Environmental Study Report
Volume 2: Appendices A-N

East Boundary Road Corridor Study from Dundas Street South (Highway 8) to Townline Road (Regional Road 33)
Schedule C Class Environmental Assessment

Project Location:
City of Cambridge, Township of North Dumfries

Prepared for:

Region of Waterloo

Region of Waterloo
150 Frederick St., Kitchener, ON N2G 4J3

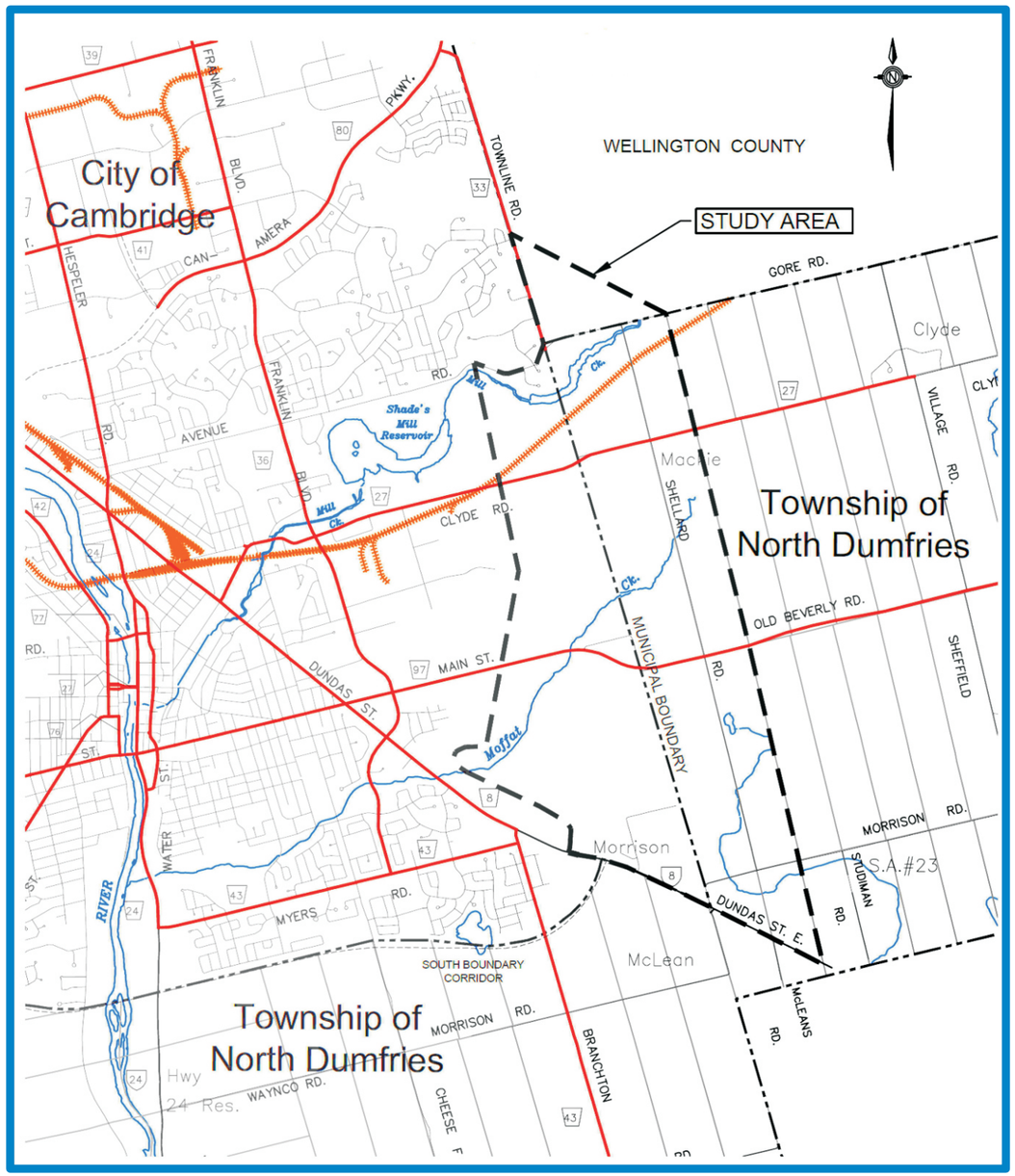
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May 2019

