ORIGINAL

# Stage 1 Archaeological Assessment
# (Background Research and Property Inspection)

**Erb Street Widening and Corridor Study**
**Municipal Class Environmental Assessment**
**Erb Street from Fischer-Hallman Road to Wilmot Line**
**Part of Lots 32 and 41, German Company Tract**
**Former Township of Waterloo, County of Waterloo**
**City of Waterloo, Regional Municipality of Waterloo, Ontario**

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## EXECUTIVE SUMMARY

Archaeological Services Inc. (ASI) was contracted by WalterFedy on behalf of the Regional Municipality of Waterloo to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Erb Street Widening and Corridor Study Municipal Class Environmental Assessment (EA) study. The purpose of this project is to undertake an EA for the widening and rehabilitation of Erb Street from Fischer-Hallman Road to Wilmot Line including intersection improvements at Erb Street and Wilmot Line, in the City of Waterloo. This assessment is being conducted under Schedule C of the Municipal Class EA process.

The background research determined that seven previously registered archaeological sites are located within one kilometre of the study area. A review of the historical and archaeological contexts of the study area also suggested that it has potential for the identification of Aboriginal and Euro-Canadian archaeological resources.

The property inspection identified some areas which possess archaeological potential and will require Stage 2 archaeological assessment. Other areas within and adjacent to the Erb Street right of way (ROW) do not retain archaeological potential.

In light of these results, the following recommendations are made:

1. Several areas within in the Erb Street Widening and Corridor Study Stage 1 study area possess archaeological potential and will require Stage 2 archaeological assessment by a combination of test-pit survey at five metre intervals and pedestrian survey at five metre intervals prior to any land disturbance by the project;

2. ROW lands and some lands adjacent to within the study area are documented to not retain archaeological potential on account of deep and extensive land disturbance. A part of the study area has been documented to have low and wet conditions. These lands do not require further archaeological assessment; and

3. Should the proposed work extend beyond the current study area then further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

**ARCHAEOLOGICAL SERVICES INC.**
**ENVIRONMENTAL ASSESSMENT DIVISION**

**PROJECT PERSONNEL**

| | |
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The S & G, Section 1, discusses the objectives of a Stage 1 archaeological assessment as follows:

- To provide information about the history, current land conditions, geography, and previous archaeological fieldwork of the study area;
- To evaluate in detail the archaeological potential of the study area that can be used, if necessary, to support recommendations for Stage 2 archaeological assessment for all or parts of the study area; and,
- To recommend appropriate strategies for Stage 2 archaeological assessment, if necessary.

This report describes the Stage 1 archaeological assessment that was conducted for this project and is organized as follows: Section 1.0 summarizes the background study that was conducted to provide the historical and archaeological contexts for the project study area; Section 2.0 addresses the field methods used for the property inspection that was undertaken to document its general environment, current land use history and conditions of the study area; Section 3.0 analyses the characteristics of the project study area and evaluates its archaeological potential; Section 4.0 provides recommendations for the next assessment steps; and the remaining sections contain other report information that is required by the S & G, e.g., advice on compliance with legislation, works cited, mapping and photo-documentation.

### 1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act*, RSO (1990) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted under Schedule C of the Municipal Class EA process.

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (2005), the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Tourism, Culture and Sport (MTCS) and the Municipal Engineers' Association document *Municipal Class Environmental Assessment* (2000, as amended in 2007 and 2011).

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment was granted to ASI by WalterFedy on April 25, 2014.

## 1.2 Historical Context

The purpose of this section, according to the S & G, Section 7.5.7, Standard 1, is to describe the past and present land use and the settlement history and any other relevant historical information pertaining to the study area. A summary is first presented of the current understanding of the Aboriginal land use of the study area. This is then followed by a review of the historical Euro-Canadian settlement history.

### *1.2.1 Aboriginal Land Use and Settlement*

Southern Ontario has been occupied by human populations, since the retreat of the Laurentide glacier, approximately 13,000 before present (BP) (Ferris 2013: 13). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 BP, the environment had progressively warmed (Edwards and Fritz 1988) and populations now occupied less extensive territories (Ellis and Deller 1990: 62-63).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels and many sites which would have been located on those former shorelines, now submerged. This period produces the earliest evidence of heavy wood working tools and is indicative of greater investment of labour in felling trees for fuel, to build shelter, or to produce crafts and is ultimately indicative of prolonged seasonal residency at sites. By approximately 8,000 BP, evidence exists for polished stone implements and worked native copper. The latter's source from the north shore of Lake Superior is evidence of extensive exchange networks. Between approximately 4,500-3,000 BP, the earliest evidence exists at this time of cemeteries, indicative of increased social organization and investment of labour into social infrastructure, and establishing territories (Ellis *et al.* 1990; Ellis *et al.* 2009; *cf.* Brown 1995: 13).

Between 3,000-2,500 BP, settlement and subsistence systems are not entirely understood. Populations continued a semi-permanent existence and exploited seasonally available resources, and the harvesting of spawning fish continued to be an important part of their subsistence. Evidence still exists for extensive and complex exchange networks (Spence *et al.* 1990: 136, 138). By approximately 2,000 BP, evidence exists for macro-band camps, focussing on the seasonal exploitation of resources such as spawning fish and wild rice (Spence *et al.* 1990: 155, 164). It is also during this period that maize was first introduced into southern Ontario, though it would have only supplemented people's diet (Birch and Williamson 2013: 13-15). Bands likely retreated to interior camps during the winter.

By approximately 1,000 BP, until approximately 300 BP, archaeological evidence indicates lifeways similar to the historically described Aboriginal groups. Populations in southern Ontario were Iroquoian speaking though full expression of Iroquoian culture is not recognised archaeologically until the fourteenth century AD. During the Early Iroquoian phase (AD 1000-AD 1300), the communal site is replaced by the village focussed on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson 1990: 317). By the second quarter of the first millennium BP, during the Middle Iroquoian phase (AD 1300-AD 1450), this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd *et al.* 1990: 343). In the Late Iroquoian phase (AD 1450-AD 1649), this process continued with the coalescence of these small villages into larger communities (Birch and Williamson 2013). Through this process, the socio-political organization of the Aboriginal Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed.

Samuel de Champlain in 1615 reported that a group of Iroquoian-speaking people situated between the New York Iroquois and the Huron-Wendat were at peace and remained "la nation neutre". In subsequent years, the French visited and traded among the Neutral, but the first documented visit was not until 1626, when the Recollet missionary Joseph de la Roche Daillon recorded his visit to the villages of the Attiwandaron, whose name in the Huron-Wendat language meant "those who speak a slightly different tongue" (the Neutral apparently referred to the Huron-Wendat by the same term). Like the Huron-Wendat, Petun and New York Iroquois, the Neutral people were settled village agriculturalists. The Neutral territory included discrete settlement clusters in the lower Grand River, Fairchild-Big Creek, Upper Twenty Mile Creek, Spencer-Bronte Creek drainages, Milton, Grimsby, Eastern Niagara Escarpment and Onondaga Escarpment areas. The study area is situated on the periphery of the Kitchener settlement cluster (Lennox and Fitzgerald 1990: Figure 13.1; Table 13.1). The Kitchener settlement cluster has documented occupation from the fifteenth century (e.g. Dry Lake site - Horne 1987) until the sixteenth century (e.g. Waterloo site - Horne 1987).

Between 1647 and 1651, the Neutral were decimated by epidemics and ultimately dispersed by the New York Iroquois, who subsequently settled along strategic trade routes on the north shore of Lake Ontario for a brief period during the mid seventeenth-century. Compared to settlements of the New York Iroquois, the "Iroquois du Nord" occupation of the landscape was less intensive. Only seven villages are identified by the early historic cartographers on the north shore and they are documented as considerably smaller than those in New York State. The populations were agriculturalists, growing maize, pumpkins and squash. These settlements also played the important alternate role of serving as stopovers and bases for New York Iroquois travelling to the north shore for the annual beaver hunt (Konrad 1974).

