant factor in the positive prediction of site presence" (1995:23). They further note that certain types of landforms, such as moraines, seem to have been favoured by different groups throughout prehistory (Young et al. 1995:33). According to Janusas (1988:1), "the location of early settlements tended to be dominated by the proximity to reliable and potable water resources." Site potential modeling studies (Peters 1986; Pihl 1986) have found that most prehistoric archaeological sites are located within 300 m of either extant water sources or former bodies of water, such as post-glacial lakes.

While many of these studies do not go into detail as to the basis for this pattern, Young, Horne, Varley, Racher and Clish (1995) suggest that the presence of streams would have been a significant attractor for a host of plant, game and fish species, encouraging localized human exploitation and settlement. Additionally, lands in close proximity to streams and other water courses were highly valued for the access they provided to transportation and communication routes. Primary water sources (e.g., lakes, rivers, streams and creeks) and secondary water sources (e.g., intermittent streams and creeks, springs, marshes and swamps) are therefore of pivotal importance for identifying archaeological potential (MTC 2011:17).

Section 1.3.1 of the *S&Gs* (MTC 2011:17–18) emphasizes the following six features and characteristics as being additional indicators of positive potential for Pre-Contact archaeological materials: 1) features associated with extinct water sources (glacial lake shorelines, relic river channels, shorelines of drained lakes, etc.); 2) the presence of pockets of well-drained soils (for habitation and agriculture); 3) elevated topography (e.g. drumlins, eskers, moraines, knolls, etc.); 4) distinctive landforms that may have been utilized as spiritual sites (waterfalls, rocky outcrops, caverns, etc.); 5) proximity to valued raw materials (quartz, ochre, copper, chert outcrops, medicinal flora, etc.); and 6) accessibility of plant and animal food sources (spawning areas, migratory routes, prairie lands, etc.).

Conversely, it must be understood that non-habitational sites (e.g., burials, lithic quarries, kill sites, etc.) may be located anywhere. Potential modeling appears to break down when it comes to these idiosyncratic sites, many of which have more significance than their habitational counterparts due to their relative rarity. The Stage 1 archaeological assessment practices outlined in Section 1.4.1 of the *S&Gs* (MTC 2011:20–21) ensure that these important sites are not missed, as no areas can be exempt from test pit survey unless both a background study and property inspection have been completed (unless the lands are already exempt due to disturbance, etc.).

With the development of integrated 'complex' economies in the Euro-Canadian era, settlement tended to become less dependent upon local resource procurement/production and more tied to wider economic networks. As such, proximity to transportation routes (roads, canals, etc.) became the most significant predictor of site location, especially for Euro-Canadian populations. In the early Euro-Canadian era (pre-1850), when transport by water was the norm, sites tended to be situated along major rivers and creeks—the 'highways' of their day. With the opening of the interior of the province to settlement after about 1850, sites tended to be more commonly located along historically-surveyed roads. Section 1.3.1 of the *S&Gs* (MTC 2011:18) recognizes trails, passes, roads, railways and portage routes as examples of such early transportation routes.

In addition to transportation routes, Section 1.3.1 of the *S&Gs* (MTC 2011:18) emphasizes three other indicators of positive potential for Euro-Canadian archaeological materials: 1) areas of early settlement (military outposts, pioneer homesteads or cabins, early wharfs or dock complexes, pioneer churches, early cemeteries, etc.); 2) properties listed on a municipal register, designated under the *Ontario Heritage Act* or otherwise categorized as a federal, provincial or municipal historic landmark/site; and 3) properties identified with possible archaeological sites, historical events, activities or occupations, as identified by local histories or informants.

Based on the location, drainage and topography of the subject lands and the application of land-use modelling, it seems clear that the study area, in its pristine state, would have potential for both Pre-Contact and Euro-Canadian archaeological sites. Local indicators of archaeological potential include four primary water sources (Harrington-West Drain, Trout Creek, Youngsville Drain and North Branch Creek West), five historically-surveyed roadways (Road 96, Elizabeth Street, Victoria Street, Road 84 and 37th Line) and two areas of early Euro-Canadian settlement (Harrington and Embro). The representation of historic mills on both properties in mapping from 1857 and 1876 suggests that these areas have significant potential for Euro-Canadian material culture and features.

In its current state, however, the study area retains only part of this archaeological potential (see Image 1–Image 4). Section 2.1 of the *S&Gs* (MTC 2011:28) states that lands that 1) are sloped $> 20^\circ$, 2) are permanently wet, 3) consist of exposed bedrock or 4) have been subject to extensive and deep land alterations can be considered exempt from requiring Stage 2 assessment. These guidelines serve as effective criteria for identifying areas of no archaeological potential.

ARA's property inspection/visual survey, coupled with the analysis of modern satellite imagery and topographic mapping, resulted in the identification of several areas of disturbance within the assessed area (see Image 5–Image 10). Specifically, deep land alterations have resulted in the removal of archaeological potential from 1) the driveways/walkways associated with the grist mill and pedestrian bridges at the Harrington Dam parcel, 2) the footprint of the Harrington Grist Mill and a look-out platform at the Harrington Dam parcel, 3) the footprint of a concrete-footed pavilion at the Embro Dam parcel and 4) culverts and/or dams at the north and south ends of the ponds at both parcels. Natural areas of no archaeological potential included several permanently wet areas associated with the waterways and ponds at both parcels (see Image 11–Image 12), and two area of lands sloped $> 20^\circ$ at the Embro Dam parcel (see Image 13–Image 14). The remainder of the assessed area either has potential for Pre-Contact and Euro-Canadian archaeological materials or requires test-pitting to confirm disturbance.

Based on the results of the visual survey, both the Harrington and Embro Dam parcels currently comprise a mixture of areas of archaeological potential and areas of no archaeological potential. In total, 4.49% (0.25 ha) of the Harrington Dam parcel falls within an agricultural field and requires pedestrian survey at an interval of ≤ 5 m, 52.00% (2.94 ha) falls within 300 m of a feature of archaeological potential and requires test pit survey at an interval of ≤ 5 m, 3.45% (0.20 ha) was identified as disturbed and 40.06% (2.27 ha) was found to be permanently wet. Regarding the Embro Dam parcel, 66.79% (2.09 ha) falls within 300 m of a feature of archaeological potential and requires test pit survey at an interval of ≤ 5 m, 0.19% (0.01 ha) was identified as disturbed, 30.96% (0.97 ha) was found to be permanently wet and 2.06% (0.07 ha) was sloped $> 20^\circ$. The identified areas of archaeological potential and areas of no archaeological potential (separated by class or category) are depicted in Map 21–Map 22.

3.0 RECOMMENDATIONS

The results of the assessment indicated that the study area currently comprises a mixture of areas of archaeological potential and areas of no archaeological potential (see Map 21–Map 22). ARA recommends that all areas of archaeological potential that could be impacted by the project be subject to a Stage 2 property assessment in advance of construction.

In accordance with the requirements set out in Section 2.1 of the *S&Gs* (MTC 2011:28–39), the following assessment strategies should be utilized:

- For recently cultivated or actively cultivated lands, the assessment must be conducted using the pedestrian survey method at an interval of ≤ 5 m. All ground surfaces must be recently ploughed, weathered by one heavy rainfall, and provide at least 80% visibility. If archaeological materials are encountered in the course of the pedestrian survey, the transect interval must be closed to 1 m and a close inspection of the ground must be conducted for 20 m in all directions.
- For lands where ploughing is not possible or viable (e.g., wooded areas; pasture with high rock content; abandoned farmland with heavy brush and weed growth; and gardens, parkland or lawns which will remain in use for several years after the survey), the assessment must be conducted using the test pit survey method. A test pit survey interval of ≤ 5 m is required in all areas less than 300 m from any feature of archaeological potential, and a test pit survey interval of ≤ 10 m is required in all areas more than 300 m from any feature of archaeological potential. Each test pit must be excavated into the first 5 cm of subsoil, and the resultant pits must be examined for stratigraphy, cultural features and/or evidence of fill. The soil from each test pit must be screened through mesh with an aperture of no greater than 6 mm and examined for archaeological materials.

The identified areas of no archaeological potential are not recommended for further assessment. It is requested that this report be entered into the *Ontario Public Register of Archaeological Reports*, as provided for in Section 65.1 of the *Ontario Heritage Act*.