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APPENDIX A

East Boundary Road Pre-Project Scoping Report (MTE, February 2013

EAST BOUNDARY ROAD

Pre-Project Scoping Report

Project Location:
City of Cambridge /
Township of North Dumfries

Prepared for:
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February 2013

MTE File No. 36900-200



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1.0 INTRODUCTION

In early 2012, the Regional Municipality of Waterloo (the Region) initiated a consultant selection process for a Schedule C Class Environmental Assessment (Class EA) for the East Boundary Road Corridor Study in the City of Cambridge and Township of North Dumfries. The proposed study area basically consisted of the southeast portion of Cambridge and a portion of the eastern section of North Dumfries east of Cambridge. Figure 1 illustrates the proposed study area. The study area is bounded by Avenue Road in the north, Franklin Boulevard on the west side, Dundas Street forming the southernmost boundary, and the eastern boundary being 500m east of the Shellard Side road in North Dumfries.

The need for an “East Boundary” transportation facility has been documented in several previous transportation studies dating back to 1967 when the “Report on a Traffic Planning Study for the Joint Area of Galt and Preston” was undertaken by the former City of Galt. It recommended several transportation facilities including a ring road or bypass of Galt and Preston. The report recommended that “road allowance be protected for the north-south freeway east of Galt.” The plans for this bypass identify a rough corridor just east of the eastern Galt Boundary. In addition, in 1993 the Cambridge Area Transportation Study (CATS) showed a north–south bypass east of the Cambridge Boundary into North Dumfries tying into Townline Road. In approximately 2003, the Cambridge Area Route Selection Study (CARSS) identified a number of east side corridors near the Cambridge/North Dumfries boundary. The Detailed Transportation Network Review (DTNR) of the Cambridge Area completed in 2004 identified the need for an “East Side Bypass”, but indicated that the planning for this route would be incorporated into the MTO’s Highway 24 Route Planning Study.

The need for a north-south transportation facility in eastern Cambridge was also confirmed in the Regional Official Polices Plan (ROPP) in 1995 as well as in the new Regional Official Plan (ROP), approved by the Province in 2010 but currently under appeal, and the Regional Transportation Master Plan (RTMP) in 2011.

The Schedule C Class Environmental Assessment (Class EA) for the South Boundary Road was completed (currently under Part II Order) alluding to a connection to an “East Boundary Road” at Highway 6/Dundas Street. A MTO Highway 24 study was not progressing as planned and is currently “on hold”, and development plans were proceeding for the east side of Cambridge, requiring the need to examine an east side transportation facility in detail to address future development and traffic needs. As a result the Region initiated the consultant selection process for a Schedule C Class EA for the East Boundary Road.

As part of a Schedule C Class EA, all alternatives and potential routes must be examined. However, given that part of the identified study area was already built up or planning to be built up, the Region of Waterloo and City of Cambridge agreed that prior to the East Boundary Road Class EA commencing that some pre-project or additional

scoping of the proposed Study Area be completed. The pre-project or scoping study should examine several issues such as current and proposed land use, heritage and archaeological sites, contaminated sites and the natural environment.

This report summarizes the finding of the pre-project work which consists mainly of desktop or existing literature searches of identified constraints, and makes recommendations for a revised study area for an East Boundary Road Schedule C Class Environmental Assessment. It is important to note that these preliminary studies used to determine a revised study area will serve as a foundation for more detailed studies within a revised study area. As such, even though some of the existing study area may be "screened out", it is important that the revised study area does not limit examining the potential for several alternatives or alignments as part of the future full Class EA study.



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2.0 BACKGROUND AND HISTORICAL TRAFFIC PLANNING REPORTS/PROJECTS

The need for a new transportation facility on the east side of Cambridge has been identified in several transportation studies dating back to before the Regional Municipality of Waterloo was formed and the communities of Galt, Preston, Hespeler and Blair amalgamated to become the City of Cambridge.