Beginning in the mid-late seventeenth century, the Mississaugas began to replace the Iroquois as the controlling Aboriginal group in the north shore since the Iroquois confederacy had overstretched their territory between the 1650s and 1670s (Williamson 2008). The Iroquois could not hold the region and agreed to form an alliance with the Mississaugas and share hunting territories with them. The Mississaugas traded with both the British and the French in order to have wider access to European materials at better prices and acted as trade intermediaries between the British and tribes in the north.

Following the 1764 Niagara Peace Treaty, and the follow-up treaties with Pontiac, the English colonial government considered the Mississaugas to be their allies since they had accepted the Covenant Chain. The English administrators followed the terms of the Royal Proclamation and insured that no settlements were made in the hunting grounds that had been reserved for their use (Johnston 1964; Lytwyn 2005).

Six Nations Iroquois leaders also pressured the English colonial government to respect their old treaties, especially those concerning access to hunting grounds north of Lake Ontario. In 1765, Daniel Claus, Deputy Superintendent General of Indian Affairs, wrote to Sir William Johnson and explained that he had been told that the Six Nations Iroquois' old hunting grounds were to be treated in common, "and free to one Nation as to another, in the same manner as a large Dish of Meat would be to a Company of People who were invited to eat it, when every Guest has liberty to cut as they pleased" (Johnson 1921: 917). In 1767, Chiefs from Oka and Caughnawaga met with the British Governor and also reminded him about the 1701 Peace Treaty and the promise to have shared hunting territories with the Mississaugas (Johnston 1964; Lytwyn 2005).

During the American Revolution, Mississauga warriors supported the English military. Rebel forces destroyed the villages of the Six Nations Iroquois in New York and many people were forced to move to the Niagara area. When Six Nations Iroquois leaders learned that the English planned to make a peace

treaty with the Americans and establish a boundary line that would give away their homelands they were angry. The English government offered to protect Six Nations Iroquois peoples and give them land within their boundaries. On August 8, 1783, Lord North instructed Governor Haldimand to set apart land for the Six Nations Iroquois and ensure that they carried on their hunting and fur trading with the British. On May 22, 1784, a tract of land along the Grand River was purchased by the British government from the Mississaugas who lived in the vicinity (Johnston 1964; Lytwyn 2005). The land set apart is called the Haldimand Tract, and the study area is situated in Block 2.

Joseph Brant led New York Iroquois loyalists (1600 people) to the Haldimand tract in 1784 and in the fall of 1784, Sir Frederick Haldimand formally awarded the tract to the Mohawks "and others of the Six Nations [Iroquois]." They were authorized to "Settle upon the Banks of the River" and were allotted "for that Purpose six miles [10 km] deep from each Side of [it] beginning at Lake Erie, & extending in the Proportion to [its] Head." The precise boundaries of the grant were unclear as there was no survey; for example, the northern boundary of the original deed from the Mississaugas to the Crown stated that the line extended "from the creek that falls from a small lake into…the bay known by the name of Waghquata [Burlington Bay]…until it strikes the river La Tranche [Thames]." The 1790 survey by Augustus Jones intentionally failed to include the headwaters of the Grand, an action made all the more difficult to address given the unclear description of the extent in the original deeds (Johnston 1964; Lytwyn 2005).

Brant regarded the territory as his own to manage on behalf of the Confederacy and interpreted the proclamation as tantamount to full national recognition of the Mohawks and fellow tribesmen. This interpretation was strongly denied by the British (Johnston 1964; Lytwyn 2005).

In fact, appointed as Lieutenant Governor of the new colony of Upper Canada in 1791, Simcoe refused to permit the Six Nations Iroquois to sell/lease any part of their reserve because they were arranged independently of the Crown. Brant, on the other hand, argued for the Six Nations Iroquois' need for an immediate assured income from land sales as they could no longer hope to survive by hunting exclusively. Simcoe thought that if such practices were permitted, it could lead to other Europeans attempting to seize control by any means of the better part of the Six Nations Iroquois' reserve and it was therefore unresolved as to whether Six Nations Iroquois people could dispose of their lands directly to whomever they chose (Johnston 1964; Lytwyn 2005).

In the first few years, Brant, who had been described, by some, as a Europeanized entrepreneur, took the initiative and invited white friends and acquaintances to the tract and provided them with rough land titles. Over the next 25 years (1784-1810), a considerable number of Europeans and Americans obtained similar leases authorizing them (in Brant's opinion) to occupy and improve lots overlooking the river (Johnston 1964; Lytwyn 2005).

The subsequent Peter Russel administration (1797-1798), however, recognized the leases and the sales that Brant arranged with white settlers along the Grand River Valley. Trustees were appointed to act on the behalf of the Six Nations Iroquois with the authority to receive payment of purchases. On the other hand, some Six Nations Iroquois thought that the land sale practices violated the ancient principle that land was not a "commodity which could be conveyed." Two Mohawk sachems even tried to take up arms to depose Brant because they did not agree with his ways. Their efforts were naught and they returned to the Bay of Quinte where other Six Nation Iroquois peoples, led by Sachem John Deseronto, had settled after the American Revolution (Johnston 1964; Lytwyn 2005).

A formal investigation of the matter was launched in 1812 although leases were not set aside. Due to problems of white encroachment including squatters without titles, settlers who bought land from individuals or through other transactions with Six Nations Iroquois, many of the leases were confirmed by the Crown in 1834-5. Unauthorized sales and agreements remained rampant (Johnston 1964; Lytwyn 2005).

In 1841, Samuel P. Jarvis (Indian Superintendent) informed the Six Nations Iroquois that the only way to keep white intruders off their land would be for them to surrender it to the Crown, to be administered for their sole benefit. With this plan, the Six Nations Iroquois would retain lands that they actually occupied and a reserve of approximately 8,094 hectares (ha). The surrender of land was made by the Confederacy in January, 1841 (Johnston 1964; Lytwyn 2005).

Today, this history and those surrenders are still contested and there are numerous specific land claims that have been filed by the Six Nations Iroquois with the federal government in regard to lands within the Haldimand Tract (Johnston 1964; Lytwyn 2005).

### *1.2.2 Historic Euro-Canadian Land Use: Township Survey and Settlement*

Historically, the study area is located in the Former Township of Waterloo, Waterloo County in part of Lots 32 and 41, German Co. Tract.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries, are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those which are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 m of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Aboriginal pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Aboriginal trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

*Waterloo Township*

The historic Township of Waterloo was originally known as Block Two of the Grand River land grant which was deeded to the Six Nations Iroquois by the British in 1784 for their loyalty to the Crown in the

American War of Independence. In 1796, Block Two, a 38,045 ha tract, was acquired by Richard Beasley from Joseph Brant on behalf of the Six Nations. He subdivided and sold the land, with an approximately 24,281 ha tract of land going to the German Company of Pennsylvania, in November 1803 (Janusas 1988: 2). Company members included Samuel and John Bricker; and Daniel, Jacob, and John Erb. The German Company of Pennsylvania had the lands surveyed by Augustus Jones to subdivide the land into 128 farm lots of approximately 181 ha each and 32 farm lots of approximately 34 ha each (Janusas 1988: 96).

When Block Two was incorporated into the District of Gore (County of Halton) in 1816, it was named Waterloo Township, in honour of the battle that ended the Napoleonic Wars in Europe. It remained part of Halton County in the District of Gore until 1842 and then part of the District of Wellington. The County of Waterloo did not come into being until 1852 (Janusas 1988: 2).

The first immigrants to settle in Waterloo Township were almost exclusively German Mennonites from Pennsylvania, who had originally emigrated from Switzerland, Germany and France. Most of these settlers were farmers but many were tradesmen and millers. Later settlers were generally of Scottish, English, Irish, and continental German heritage, many of them farmers, but a majority of them were artisans and tradesmen. When the railway was laid through Waterloo Township in the mid-nineteenth century, it became the leading industrial center of Waterloo County (Janusas 1988: 10-12).