4.0 ADVICE ON COMPLIANCE WITH LEGISLATION

Section 7.5.9 of the *S&Gs* requires that the following information be provided for the benefit of the proponent and approval authority in the land use planning and development process (MTC 2011:126–127):

- This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.
- The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

5.0 IMAGES



Image 1: Current Land Conditions, Harrington Dam
(Photo Taken on May 19, 2015; Facing Southwest)



Image 2: Current Land Conditions, Harrington Dam
(Photo Taken on May 19, 2015; Facing Southwest)



Image 3: Current Land Conditions, Embro Dam
(Photo Taken on May 19, 2015; Facing Southeast)



Image 4: Current Land Conditions, Embro Dam
(Photo Taken on May 19, 2015; Facing Northeast)



Image 5: Area of No Archaeological Potential, Harrington Dam – Disturbed
(Photo Taken on May 19, 2015; Facing North)



Image 6: Area of No Archaeological Potential, Harrington Dam – Disturbed
(Photo Taken on May 19, 2015; Facing Southwest)



Image 7: Area of No Archaeological Potential, Harrington Dam – Disturbed
(Photo Taken on May 19, 2015; Facing North)



Image 8: Area of No Archaeological Potential, Harrington Dam – Disturbed
(Photo Taken on May 19, 2015; Facing Southeast)



Image 9: Area of No Archaeological Potential, Harrington Dam – Disturbed
(Photo Taken on May 19, 2015; Facing Northwest)



Image 10: Area of No Archaeological Potential, Embro Dam – Disturbed
(Photo Taken on May 19, 2015; Facing South)



Image 11: Area of No Archaeological Potential, Harrington Dam – Permanently Wet
(Photo Taken on May 19, 2015; Facing Southeast)



Image 12: Area of No Archaeological Potential, Embro Dam – Permanently Wet
(Photo Taken on May 19, 2015; Facing Southeast)



Image 13: Area of No Archaeological Potential, Embro Dam – Slope > 20°
(Photo Taken on May 19, 2015; Facing North)

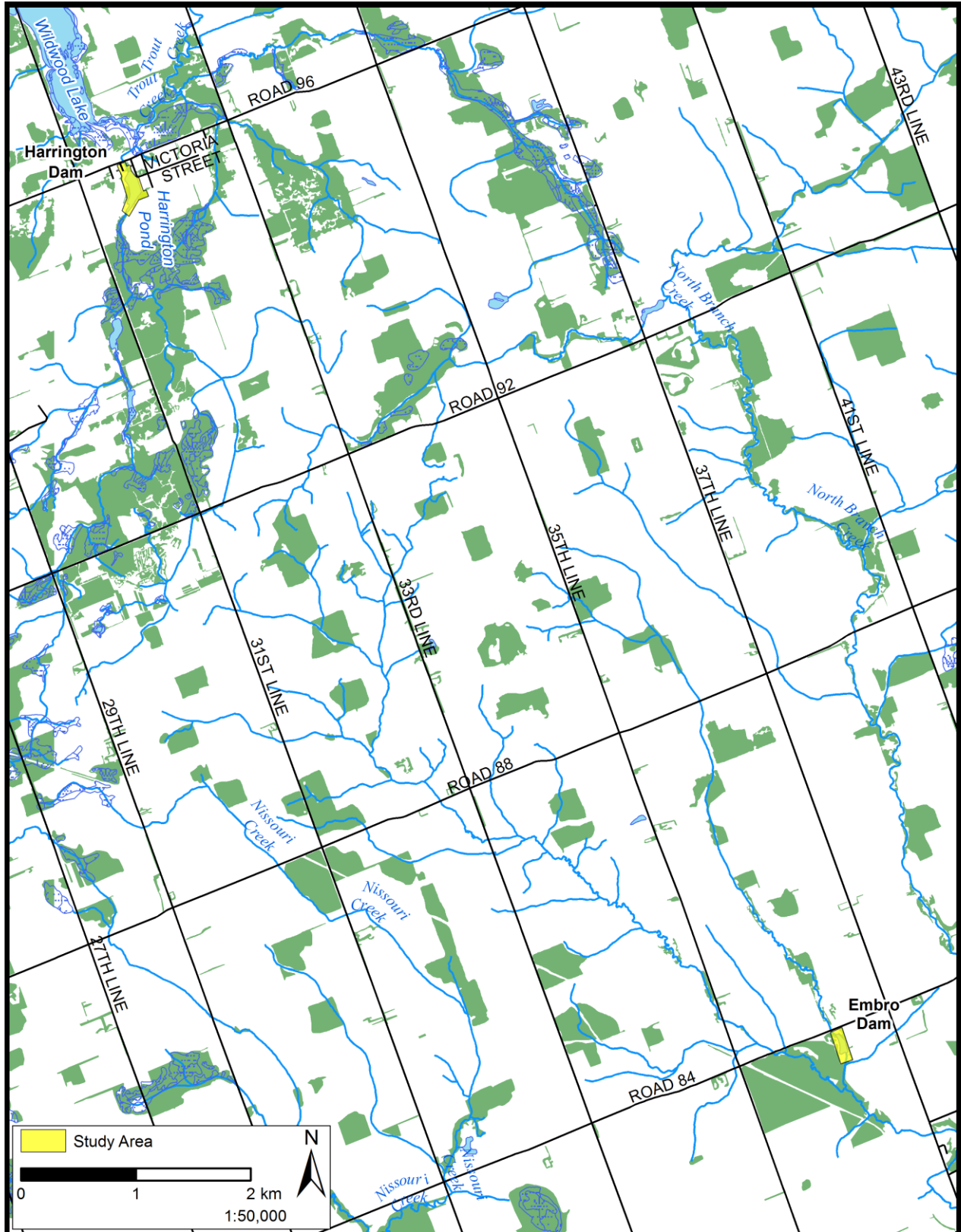


Image 14: Area of No Archaeological Potential, Embro Dam – Slope > 20°
(Photo Taken on May 19, 2015; Facing Northwest)