In 1967 a "Traffic Planning Study for the Joint Area of Galt and Preston" completed by Damas and Smith Limited, recommended a number of road network improvements including that a "freeway or expressway" be constructed around the City of Galt connecting to the north via Highway 8 to Kitchener and to Highway 401 in the northeast. It was recommended that the east leg of this freeway be completed after 1985 and connect to Highway 8 in the south and Highway 401 to the north. The approximate location of this east side "Freeway" was near the eastern boundary of City of Galt. A drawing showing the "Recommended Street System" from the Traffic Planning Study for the joint area of Galt and Preston is illustrated in Figure 2.1.

In 1993, the City of Cambridge completed the Cambridge Area Transportation Study (CATS). It made several recommendations for implementation by 2001, and developed a recommended Transportation Master Plan for Cambridge. This plan is illustrated in Figure 2.2 (Option 3Z). CATS recommended a north-south bypass on the east side of Cambridge be protected, and that future transportation studies review this recommendation further based on population and employment growth. The approximate location of this east side bypass was generally just outside the City of Cambridge eastern boundary into North Dumfries, and tied into Townline Road north of Avenue Road. The illustrated route indicates a portion of this east side bypass would pass through the Township of Puslinch into the County of Wellington.

In the late 1990's and into approximately 2003, the Region undertook the Cambridge Area Route Selection Study (CARSS). Although this study was never finalized, much work was undertaken. Among other network improvements being considered throughout Cambridge, the alternatives included examination of "East Side" alternatives. All east side alternatives utilized Townline Road north of Avenue Road, and also included several other alternative routes that basically followed the eastern Cambridge Boundary with deviations to the west using the existing Hydro Corridor and to the east into North Dumfries and Puslinch Township as illustrated on Figure 2.3.

In 2004, the Region of Waterloo undertook a Detailed Transportation Network Review of the Cambridge Area (DTNR). Although this study looked mainly at the near and medium-term road improvements and did not make a longer term recommendation for an East Side bypass or road, it included the statement "The CARSS Steering Committee encourages the MTO to proceed ahead, immediately, with examining alternative routes including the East Side Bypass route and other options for upgrading Highway 24 and its connection with Highway 401." Although no recommendations were made regarding the location of this "east side bypass" in the DTNR, the MTO study was considering routes on the east side of Cambridge, as well as routes west of Cambridge. The MTO Highway 24 study is currently "on hold". The initial study area for the Highway 24 study is illustrated on Figure 2.4.

The new Regional Official Plan (ROP) was adopted by Regional Council in 2009 and approved by the Province in 2010, but is currently under appeal. The ROP identified a number of planned Regional Roads and Provincial Highways, but also identified a "Proposed Regional Corridor" on the east side of Cambridge from Highway 8 in the south end of Cambridge towards Townline Road. Map 5b from the ROP is illustrated in Figure 2.5.

In 2011 the Regional Transportation Master Plan (RTMP) identified a number of transportation improvement recommendations. Included were road improvements for the east side of Cambridge running from Highway 8 in the south and roughly following Cambridge's eastern boundary and tying into Townline Road. Figure 2.6 illustrates "Mature State Improvements" from the RTMP for the entire Region showing an "east side" road in the south end of Cambridge.

In summary, since at least 1967 an east-side roadway has been recognized as a long term need to provide north-south access for the east side of Cambridge. Most of these alignments have been illustrated to be near the eastern boundary of the City of Cambridge.