Abraham Erb purchased approximately 181 ha of land in 1805 and became the first settler in the City of Waterloo. He transferred a portion of his land and ownership of two mills to Jacob Snider in 1829. Snider's son inherited approximately 129 ha which he sold to John Hoffman and Isaac Weber, who sectioned and sold the lands in 1854, at which point the population of Waterloo began to expand (Janusas 1988: 102).

In the mid-1850s, the defining development of Waterloo Township and Waterloo County was the construction of the railway. The first railway line built into the township was a main line of the Grand Trunk Railway from Toronto, laid through in 1856. A number of other railway lines were soon laid across the township including: a Grand Trunk branch between Preston and Berlin in 1857; a Great Western line from Galt, Preston, and Guelph in 1857; a Grand Trunk branch between Berlin (Kitchener) and Galt in 1882; and a Grand Trunk Branch between Waterloo and Elmira in 1891.

*Rummelhardt School*

The Rummelhardt School is situated at 600 Erb Street West. The property was purchased in 1843 and a log-structure school house was built on the site the same year. This log-structure was replaced by the extant fieldstone structure in 1867. The structure is the only stone schoolhouse n the City of Waterloo and was designated in August 2000 (City of Waterloo n.d.).

### *1.2.3 Historic Map Review*

The 1861 *Tremaine's Map of the County of Waterloo, Canada West* and the 1881 *Illustrated Historical Atlas of the County of Waterloo* were reviewed to determine the potential for the presence of historical features within or abutting the study area during the nineteenth century (Figures 2 and 3). It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases.

Use of historic map sources to reconstruct/predict the location of former features within the modern landscape generally proceeds by using common reference points between the various sources. These sources are then geo-referenced in order to provide the most accurate determination of the location of any property on historic mapping sources. The results of such exercises are often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process. These include the vagaries of map production (both past and present), the need to resolve differences of scale and resolution, and distortions introduced by reproduction of the sources. To a large degree, the significance of such margins of error is dependent on the size of the feature one is attempting to plot, the constancy of reference points, the distances between them, and the consistency with which both they and the target feature are depicted on the period mapping.

The 1861 map of the study area indicates land tenure of the land parcels however the degraded condition of the map has made this information barely legible. The map does, however, clearly indicate the Rummelhardt school house (Figure 2; *c.f.* Section 1.2.2). The 1881 map does not indicate land tenure, however, but likewise depicts the Rummelhardt schoolhouse (Figure 3).

The historic mapping also demonstrates that Erb Street West, Fischer Hallman Road, Erbsville Court, West Hill Drive, the southern part of the alignment of the driveway of 667 Pine Row Crescent and Wilmot Line are all historic transportation routes.

Transportation and communication networks are important because they serve to integrate social and economic activities between disparate settlement centres. As these settlements grew, and traffic increased between them, toll gates, taverns, hotels and other services for travellers were established where major transportation routes were crossed. Early overland routes followed the natural topography, avoiding swamps or rocky outcrops.

### *1.2.4 Summary of Historical Context*

The background research demonstrates that the study area has been occupied by Aboriginal peoples for thousands of years and is located upon the periphery of a documented Neutral Nation settlement cluster. It was subsequently utilised by the Seneca and Mississauga for resource extraction and later settled by the Six Nations Iroquois.

The background research and historic mapping also demonstrates that the study area is located in the Former Township of Waterloo, County of Waterloo in part of Lots 32 and 41, German Co. Tract. Both historic maps indicate that the study area is located in proximity to a historic schoolhouse (Rummelhardt

Schoolhouse) and that the study area is aligned with and intersected by multiple historic transportation routes.

## 1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the study area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites housed at the MTCS; published and unpublished documentary sources; and the files of ASI.

### *1.3.1 Current Land Use and Field Conditions*

The study area is aligned with Erb Street and spans from Fischer-Hallman Road South in the east to Wilmot Line in the west. The study area includes right-of-way (ROW) lands as well as lands adjacent to the ROW, predominantly surrounded by residential development that is expanding westward along Erb Street. The western end of the study area is still a wider rural landscape with some agricultural land use. Many of the original rural residences along the study area have been demolished, and there is some industrial land use on the south side of Erb Street in the western end of the study area.

### *1.3.2 Geography*

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils, are briefly discussed for the study area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow and Warner 1990: Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include: elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places,

such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including; food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S *&* *G*, Section 1.3.1).

The study area is situated within the Waterloo Hills physiographic region of southern Ontario in kame moraine. The rolling terrain of ridges and hills was formed as till and kame moraines. Flowing southward through the moraines is the Grand River spillway comprised of level alluvial terraces (Chapman and Putnam 1984: 136). North of Waterloo, the spillway channel splits into two channels that rejoin south of Kitchener. The present course of the Grand River follows the eastern channel while Schneider Creek follows the western channel. The study area is situated to the north of the southern confluence. Terrain in the study area is complex, varying from almost level to strongly sloping in the upland area that overlooks the large river valley.

Figures 4 and 5 depict surficial geology and soil drainage for the study area, respectively. The surficial geology mapping demonstrates that the study area contains areas of diamicton (poorly sorted sediments) and sand. Soil drainage information is incomplete for the study area, however it does include some areas of well-drained soils.

Soils within the study area consist of: Brant loam with Tuscola loam; Bennington loam with St. Clements silt loam and Tavistock loam; St. Clements silt loam with St. Clements sandy loam and Wellesley silt loam; and, Waterloo fine sandy loam with St. Clements silt loam and Heidelberg fine sandy loam. The study area also includes urban areas for which soils information is not available (Dept. of Agriculture and Agri-Food Canada 1996).

Areas of the above soil distinction are described by their dominant (former) and subdominant (latter) soil types. As the subdominant soil types are described on the virtue that they exist as concentrations within the dominant soil type (Ecologistics Ltd. 1996: 27), they merit expanded description in addition to dominant soil types. Expanded description of soil types is given below.

Brant loam is developed on well-drained lacustrine sediments and occurs on moderately sloping hummocky topography. Soil colour ranges from very dark brown to brown through the horizon. Soil pH ranges from basic to slightly acidic through the horizon (Presant and Wicklund 1971: 25).

Tuscola loam is developed on imperfectly drained loam sediments. This soil type typically occurs on low-lying and depressional areas as well as in channels. This soil typically has a seasonally high water table. Soil colour ranges from very dark brown to mottled brown through the horizon. Soil pH is typically basic (Presant and Wicklund 1971: 39).

Bennington loam is developed on well-drained deposits of loam overlaying clay deposits. Topography may be relative steep or complex. In areas of slope this soil may be subject to seepage. Soil colour ranges from very dark greyish brown to light olive brown through the horizon. Soil pH is basic (Presant and Wicklund 1971: 23-24).

St. Clements silt loam and sandy loam soils are developed on well-drained materials consisting mainly of silty clay loam and silty clay. Soil topography is varied. Soil colour ranges from very dark greyish brown to brown through the horizon. Soil pH is typically basic (Presant and Wicklund 1971: 37-38).

Tavistock loam is an imperfectly drained soil that has developed on loam and silt loam overlaying clay. Organic content is typically high and is often stonefree. Soil slop is sometime complex and on slopes this soil may be subject to seepage. Soil colour ranges from very dark gray to mottled brown through the horizon. Soil pH ranges from basic to acidic through the horizon (Presant and Wicklund 1971: 38-39).

Wellesley silt loam is an imperfectly drained soil and is typically found in level or gently sloping areas, though the slope may be complex. Soil colour ranges from very dark gray to mottled dark brown through the horizon. Soil pH is typically basic (Presant and Wicklund 1971: 40).

Waterloo fine sandy loam is a well-drained soil typically occurring on fairly steep slopes though slope may be complex. Organic content through the horizon ranges from medium to high. Soil colour ranges from very dark grayish brown to brown through the horizon. Soil pH ranges between neutral to acidic through the horizon (Presant and Wicklund 1971: 39-40).