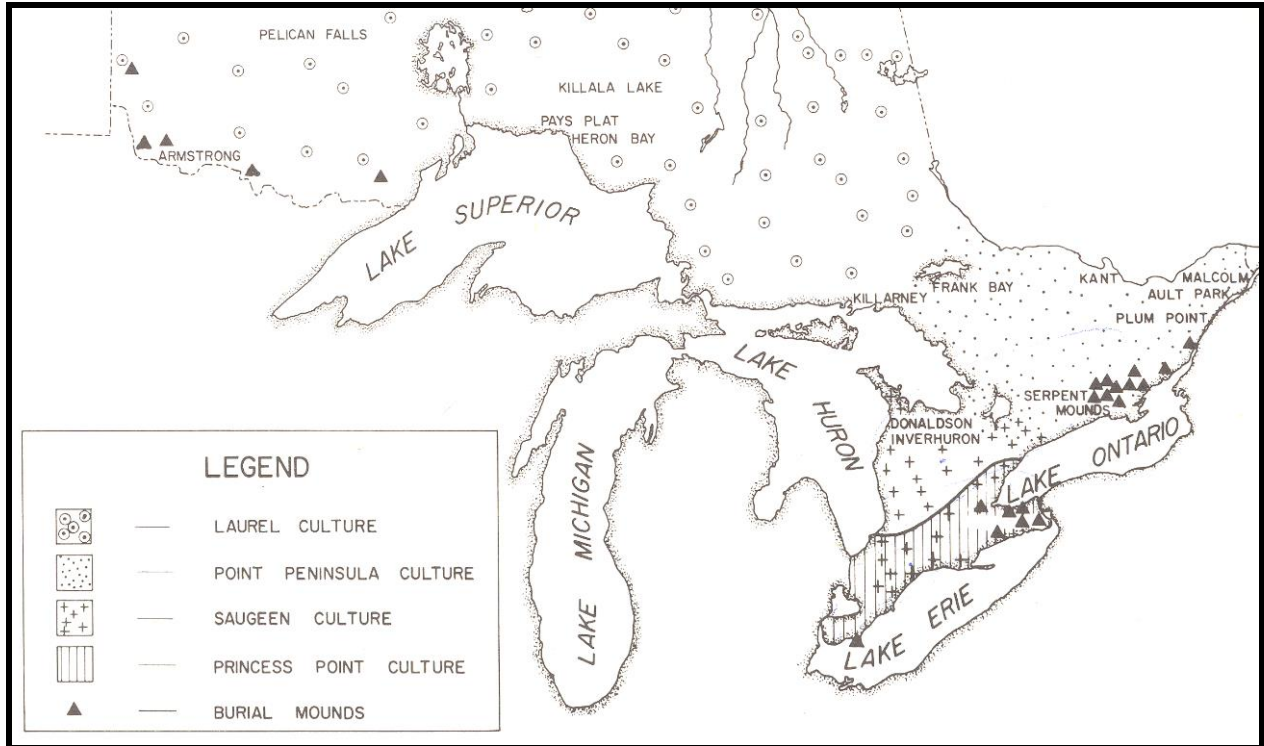
6.0 MAPS



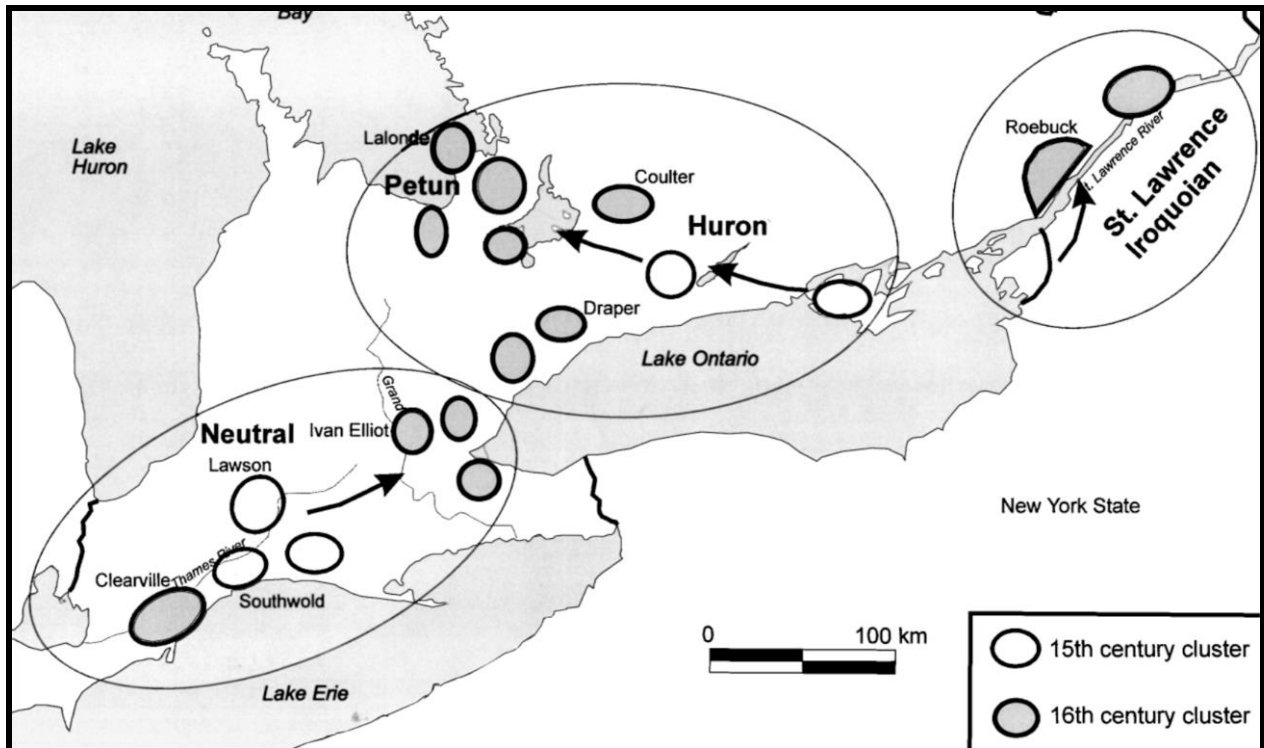
Map 1: Location of the Study Area in the Province of Ontario (NRC 2002)



Map 2: Location of the Study Area in the Township of Zorra
(Produced by ARA under licence from Ontario MNRF, © Queen's Printer 2015)



Map 3: Map of Middle Woodland Period Complexes
(Wright 1972:Map 4)



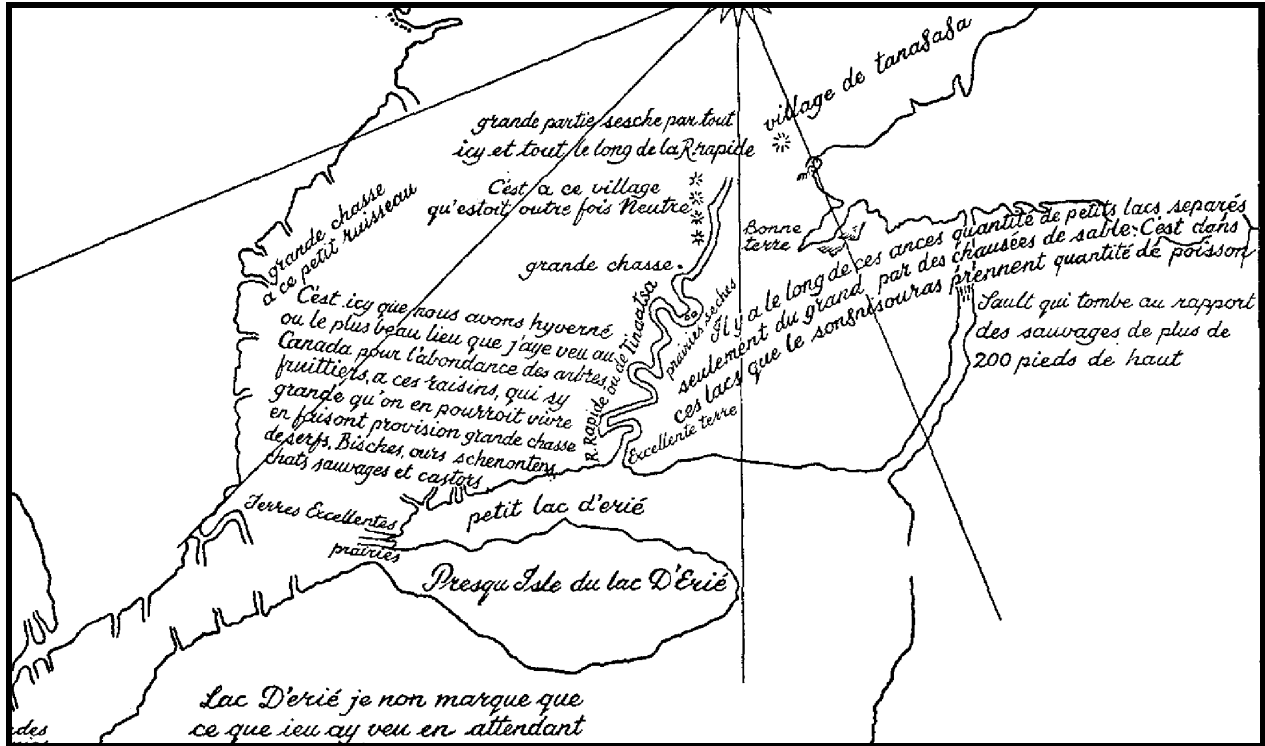
Map 4: Pre-Contact Iroquoian Site Clusters
(Warrick 2000:Figure 10)



Map 5: Detail from S. de Champlain's *Carte de la Nouvelle France* (1632)
(Gentilcore and Head 1984:Map 1.2)



Map 6: Detail from N. Sanson's *Le Canada, ou Nouvelle France* (1656)
(Gentilcore and Head 1984:Map 1.10)



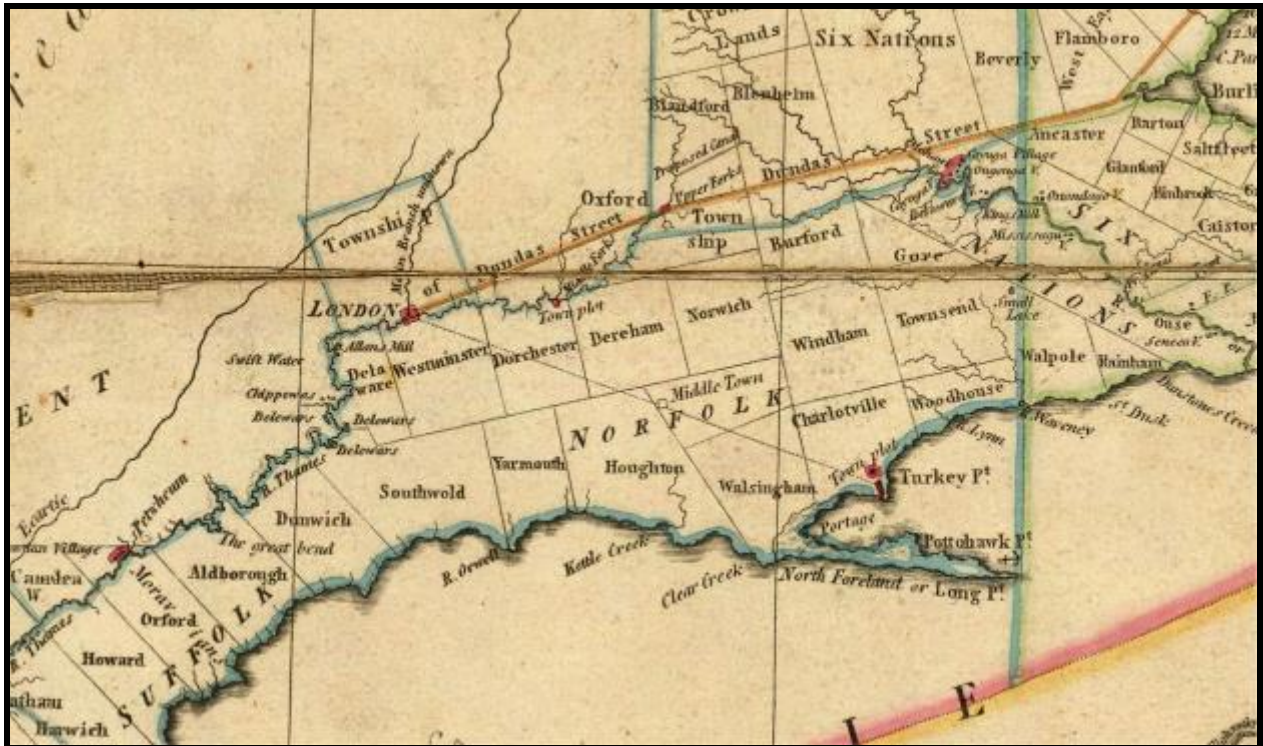
Map 7: Detail from the Map of Galinée's Voyage (1670)
(Lajeunesse 1960:Map 2)