Figure 2.1
Recommended Street System
Traffic Planning Study for Joint Area of Galt and Preston
1967

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Figure 2.2
CATS Transportation Master Plan
1998

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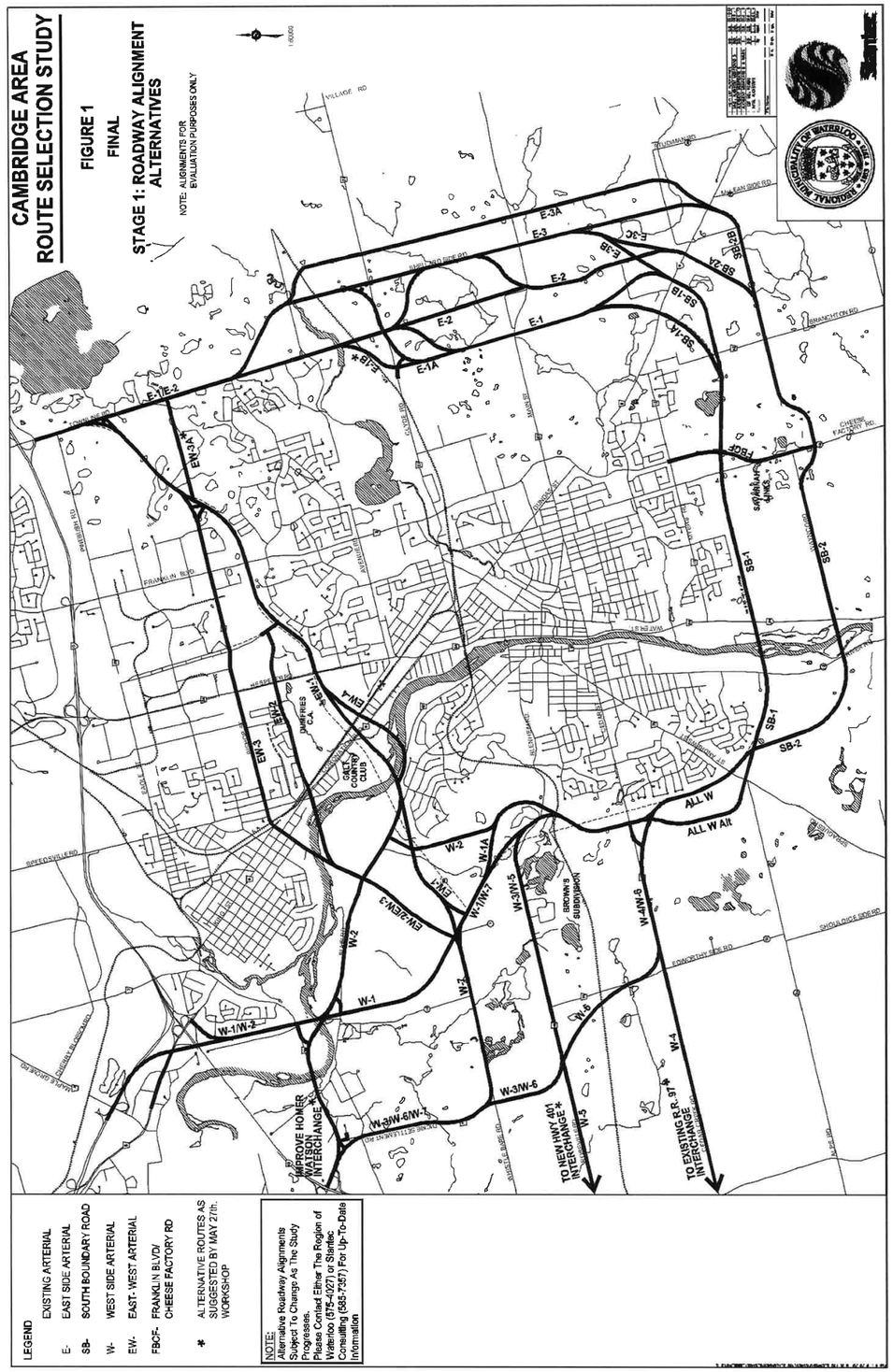
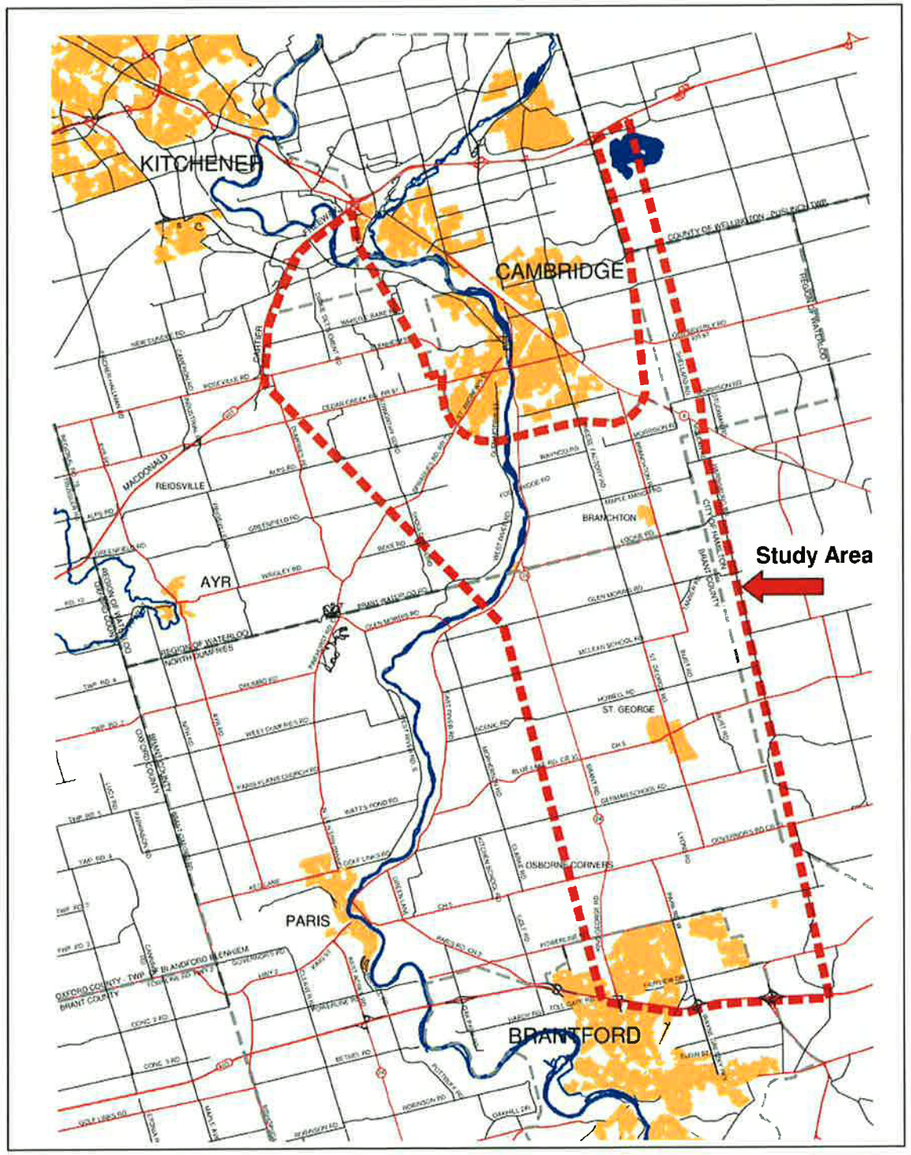