Heidelberg fine sandy loam is an imperfectly drained soil developed from alluvial and lacustrine materials. This soil is often underlain by gravel. This soil has a seasonally high water table. Soil colour ranges from very dark grayish brown to mottled yellowish brown. Soil pH is typically acidic (Presant and Wicklund 1971: 32-33).

The study area is located in proximity to the upper reaches of Clair Creek, a tributary of Laurel Creek. Clair Creek drains a total area of 150 hectares (PEIL 2003). Laurel Creek ultimately drains into the Grand River, an important transportation route and a critical resource extraction area for generations of Aboriginal people. Historically, the Grand River has been utilised as a navigable water-way, as a power source (such power sites served as settlement nuclei) and, above Brantford, as a course for driving logs (Chapman and Putnam 1984: 98).

### *1.3.3 Previous Archaeological Research*

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTCS. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 km east to west, and approximately 18.5 km north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The study area under review is located in Borden block *AiHd.*

According to the OASD (MTCS 2014), seven previously registered archaeological sites are located within one kilometre of the study area. Site details are presented in Table 1.

According to the background research, two archaeological assessments have been conducted within 50 metres of the study area (ASI 1999; 2007; Stantec 2013). Due to access constraints the Stantec (2013) report was not able to be reviewed for this assessment.

ASI (1999) conducted a Stage 1-2 archaeological assessment of the Clair Hills subdivision – Phase 2 (30T-97017, 30T-97018) in the City of Waterloo, Regional Municipality of Waterloo under the project direction of Dr. Rob MacDonald (Licence #98-014). The background research determined that the study area possessed archaeological potential. The property assessment was conducted on June 5 and 19 and November 19, 1998 by pedestrian survey at five metre intervals, and identified three archaeological sites

and seven findspots. Two previously registered archaeological sites were also located within the study area. No cultural resources were located within the present study area.

Table 1: List of previously registered sites within one kilometre of the study area

| Borden # | Site Name | Cultural Affiliation | Site Type | Researcher |
|---|---|---|---|---|
| AiHd-1 | Waterloo | Neutral | Village | Wright 1961; Redmond 1981 |
| AiHd-30 | Beechwood 6 | Aboriginal (pre-16th century) | Findspot | MPP 1986 |
| AiHd-31 | Beechwood 7 | Aboriginal (pre-16th century) | Lithic workshop | MPP 1986 |
| AiHd-121 | Freiberger | Euro-Canadian (mid 19th century)† | Homestead | MacDonald [ASI] 1998; Wilson 1999 |
| AiHd-124 | | Aboriginal (pre-16th century) | Findspot | Macdonald [ASI] 1998 |
| AiHd-125 | | Aboriginal (pre-16th century) | Campsite | Macdonald [ASI] 1998 |
| AiHd-132 | Greyerbiehl I | Aboriginal (pre-16th century) | n/a | n/a |

N.B. – Dates based on Ferris 2013: 13
† -Dates based on MTCS 2014
ASI – Archaeological Services Inc.
MPP – Mayer, Pihl, Poulton & Associates Inc.

ASI (2007) conducted a Stage 1 archaeological assessment for the Erb Street and Wilmot Line Class EA in the City of Waterloo, Regional Municipality of Waterloo under the project direction of Rob Pihl (MCL PIF P057-318-2006). The Stage 1 archaeological assessment determined that some lands beyond the Erb Street West ROW possessed archaeological potential and required Stage 2 archaeological assessment, however lands within the Erb Street West ROW were disturbed and did not require further archaeological assessment.

### *1.3.4 Summary of Archaeological Context*

The review of archaeological work conducted in the area demonstrated that seven previously registered archaeological sites are located within one kilometre of the study area. The study area is located in proximity to Clair Creek and includes areas of well-drained sandy soil. The study area is also located in proximity to the Speed River, the course of which is consistent with that during the Late Pleistocene/early Holocene era. The study area contains well-drained sandy soil.

The historical context demonstrates that the study area is located in proximity to a historic schoolhouse as well as historic transportation routes.

The above criteria are indicative that the study area possesses potential for Aboriginal and Euro-Canadian archaeological resources, depending on the degree to which soils have been subject to deep disturbance.

## 2.0 FIELD METHODS: PROPERTY INSPECTION

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features which will affect assessment strategies such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted by Paul David Ritchie (P392) of ASI on August 21, 2014, with Peter Carruthers (P163) advising, also of ASI, in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the study area. It was a visual inspection only and did not include excavation or collection of archaeological resources.

Weather conditions for the inspection were a mix of overcast and clear skies with a temperature of approximately 23 degrees Celsius. Previously identified features of archaeological potential were examined; additional features of archaeological potential not visible on mapping were identified and documented as well as any features that will affect assessment strategies. Field observations are compiled onto maps of the study area in Section 7.0 (Figures 6-10) and associated photographic plates are presented in Section 8.0 (Plates 1-14).

## 3.0 ANALYSIS AND CONCLUSIONS

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the study area. This data is presented below in Section 3.1. Results of the analysis of the property inspection are then presented for the study area (Section 3.2).

### 3.1 Analysis of Archaeological Potential

The S & G, section 1.3.1, list criteria that are indicative of archaeological potential. The Erb Street Widening and Corridor study area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites (e.g. Freiberger *AiHd-121*);
- Water sources: primary, secondary, or past water source (e.g. Clair Creek);
- Well-drained sandy soils (e.g. Waterloo fine sandy loam)
- Areas of Euro-Canadian Settlement (e.g. schoolhouse);
- Early historic transportation routes (e.g. Erb Street)

These criteria are indicative of potential for the identification of Aboriginal and Euro-Canadian archaeological resources, depending on the degree to which it has been subject to disturbance.

## 3.2 Analysis of Property Inspection Results

The Erb Street Widening and Corridor Study Stage 1 study area includes publicly owned ROW lands as well as private lands adjacent to the ROW. Much of the study area was documented to have deep and extensive land disturbance due to utility installation, ROW construction, and grading as well as adjacent development (Figures 7-10: areas marked in yellow). These lands do not require further archaeological assessment as per the S & G, Section 1.3.2.

Typically, a ROW can be divided into two areas: the disturbed ROW, and ROW lands beyond the disturbed ROW. The typically disturbed ROW extends outwards from either side of the centerline of the traveled lanes, and it includes the traveled lanes and shoulders and extends to the toe of the fill slope, the top of the cut slope, or the outside edge of the drainage ditch, whichever is furthest from the centerline. Subsurface disturbance within these lands may be considered deep and extensive, thereby negating any archaeological potential for such lands.

ROW construction disturbance may be found to extend beyond the typical disturbed ROW area, and this generally includes additional grading, cutting and filling, additional drainage ditching, watercourse alteration or channelization, servicing, removals, intensive landscaping, and heavy construction traffic. Areas beyond the typically disturbed ROW generally require archaeological assessment in order to determine archaeological potential relative to the type or scale of disturbances that may have occurred in these zones.

Some areas of the Erb Street Corridor possess archaeological potential (Figures 8-10: areas marked in green and orange) and require Stage 2 archaeological assessment by a combination of test-pit survey at five metre intervals and pedestrian survey at five metre intervals, in accordance with the S & G, Sections 2.1.1 and 2.1.2, if they are to be impacted by the project developments.

## 3.3 Conclusions

The Stage 1 background study determined that 13 previously registered archaeological sites and three unregistered archaeological findspots are located within one kilometre of the study area. A review of the geography of the study area suggested that the study area has potential for the identification of Aboriginal and Euro-Canadian archaeological resources, depending on the degree to which soils have been disturbed.

The property inspection identified some areas within the study area which possess archaeological potential and will require Stage 2 archaeological assessment. The remainder of the study area, however, does not retain archaeological potential.