Map 8: Detail from H. Popple's A Map of the British Empire in America (1733)
(Cartography Associates 2009)



Map 9: Detail from R. Sayer and J. Bennett's *General Map of the Middle British Colonies in America* (1776)
(Cartography Associates 2009)



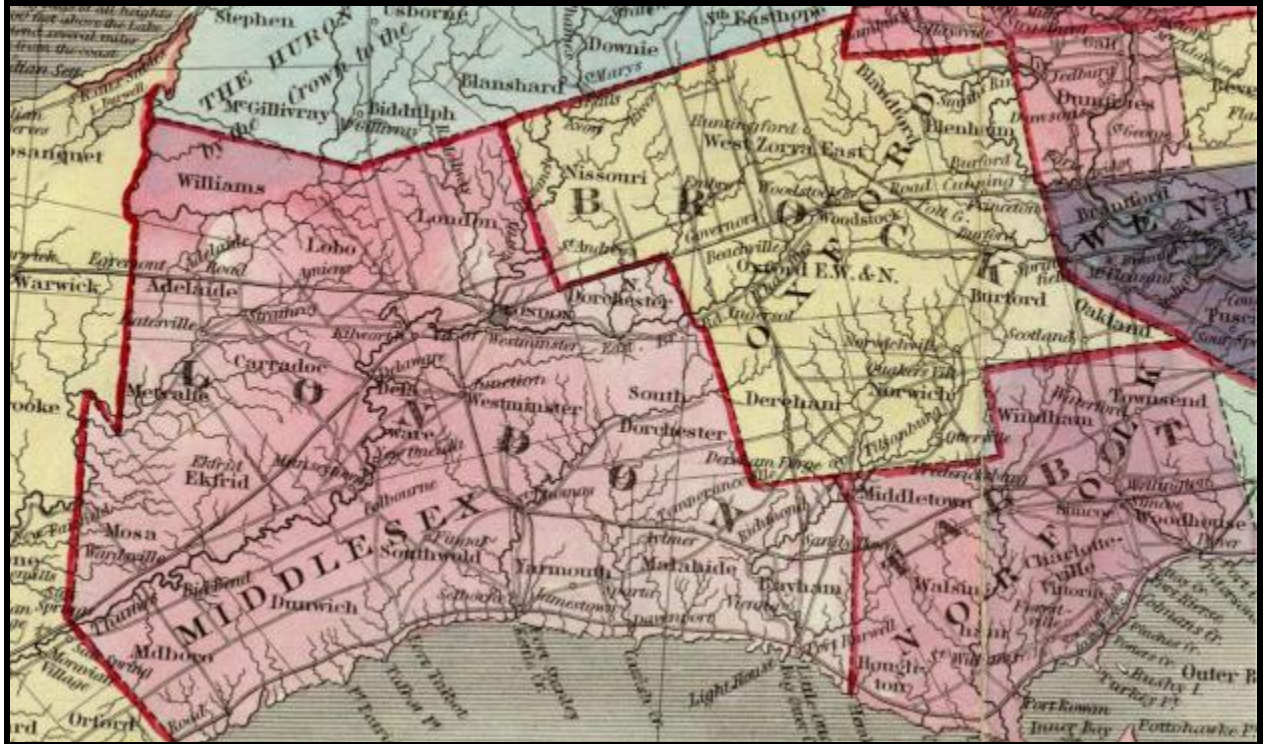
Map 10: Detail from D.W. Smyth's *A Map of the Province of Upper Canada* (1800)
(Cartography Associates 2009)



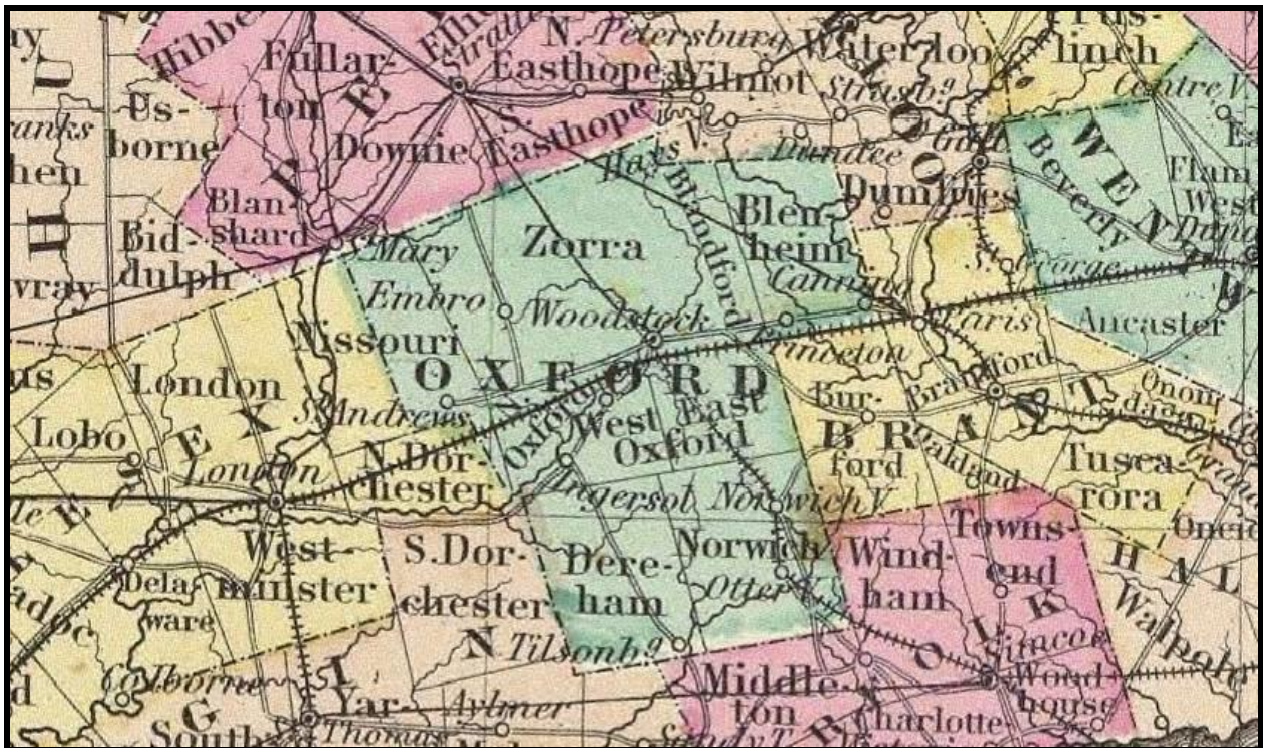
Map 11: Detail from J. Purdy's *A Map of Cabotia* (1814)
(Cartography Associates 2009)



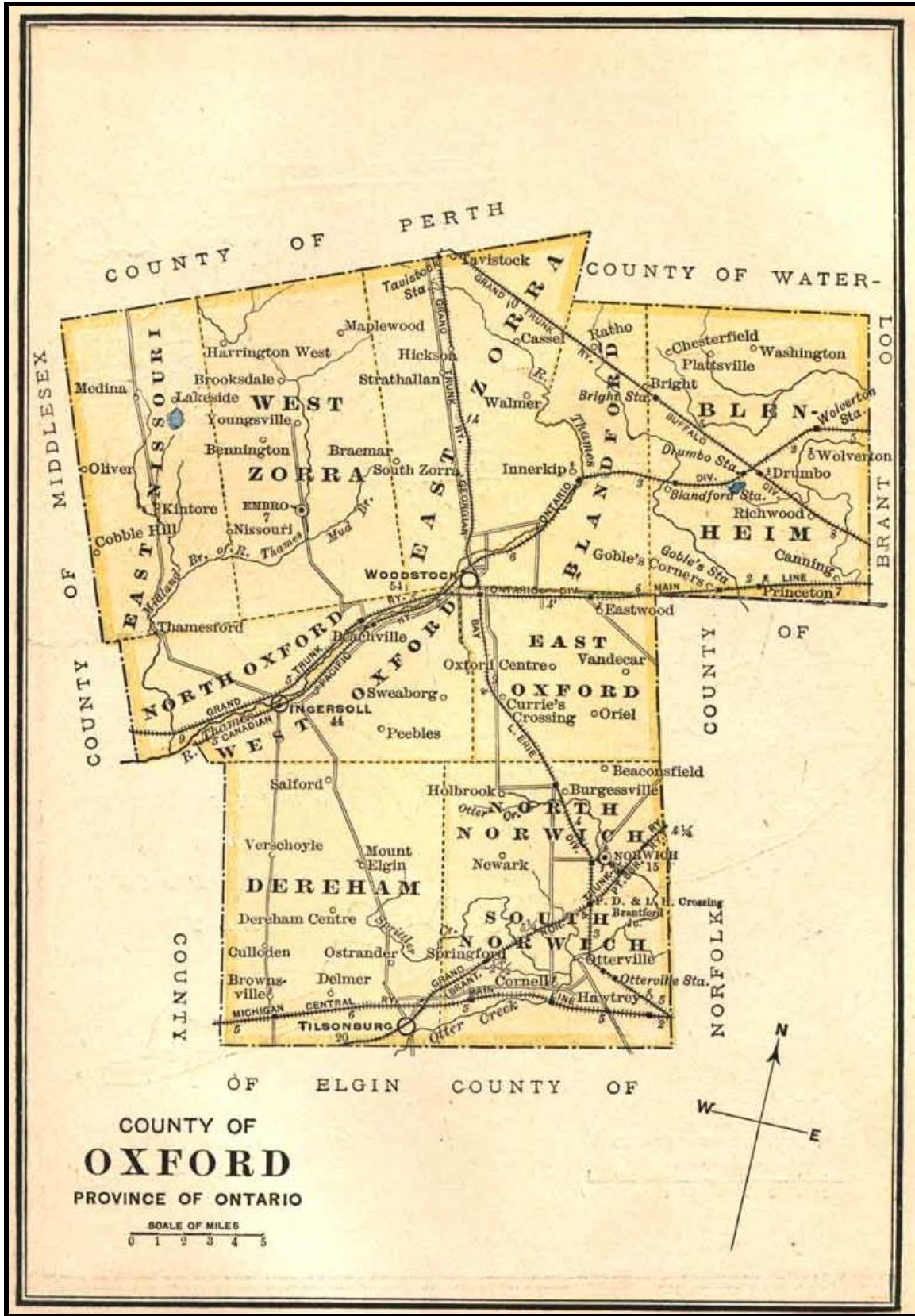
Map 12: Detail from J. Arrowsmith's *Upper Canada* (1837)
(Cartography Associates 2009)