Figure 2.3
CARSS Roadway Alignments Alternatives

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Recommended Highway 24 Corridor
Class Environmental Assessment Study Area



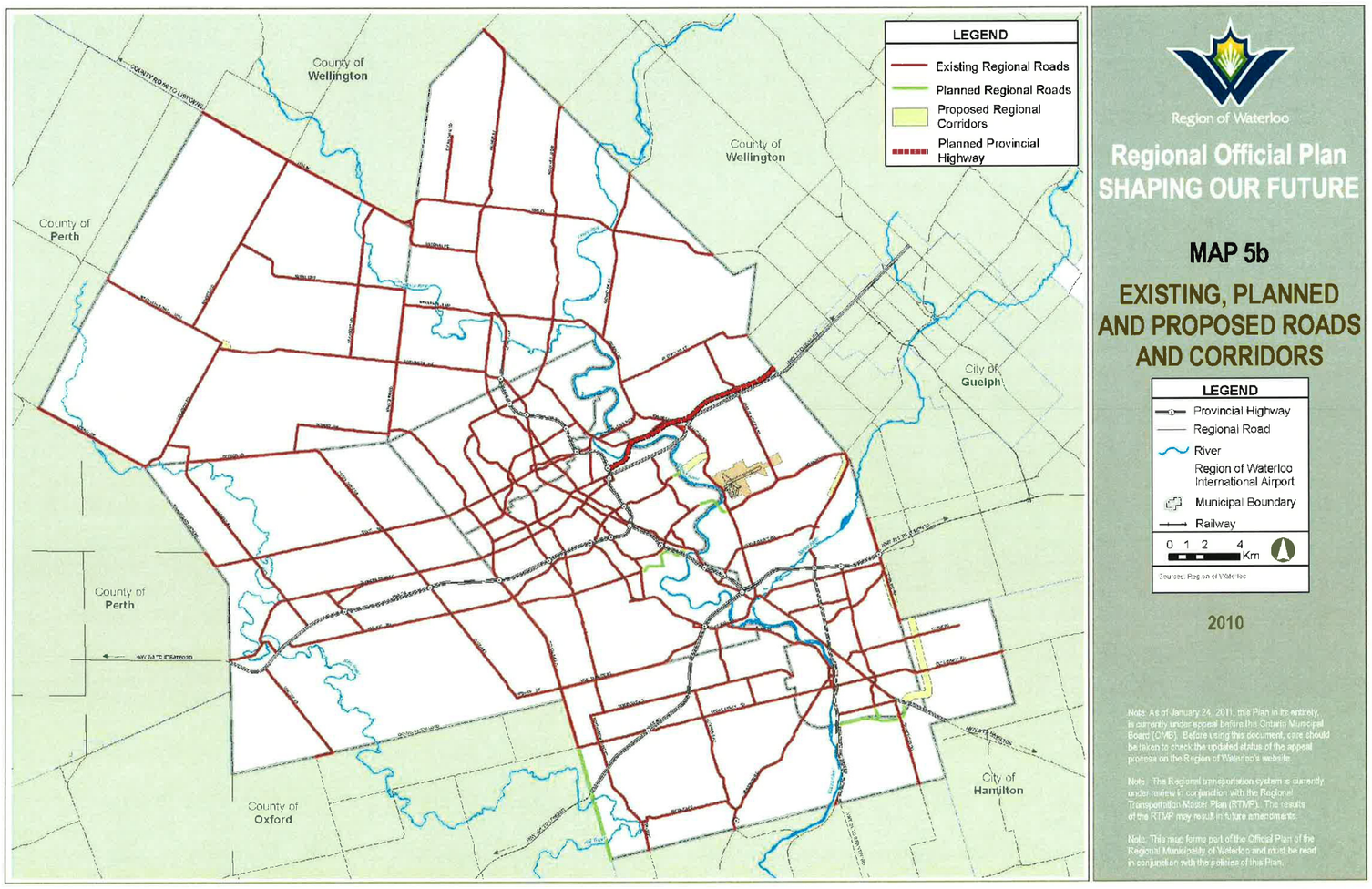
Ministry of Transportation

HIGHWAY 24 CORRIDOR PLANNING STUDY
Highway 401 to Highway 403

Stantec

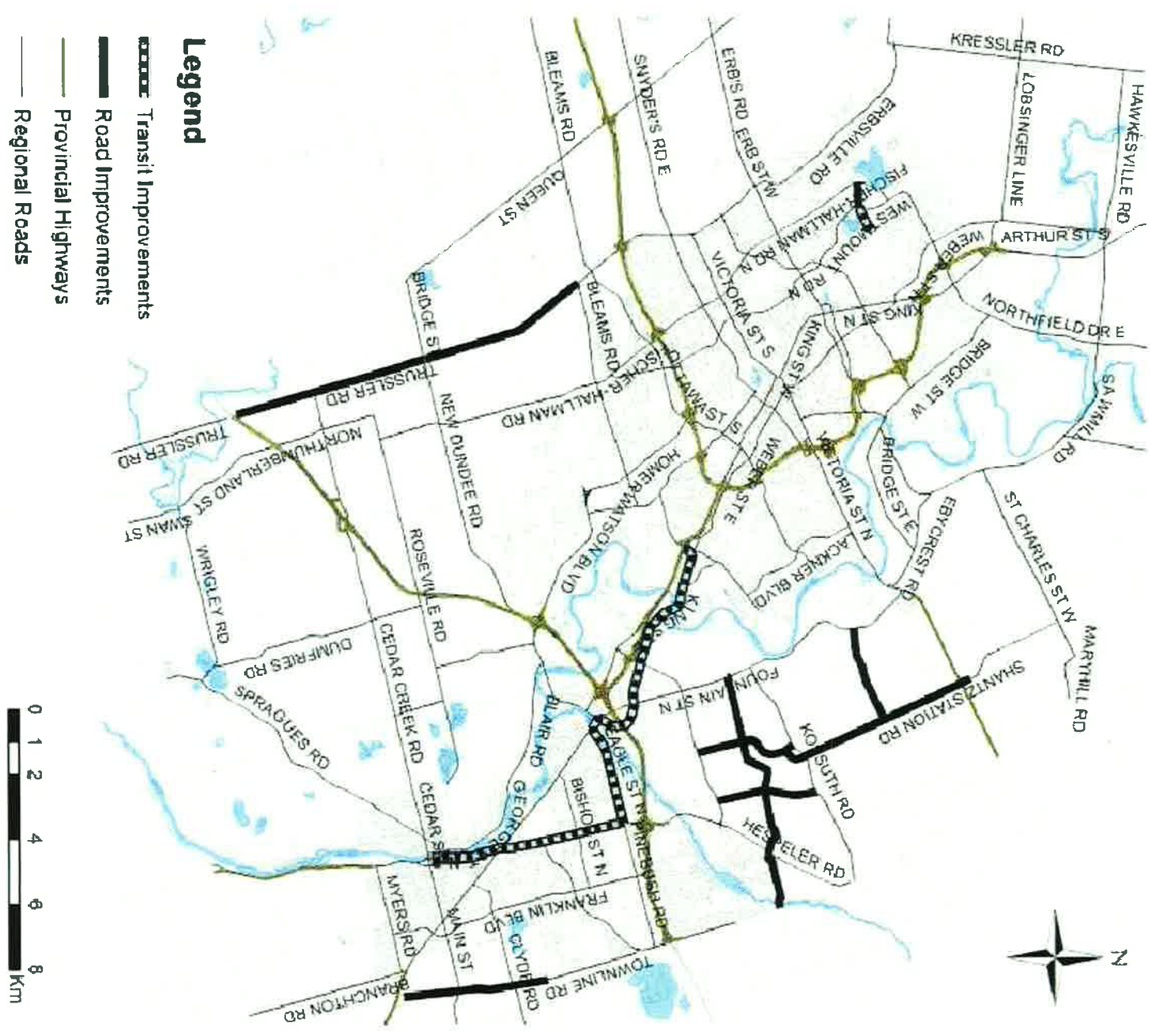
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Figure 2.4
Highway 24 Initial Study Area



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Figure 2.5
ROP - Map 5b
Existing, Planned and Proposed Roads and Corridors



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Figure 2.6
RTMP
Mature State Improvements
2011

3.0 NATURAL ENVIRONMENT

Savanta Inc. (Savanta) undertook a preliminary overview of environmental and natural heritage features within the East Boundary Road study area boundaries. The purpose of the natural environment overview was to identify natural environment features to assist in refining the study area for the East Boundary Road Class EA.

The overview study included the review of background information from the Ministry of Natural Resources (MNR), Grand River Conservation Authority (GRCA), Region of Waterloo and various studies previously completed in the vicinity of the study area. GRCA and MNR (Land Information Ontario – LIO) GIS mapping was consulted and transferred to provide an understanding of the various landform-based constraints within the study area. In addition, Savanta completed a limited number of natural heritage surveys throughout the spring and summer of 2012 to gain an understanding of specific natural heritage features and functions that were identified during preliminary background information mapping. These surveys included spring amphibian call surveys, breeding bird surveys, preliminary Ecological Land Classification and cursory vegetation surveys, and species at risk observations.