# 4.0 RECOMMENDATIONS

In light of these results, the following recommendations are made:

1. Several areas within in the Erb Street Widening and Corridor Study Stage 1 study area possess archaeological potential and will require Stage 2 archaeological assessment by a combination of test-pit survey at five metre intervals and pedestrian survey at five metre intervals (Figures 8-10: areas marked in green and orange), prior to any land disturbance by the project;

2. ROW lands and some lands adjacent to within the study area are documented to not retain archaeological potential on account of deep and extensive land disturbance (Figures 7-10: areas marked in yellow). A part of the study area has been documented to have low and wet conditions (Figure 9: area marked in blue). These lands do not require further archaeological assessment; and,

3. Should the proposed work extend beyond the current study area then further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands

Notwithstanding the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the MTCS should be immediately notified.

## 5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

ASI also advises compliance with the following legislation:

- 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*, RSO 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 field work and report recommendations ensure the conservation, preservation and protection 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 MTCS, 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 field work 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 sec. 48 (1) of the *Ontario Heritage Act*.

- The *Funeral, Burial and Cremation Services Act* (2002) require that any person discovering human remains must immediately notify the police or coroner.

- The documentation related to this archaeological assessment will be curated by ASI until such a time that arrangements for their ultimate transfer to Her Majesty the Queen in right of Ontario, or other public institution, can be made to the satisfaction of the project owner(s), the Ontario MTCS, and any other legitimate interest groups.

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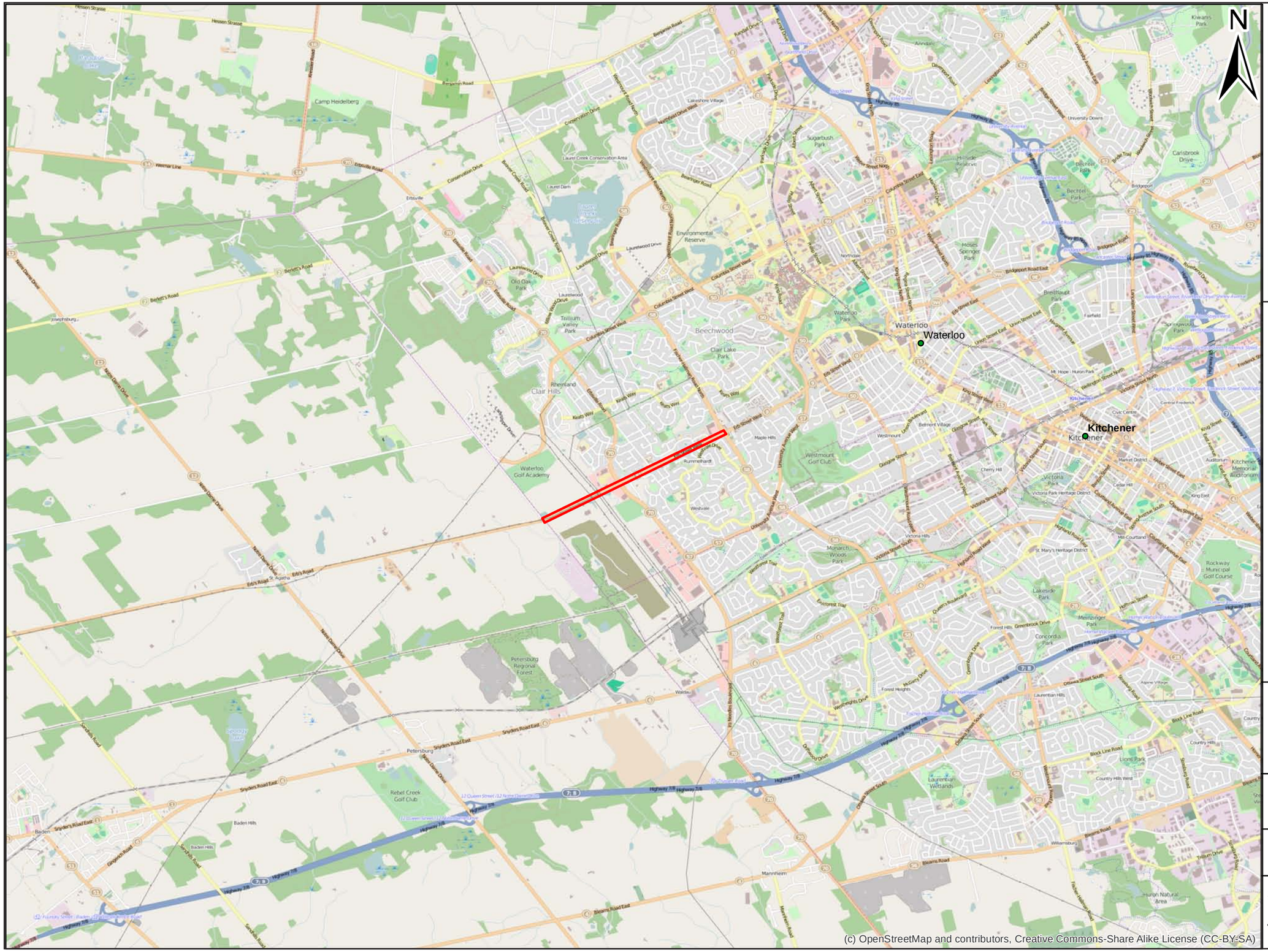
## 7.0 MAPS




Study Area

BASE: OpenStreetMap (OSM)
OpenStreetMap and contributors,
Creative Commons-Share Alike License (CC-BY-SA)
2013

0 2,500
Metres

ASI PROJECT NO.: 13EA-204
DATE: 20 Aug 2014

DRAWN BY: BW
FILE: 13EA204_Fig1

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Figure 1: Erb Street Widening and Corridor Study Stage 1 Study Area Location