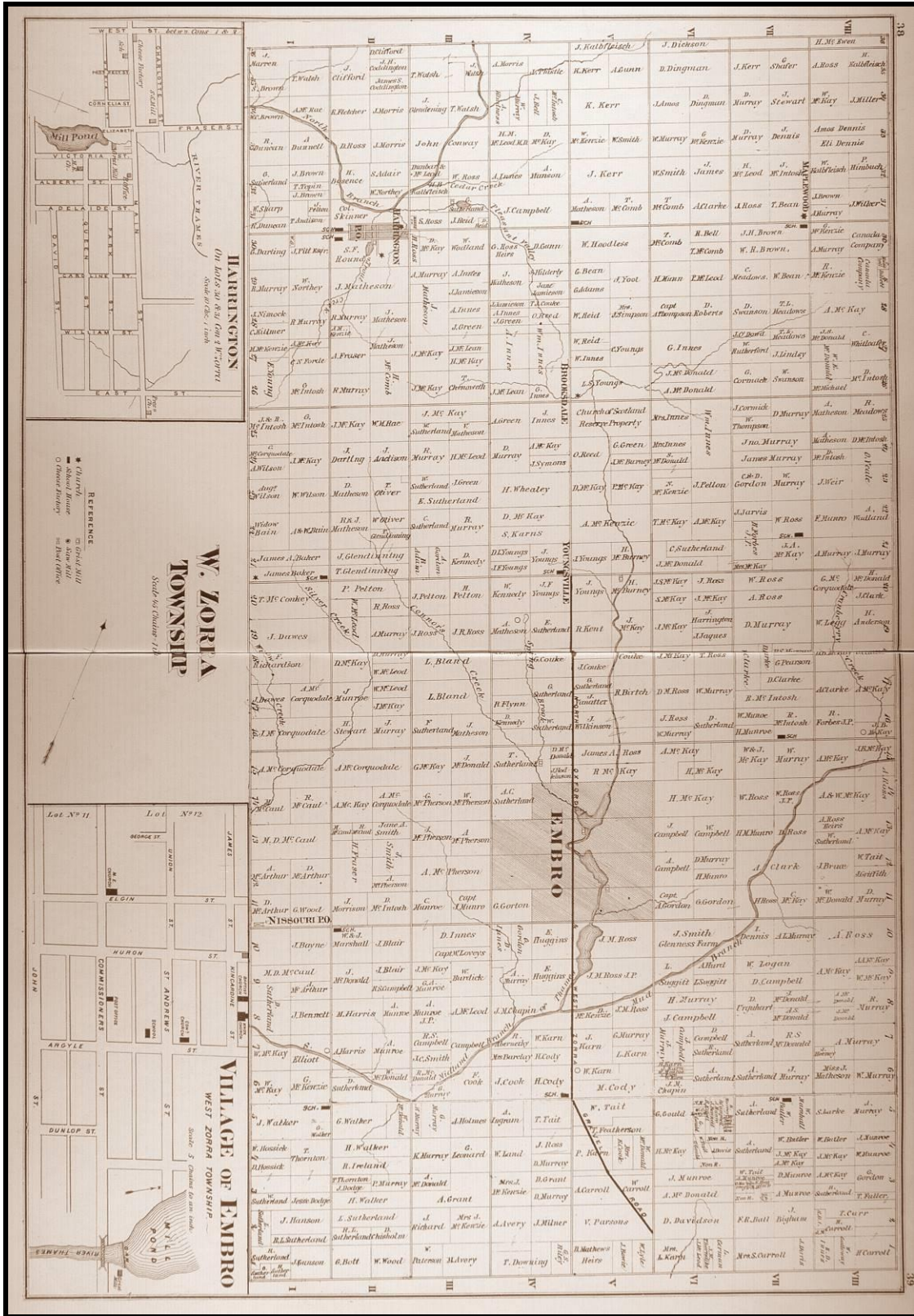
Map 13: Detail from J. Bouchette's *Map of the Provinces of Canada* (1846)
(Cartography Associates 2009)



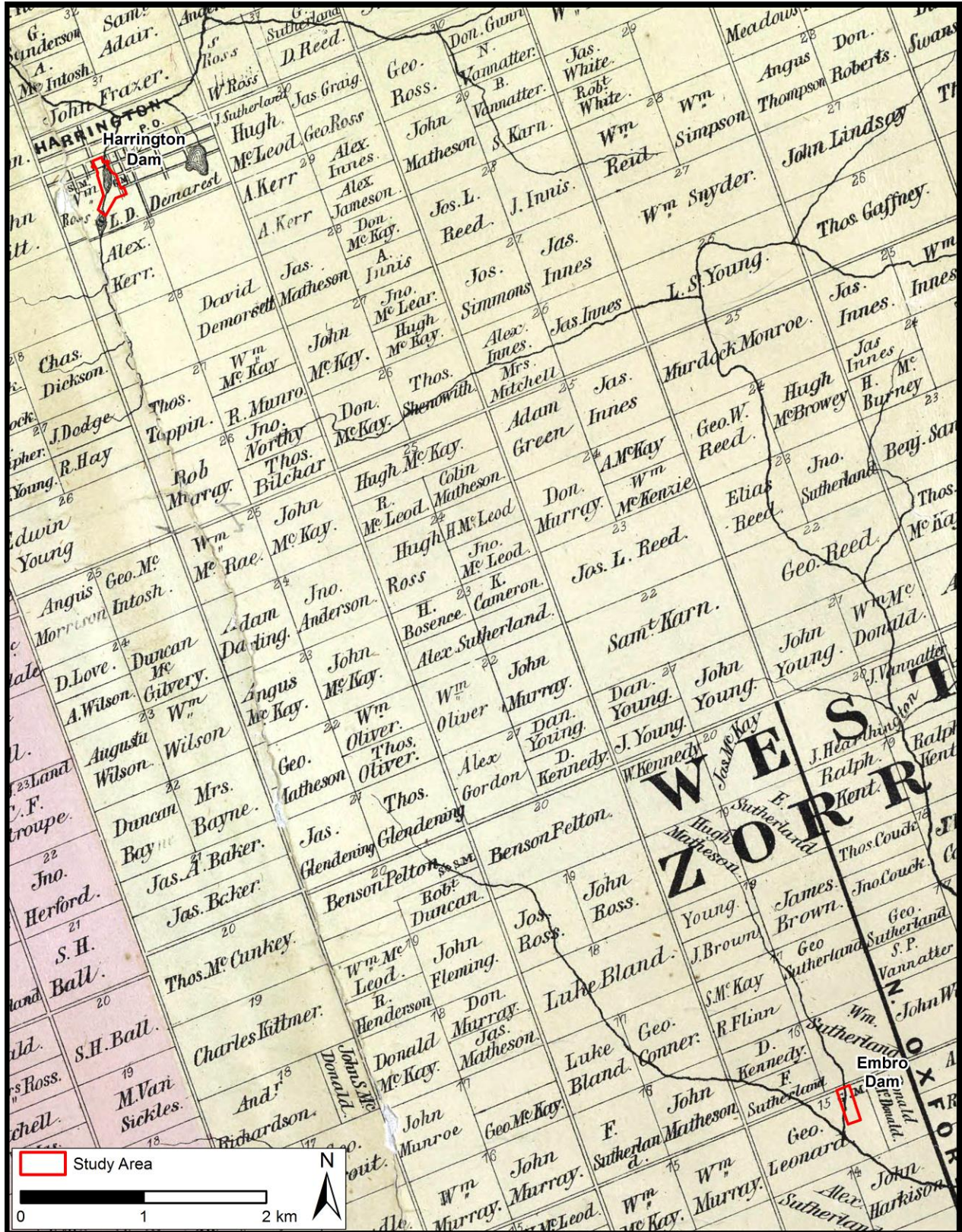
Map 14: Detail from G.W. Colton's *Canada West* (1856)
(Cartography Associates 2009)



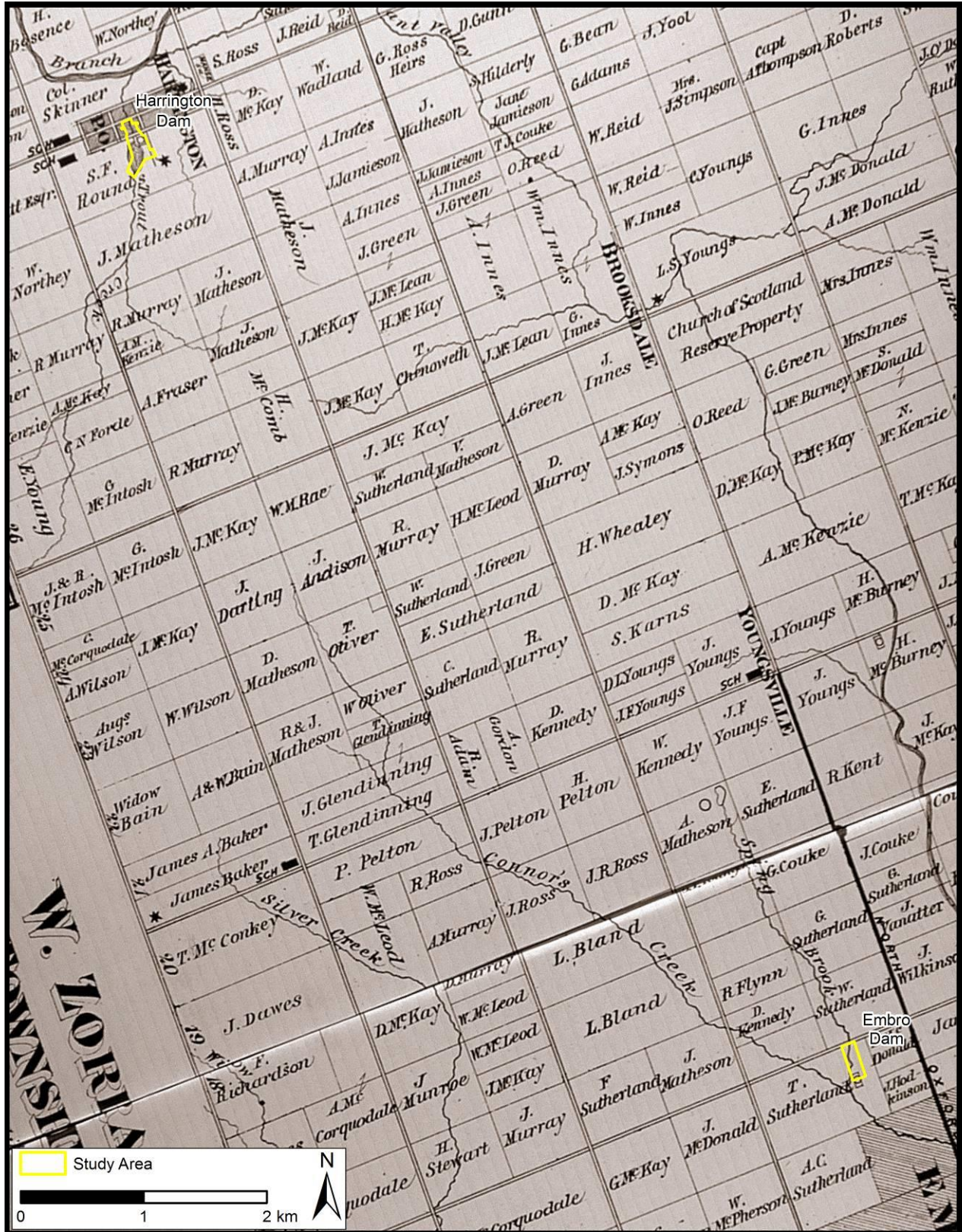
Map 15: Oxford County from W.J. Gage and Co.'s *Gage's County Atlas* (1886) (W.J. Gage and Co. 1886)



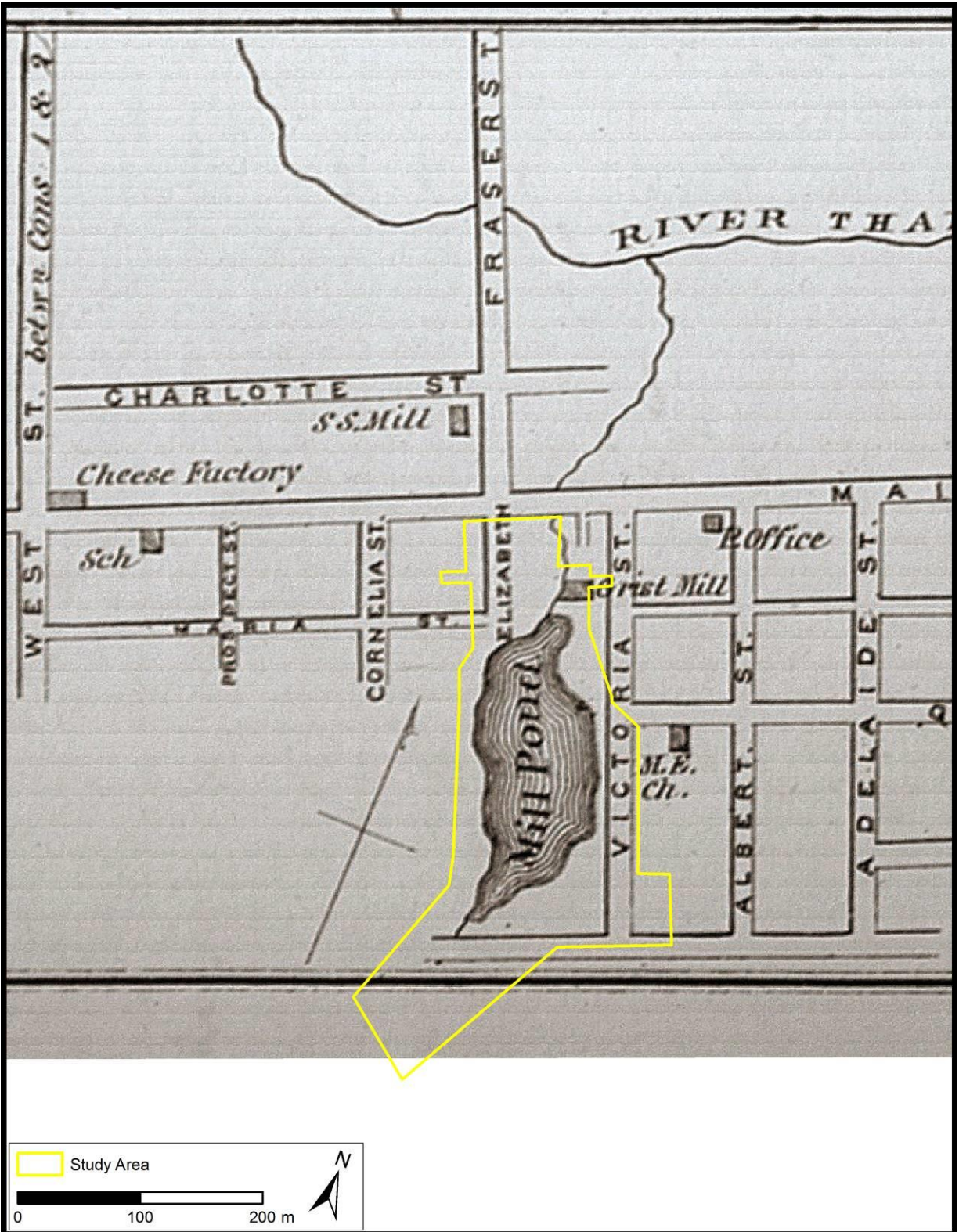
Map 16: West Zorra Township from Walker & Miles' Topographical and Historical Atlas of the County of Oxford (1876) (McGill University 2001)