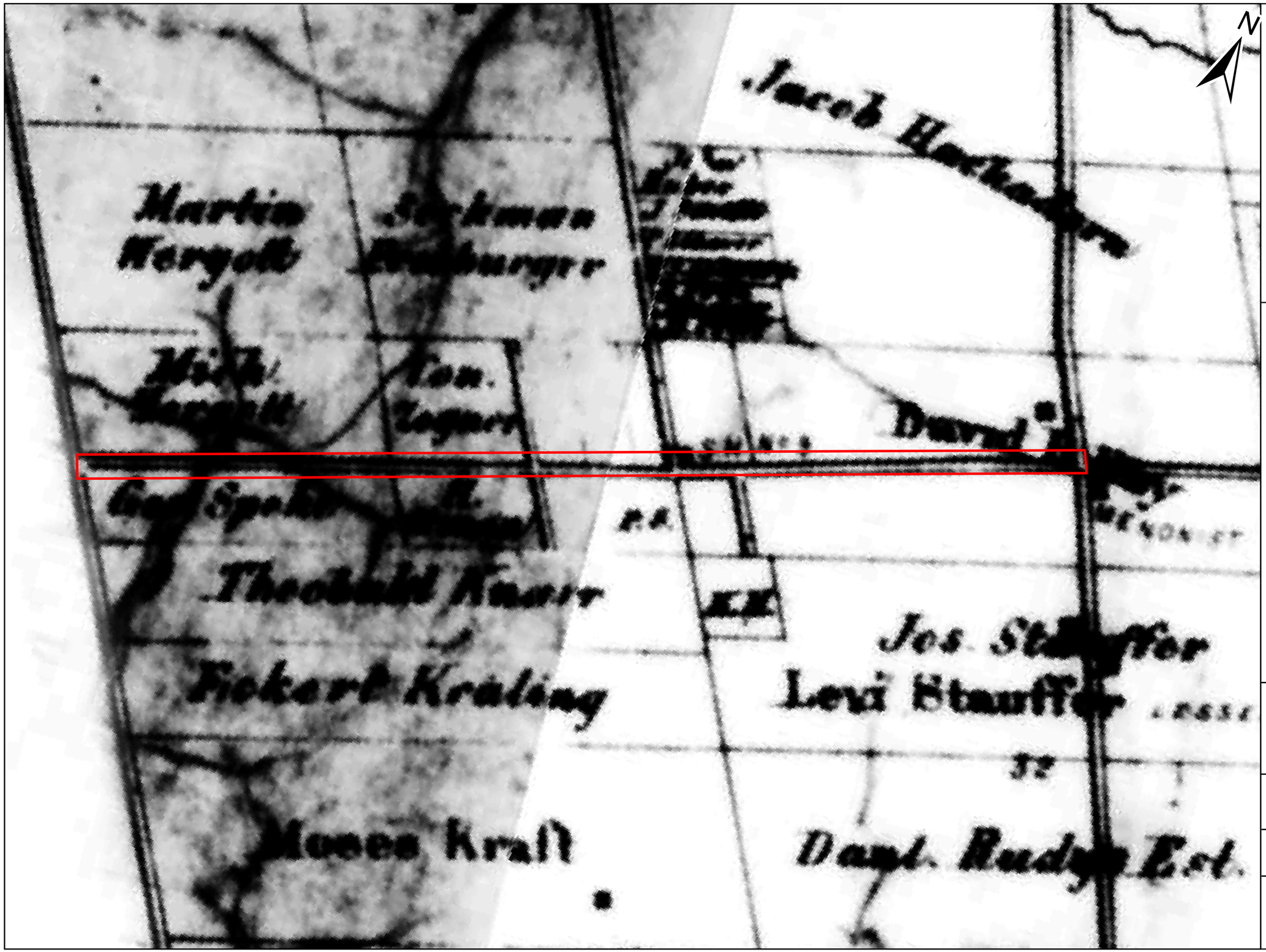


Figure 2: Erb Street Widening and Corridor Study Stage 1 Study Area overlaid on 1861 map of County of Waterloo, Canada West

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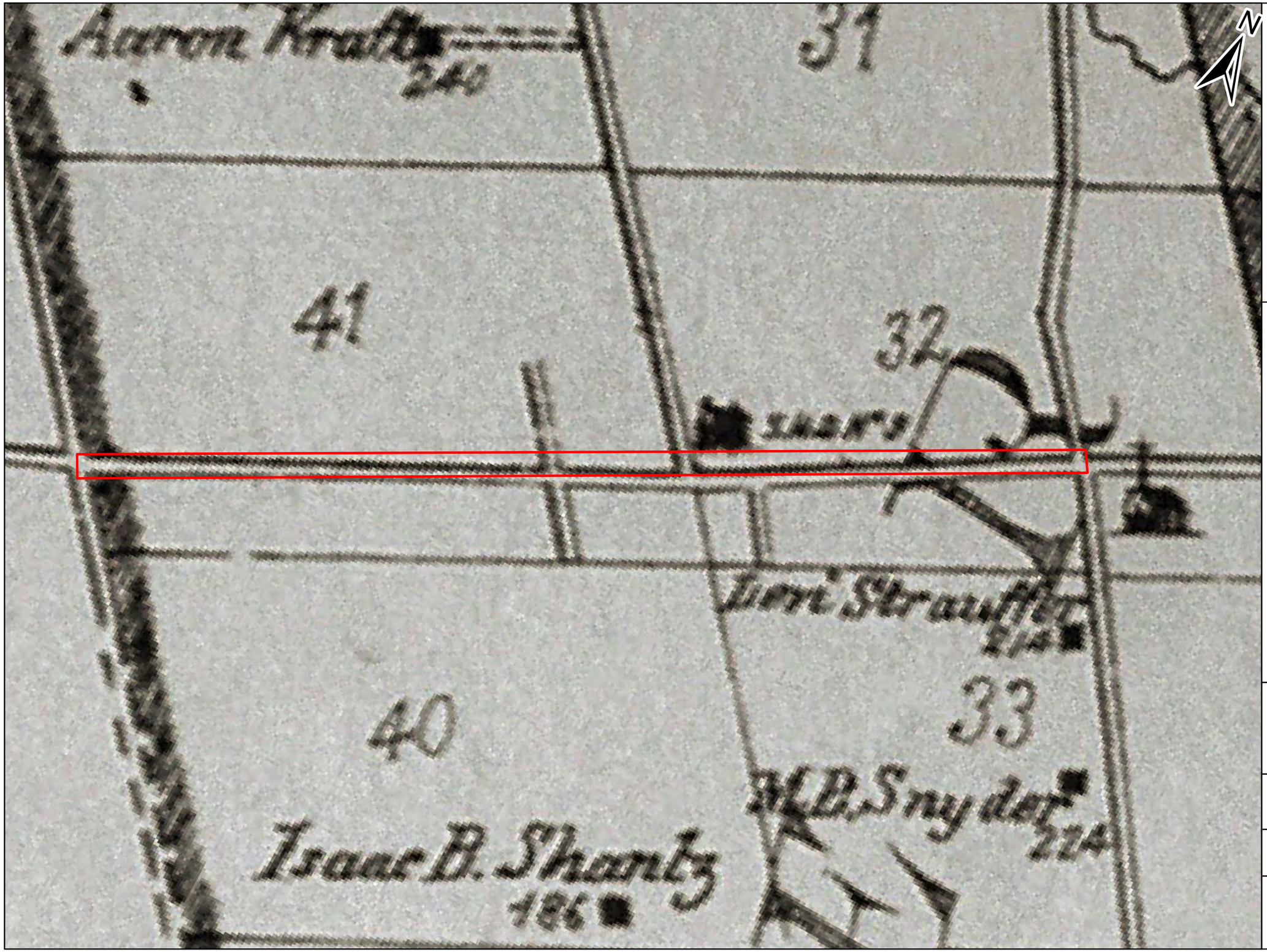


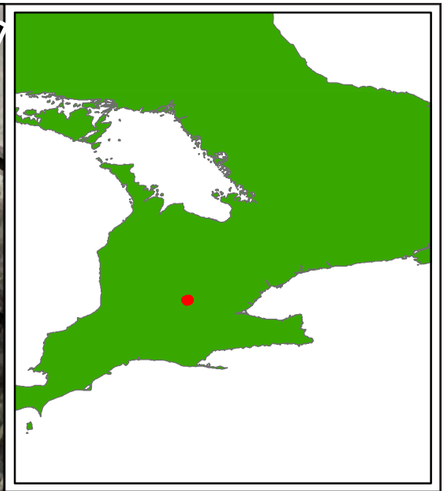

Study Area

BASE:

Waterloo County
Waterloo Township
1881

0 500
Metres

ASI PROJECT NO.: 13EA-204
DATE: 21 Aug 2014

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FILE: 13EA204_Fig3_1881

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Figure 3: Erb Street Widening and Corridor Study Stage 1 Study Area overlaid on 1881 map of Township of Waterloo