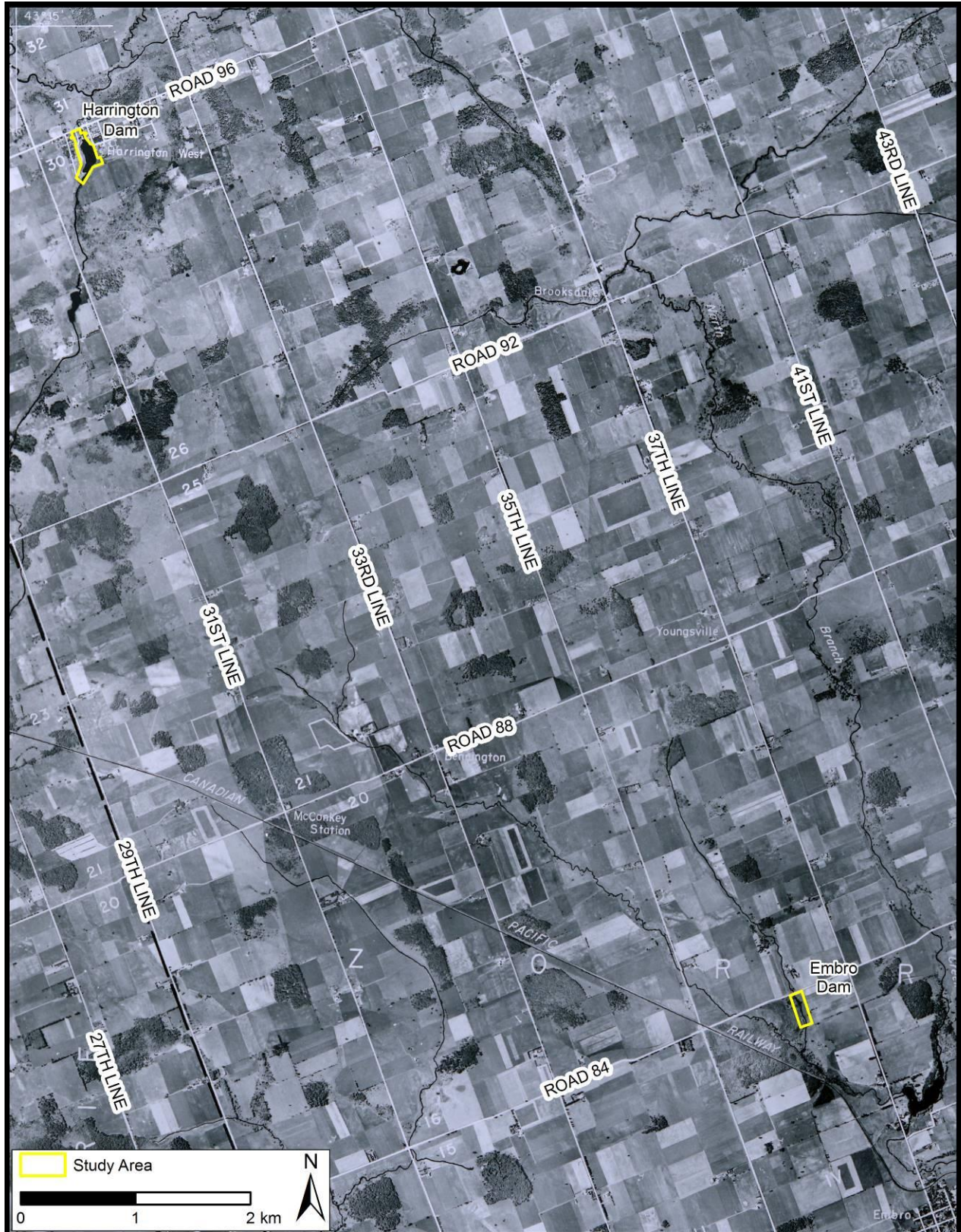
Map 17: Detail from G.C. Tremaine's *Tremaine's Map of the County of Oxford, Ontario* (1857), Showing the Study Area (OHCMP 2015)



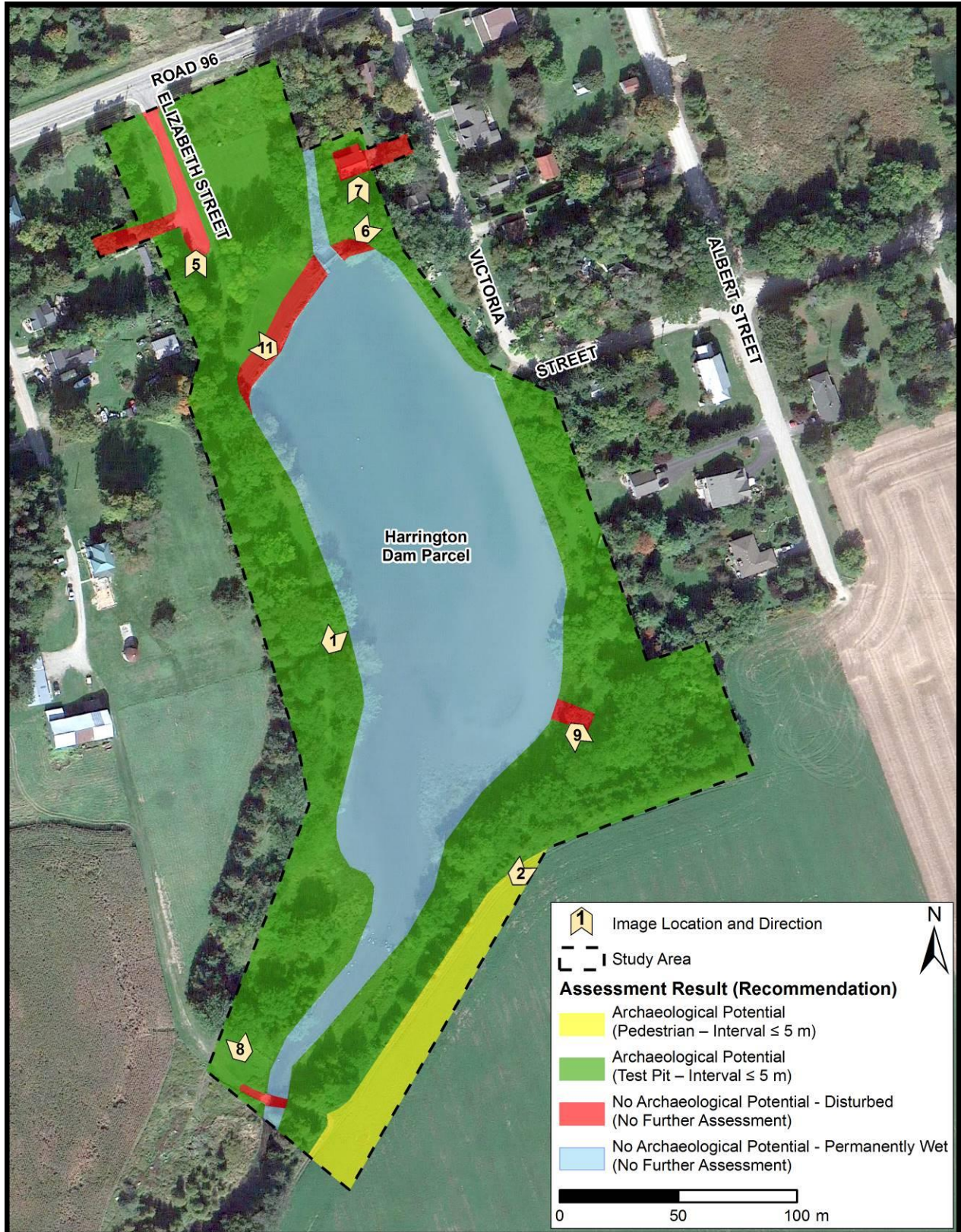
Map 18: West Zorra Township from Walker & Miles' Topographical and Historical Atlas of the County of Oxford (1876), Showing the Study Area (McGill University 2001)



**Map 19: Detail of Harrington from Walker & Miles' *Topographical and Historical Atlas of the County of Oxford* (1876)
(McGill University 2001)**



**Map 20: Historic Aerial Image (1954), Showing the Study Area
(University of Toronto 2009)**



Map 21: Assessment Results, Harrington Dam
(Google Earth 2013)



7.0 BIBLIOGRAPHY AND SOURCES

Archives of Ontario (AO)

2011 **The Changing Shape of Ontario: Early Districts and Counties 1788–1899**. Accessed online at: <http://www.archives.gov.on.ca/en/maps/ontario-districts.aspx>.

Cartography Associates

2009 **David Rumsey Map Collection**. Accessed online at: <http://www.davidrumsey.com/>.

Chapman, L.J. and D.F. Putnam

1984 **The Physiography of Southern Ontario, 3rd Edition**. Toronto: Ontario Geological Survey, Special Volume 2.

Coyne, J. H.

1895 **The Country of the Neutrals (As Far as Comprised in the County of Elgin): From Champlain to Talbot**. St. Thomas: Times Print.

Dale, G.

2010 *Restoring Harrington's Grist Mill*. In **Zorra Now (Autumn)**, pp. 6–7. Accessed online: <http://www.zorra.on.ca/Portals/8/Documents/Zorra%20Now/Harrington%20Grist%20Mill%20Project.pdf>.

Davidson, R.J.

1989 *Foundations of the Land Bedrock Geology*. In **The Natural History of Ontario**, edited by J.B. Theberge, pp. 36–47. Toronto: McClelland and Stewart Inc.

Dodd, Christine F., D.R. Poulton, P.A. Lennox, D.G. Smith and G.A. Warrick

1990 *The Middle Ontario Iroquoian Stage*. In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 321–359. Occasional Publications of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Ellis, C.J. and Deller, D.B.

1990 *Paleo-Indians*. In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 37–74. Occasional Publications of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Ellis, C.J., I.T. Kenyon, and M.W. Spence

1990 *The Archaic*. In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 65–124. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Finlayson, W.D.

1977 **The Saugeen Culture: A Middle Woodland Manifestation in Southwestern Ontario**. National Museum of Man Mercury Series, Archaeological Survey of Canada Paper No. 61. Ottawa: National Museums of Canada.

Fischer G. and M. Harris

2007 **Ontario's Historic Mills**. Erin: Boston Mills Press.

Fox, W.

1990 *The Middle Woodland to Late Woodland Transition*. In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 171–188. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Gentilcore, R.L. and C.G. Head

1984 **Ontario's History in Maps**. Toronto: University of Toronto Press.

Gervais, G.

2004 *Champlain and Ontario (1603-35)*. In **Champlain: The Birth of French America**, edited by R. Litalien and D. Vaugeois, pp. 180–190. Montreal: McGill-Queen's Press.

Google Earth

2013 **Google Earth Version 7.1.2.2041**. Accessed at: <http://www.google.com/earth/index.html>.

Harrington Community Club (HCC)

2008 **Harrington Grist Mill**. Accessed online at: http://genealogy.ocl.net/projects/harrington_grist_mill/index.shtml.

Hunt, G.T.

1940 **The Wars of the Iroquois: A Study in Intertribal Trade Relations**. Madison, Wisconsin: University of Wisconsin Press.

Jackson, L. J., C. Ellis, A. V. Morgan and J. H. McAndrews

2000 *Glacial Lake Levels and Eastern Great Lakes Palaeo-Indians*. **Geoarchaeology: An International Journal** 15(5):415–440.

Janusas, S.

1987 **An Analysis of the Historic Vegetation of the Regional Municipality of Waterloo**. Kitchener: Regional Municipality of Waterloo.

1988 **An Archaeological Perspective of an Historical Overview of the Regional Municipality of Waterloo**. Kitchener: Regional Municipality of Waterloo.

Karrow, P.F. and B.G. Warner

1990 *The Geological and Biological Environment for Human Occupation in Southern Ontario*. In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 5–35. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Lajeunesse, E.J.

1960 **The Windsor Border Region: Canada's Southernmost Frontier.** Toronto: The Champlain Society.

Lennox, P.A. and W.R. Fitzgerald.

1990 *The Culture History and Archaeology of the Neutral Iroquoians.* In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 405–456. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Mason, R.J.

1981 **Great Lakes Archaeology.** New York: Academic Press.

McGeorge, W.G.

1939 *Early Settlement and Surveys along the River Thames in Kent County.* In **Kentiana: The Story of the Settlement and Development of the County of Kent**, pp. 25–36. Chatham: The Kent Historical Society.

McGill University

2001 **The Canadian County Atlas Digital Project.** Accessed online at: <http://digital.library.mcgill.ca/countyatlas/default.htm>.

Métis Nation of Ontario (MNO)

2015 **Culture & Heritage: Who are the Métis.** Accessed online at: <http://www.metisnation.org/culture--heritage/who-are-the-metis.aspx>.

Ministry of Culture (MCL)

1997 **Conserving a Future for Our Past: Archaeology, Land Use Planning & Development in Ontario. An Educational Primer and Comprehensive Guide for Non-Specialists.** Toronto: Ministry of Culture.

Ministry of Natural Resources and Forestry (MNRF)

2014 **Ontario's Forest Regions.** Accessed online at: <http://www.ontario.ca/environment-and-energy/forest-regions>.

Ministry of Tourism and Culture (MTC)

2011 **Standards and Guidelines for Consultant Archaeologists.** Toronto: Ministry of Tourism and Culture.

Ministry of Tourism, Culture and Sport (MTCS)

2015 **Inquiry Concerning Sites within a One Kilometre Radius of the Project Area (Ontario Archaeological Sites Database) and Past Archaeological Work within 50 m of the Project Area.** Via PastPort, response provided by R. Von Bitter (May 19, 2015). MTCS.

Mississaugas of the New Credit First Nation (MNCFN)

2010 **The History of the Mississaugas of the New Credit First Nation.** Hagersville: Mississaugas of the New Credit First Nation.

Mulvany, C.P., G.M. Adam and C.B. Robinson

1885 **History of Toronto and the County of York, Ontario, Volume 1.** Toronto: C. Blackett Robinson.

Natural Resources Canada (NRC)

2002 **Ontario Relief.** Atlas of Canada, 6th Edition. Accessed online at: <http://geogratis.gc.ca/api/en/nrcan-rncan/ess-sst/632e8f7c-403a-57fe-849f-7cce3591d611.html>.

2010 **Historical Indian Treaties.** Atlas of Canada, 6th Edition. Accessed online at: <http://geogratis.gc.ca/api/en/nrcan-rncan/ess-sst/cb216b8f-8893-11e0-8ed0-6cf049291510.html>.

Ontario Historical County Maps Project (OHCMP)

2015 **Ontario Historical County Maps Project.** Accessed online at: <http://maps.library.utoronto.ca/hgis/countymaps/maps.html>.

Peters, J.H.

1986 *Transmission Line Planning and Archaeological Resources: A Model of Archaeological Potential for Southwestern Ontario.* In **Archaeological Consulting in Ontario: Papers of the London Conference 1985**, ed. W.A. Fox, pp. 19–27. Occasional Papers of the London Chapter, OAS Inc., No. 2. London: OAS.

Pihl, R.H.

1986 *Site Potential Modeling in Archaeological Consulting.* In **Archaeological Consulting in Ontario: Papers of the London Conference 1985**, ed. W.A. Fox, pp. 29–40. Occasional Papers of the London Chapter, OAS Inc., No. 2. London: OAS.

Ramsden, P.G.

1990 *The Hurons: Archaeology and Culture History.* In **The Archaeology of Southern Ontario to AD 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 361–384. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Ray, A.J.

2015 **Hudson's Bay Company.** Accessed online at: <http://www.thecanadianencyclopedia.com/en/article/hudsons-bay-company>.

Schmalz, P.S.

1977 **The History of the Saugeen Indians.** Ottawa: Ontario Historical Society.

Shenston, T.S.

1852 **The Oxford Gazetteer; Containing a Complete History of the County of Oxford.** Hamilton: Chatterton & Helliwell.

Smith, D.B.

1987 **Sacred Feathers: The Reverend Peter Jones (Kahkewaquonaby) and the Mississauga Indians.** Toronto: University of Toronto Press.

Smith, W.H.

1846 **Smith's Canadian Gazetteer: Comprising Statistical and General Information Respecting all Parts of the Upper Province, or Canada West.** Toronto: H. & W. Rowsell.

Spence, M.W., R.H. Pihl and C. Murphy

1990 *Cultural Complexes of the Early and Middle Woodland Periods.* In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 125–170. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Stagg, R.

2013 **Charles Duncombe.** Accessed online at: <http://www.thecanadianencyclopedia.com/en/article/charles-duncombe/>.

Surtees, R.J.

1994 *Land Cessions, 1763–1830.* In **Aboriginal Ontario: Historical Perspectives on the First Nations**, edited by E.S. Rogers and D.B. Smith, pp. 92–121. Toronto: Dundurn Press.

Sutherland, J.

1862 **County of Oxford Gazetteer and General Business Directory for 1862-3.** Ingersoll.

University of Toronto

2009 **Digital Aerial Photographs, Southern Ontario 1954 – West Index.** Accessed online at: http://maps.library.utoronto.ca/data/on/AP_1954/indexwest.html.

Upper Thames River Conservation Authority (UTRCA)

2015 **2012 Upper Thames River Watershed Report Cards.** Accessed online at: <http://thamesriver.on.ca/watershed-health/watershed-report-cards/>.

W.J. Gage and Co.

1886 **Gage's County Atlas.** Toronto: W.J. Gage and Co.

Warrick, G.

2000 *The Precontact Iroquoian Occupation of Southern Ontario.* **Journal of World Prehistory** 14(4):415–456.

2005 *Finding the Invisible Mississaugas of Davisville.* **Grand Actions** 10(4):1–2.

Wicklund, R.E. and N.R. Richards

1961 **The Soil Survey of Oxford County.** Report No. 28 of the Ontario Soil Survey. Guelph: Research Branch, Canada Department of Agriculture and the Ontario Agricultural College.

Williamson, R.F.

1990 *The Early Iroquoian Period of Southern Ontario.* In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 291–320. Occasional Publications of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Williamson, R.F. (ed.)

2008 **Toronto: A Short Illustrated History of its First 12,000 Years.** Toronto: James Lorimer & Company Ltd.

Wright, J.V.

1972 **Ontario Prehistory: An Eleven-Thousand-Year Archaeological Outline.** Archaeological Survey of Canada, National Museum of Man. Ottawa: National Museums of Canada.

Young, P.M., M.R. Horne, C.D. Varley, P.J. Racher and A.J. Clish

1995 **A Biophysical Model for Prehistoric Archaeological Sites in Southern Ontario.** Toronto: Research and Development Branch, Ministry of Transportation.

Zadro, E. and P. Delamere

2009 **Southern Ontario Railway Map.** Accessed online at:
<http://individual.utoronto.ca/sorailmap/>.