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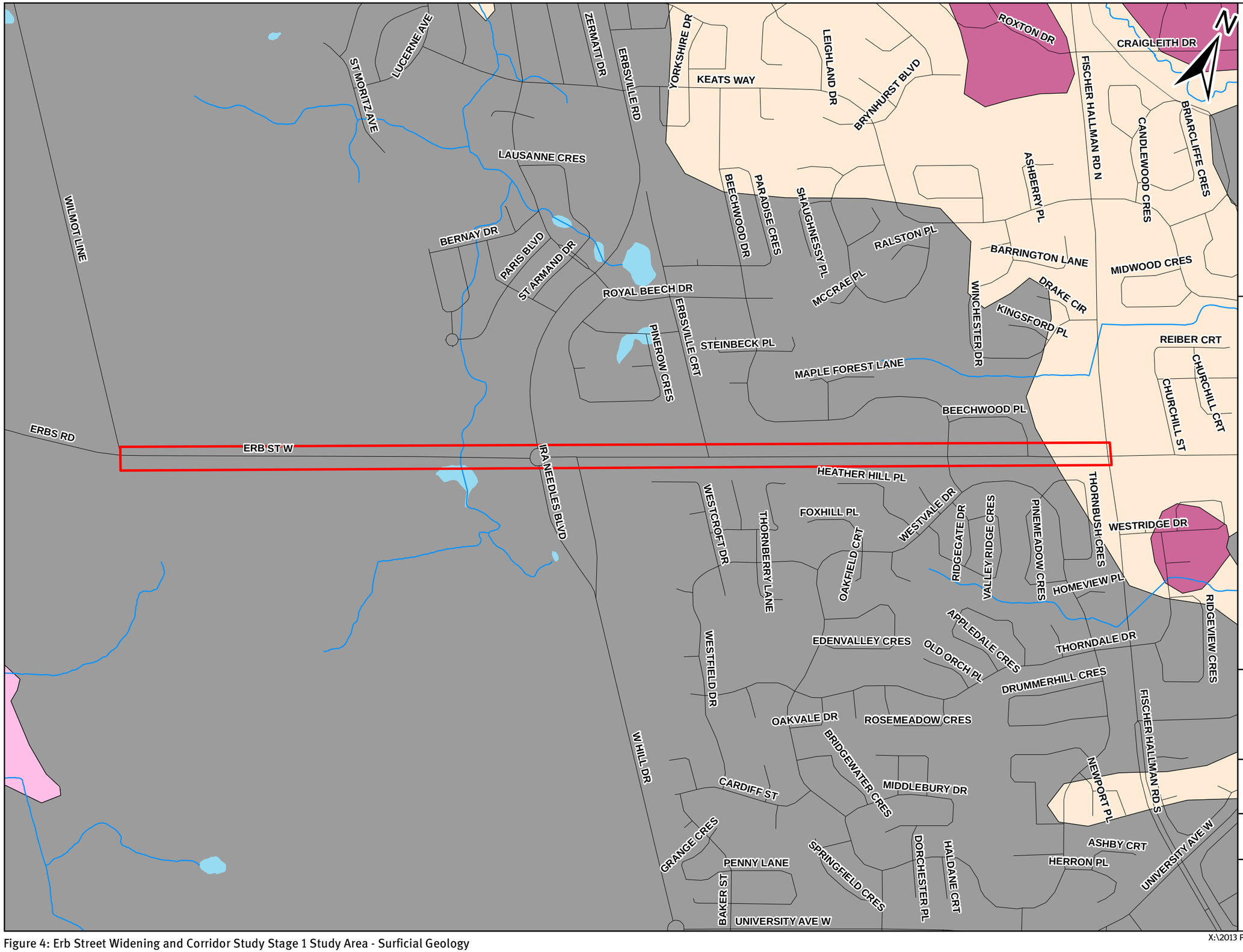


Figure 4: Erb Street Widening and Corridor Study Stage 1 Study Area - Surficial Geology

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Study Area
No Data
Well Drained
Poorly Drained

BASE:

0 500
Metres

ASI PROJECT NO.: 13EA-204
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Figure 5: Erb Street Widening and Corridor Study Stage 1 Study Area - Soil Drainage

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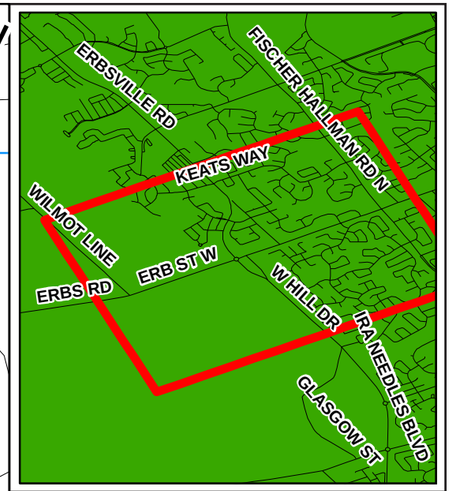


Study

BASE:

Ortho
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WalterFredy

0 500
Metres

ASI PROJECT NO.: 13EA-204
DATE: 06 Oct 2014

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Figure 6: Erb Street Widening and Corridor Study Stage 1 Study Area - Property Inspection Results (Key Map)

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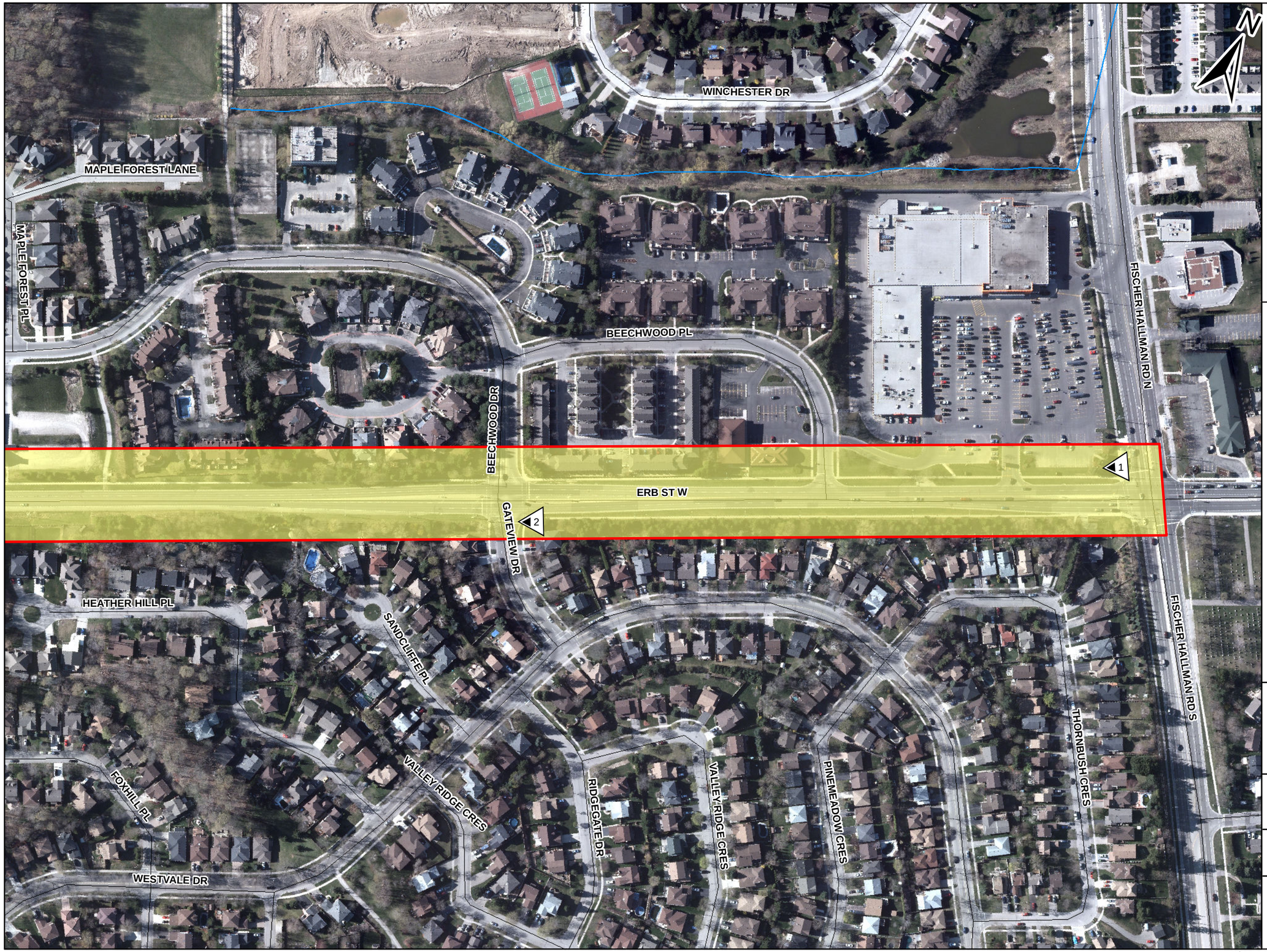


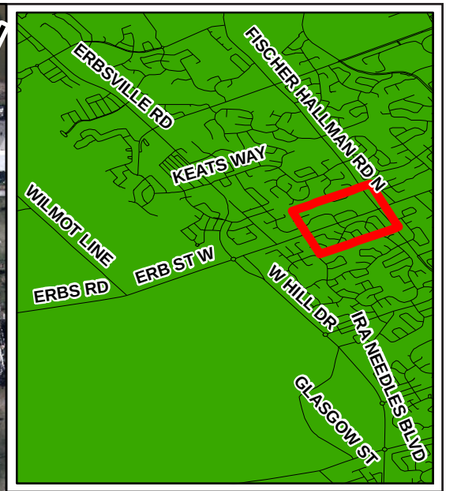


Study

Photo Plate

No Potential:

BASE:

Ortho
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WalterFredy

0 100

Metres

ASI PROJECT NO.: 13EA-204
DATE: 06 Oct 2014

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Figure 7: Erb Street Widening and Corridor Study Stage 1 Study Area - Property Inspection Results (Sheet 1)

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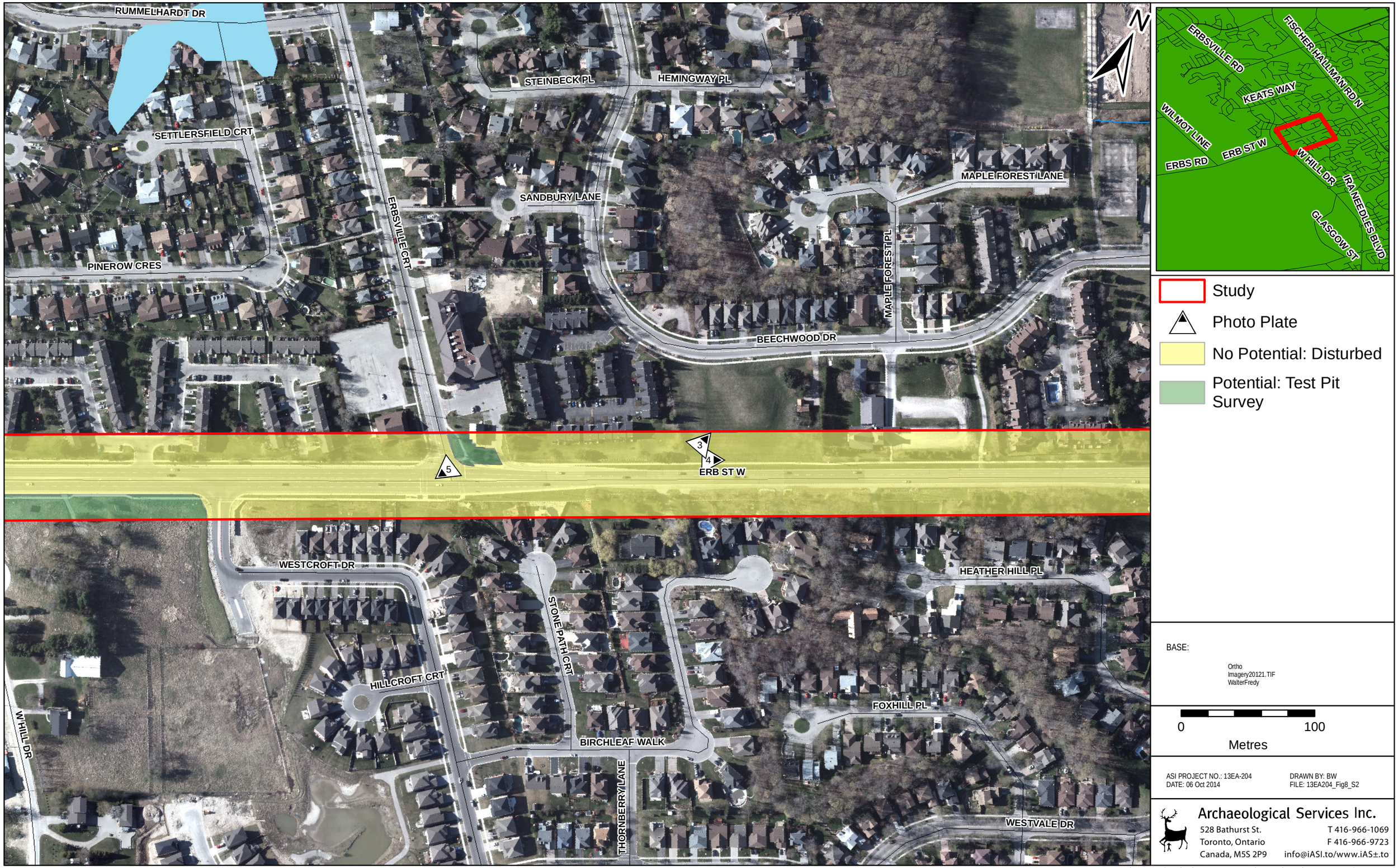


Figure 8: Erb Street Widening and Corridor Study Stage 1 Study Area - Property Inspection Results (Sheet 2)

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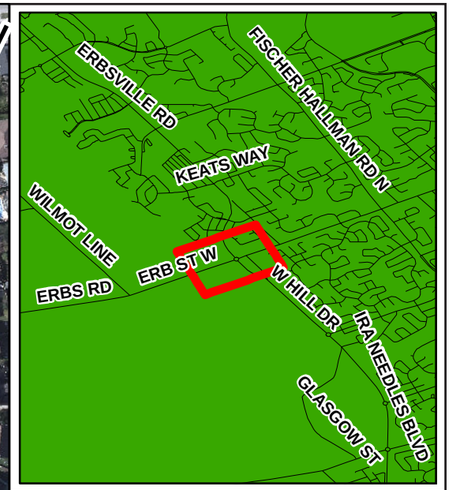


Study

Photo Plate

No Potential: Disturbed

Potential: Pedestrian Survey

Potential: Test Pit Survey

No Potential: Wet

BASE:

Ortho
Imagery20121.TIF
WalterFredy

0 100
Metres

ASI PROJECT NO.: 13EA-204
DATE: 06 Oct 2014

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FILE: 13EA204_Fig9_S3

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Figure 9: Erb Street Widening and Corridor Study Stage 1 Study Area - Property Inspection Results (Sheet 3)

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Figure 10: Erb Street Widening and Corridor Study Stage 1 Study Area - Property Inspection Results (Sheet 4)

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## 8.0 IMAGES

Plate 1: View WSW of Erb Street ROW. ROW and lands beyond are disturbed. No potential.

Plate 2: View WSW of Erb Street ROW. ROW and lands beyond are disturbed. No potential.

Plate 3: View NNE of park. Park is disturbed. No potential.

Plate 4: View ENE of Erb Street ROW. ROW and lands beyond are disturbed. No potential.

Plate 5: View southwest of Erb Street ROW. ROW and lands beyond are disturbed. No potential.

Plate 6: View ESE of study area. Erb Street ROW is disturbed. No potential. Lands beyond ROW have potential. Require Stage 2 test-pit survey.

Plate 7: View south of study area. Erb Street ROW and lands beyond are disturbed. No potential.

Plate 8: View southwest of study area. Study area is disturbed. No potential.

Plate 9: View southwest of Erb Street ROW. ROW is disturbed. Adjacent lands beyond ROW are low and wet. No potential.

Plate 10: View northwest of study area. Erb Street ROW and Hydro Tower property are disturbed. No potential.

Plate 11: View WSW of study area. Erb Street ROW and lands beyond are disturbed. No potential.

Plate 12: View SSE of study area. Erb Street ROW and lands beyond are disturbed. No potential.

Plate 13: View ENE of study area. Erb Street ROW is disturbed. No potential. Lands beyond have potential. Requires Stage 2 pedestrian survey.

Plate 14: View northwest of study area. Area is a buried reservoir. Area is disturbed. No potential.