A summary of the natural environment work completed at the date of writing of this Pre-Project report is contained in Appendix A. It should be noted that additional work must be completed as part of the Class Environmental Assessment, and the work completed to date will be used to assist in refining the study area as well as serve as a foundation for future and more specific natural environment investigations and field studies. Figure 3 is a summary of constraints mapping received from the GRCA and MNR.

The following provides an overview summary of the various natural heritage features and functions within the East Boundary Road Corridor EA study area.

3.1 Subwatersheds, Aquatic Habitat and Fisheries

Three main drainage subcatchments are located within the Study Area; Mill Creek, Moffat Creek and Fairchild Creek.

Mill Creek, a coldwater stream supporting brook trout and brown trout, flows to Shade's Mills reservoir, a flood control facility operated by the Grand River Conservation Authority. In addition to the presence of trout in Mill Creek upstream of Gore Road the reservoir supports warmwater sportfish species such as northern pike, yellow perch, largemouth bass and smallmouth bass. Northern Pike and Brown Trout have been observed spawning immediately upstream of Shade's Mill reservoir, as documented in MNR files. Downstream of the reservoir, Mill Creek is classified as coldwater habitat all the way to its confluence with the Grand River.

Throughout the Study Area, Moffat Creek is classified as a warmwater stream, supporting primarily baitfish species. Immediately downstream of Dundas Street, in the vicinity of Azores Crescent, the stream classification changes to coldwater habitat extending to its confluence with the Grand River. Although no coldwater species have been collected from this section, groundwater seepage has been noted in downstream areas, possibly resulting in the coldwater classification.

In the southeast corner of the Study Area to the south of Old Beverly Road, are several wetland pockets of the Sheffield-Rockton Complex Provincially Significant Wetland (PSW). These wetland areas are associated with the headwaters of Fairchild Creek, a warmwater stream system that enters the Grand River downstream of Brantford. Based on MNR records, many of the culvert and channel areas examined over time exhibit intermittent conditions and at best, may provide seasonal habitat for species of minnows.

3.2 Natural Heritage Corridors, Wetlands and ANSIs

The Mill Creek PSW complex surrounds Mill Creek proper and its tributaries. Immediately to the northeast of the Study Area, a large portion of the Mill Creek PSW also contains the Galt (Mill) Creek and Forests Life Science Area of Natural and Scientific Interest (ANSI). While this ANSI lies just outside of the present Study Area boundary, its presence on adjacent lands should be taken into consideration during the EA study.

Traversing the mid-portion of the study area in a northeast to southwest direction, the Moffat Creek Swamp PSW surrounds the main stem of Moffat Creek. Smaller pockets of wetland also associated with this complex are located away from the creek, in the vicinity of the east end of Savage Drive and the south end of Dobbie Drive.

In the southeast corner of the Study Area to the south of Old Beverly Road, are several wetland pockets of the Sheffield-Rockton Complex PSW. These wetland areas are associated with the headwaters of Fairchild Creek, a warmwater stream system that enters the Grand River downstream of Brantford.

3.3 Amphibian Habitat

Amphibian call surveys were completed in April, May and June of 2012 in accordance with the Marsh and Amphibian Monitoring Protocol (MMP). The purpose of the investigation was to establish relative importance of amphibian breeding sites within the study area by recording breeding calls, incidental visual species observations, and other habitat details observed.

Approximately 7 general areas available for public access (i.e. road right-of-ways, street crossings, etc.) were monitored for amphibian activity, with these areas broken into various sub-stations where monitoring stations were established.

Species noted during the call surveys were generally common species throughout Ontario. No species at risk or special concern species were noted during the 2012 surveys. It is recommended that future investigations will require additional herpetofaunal call surveys, as well as targeted species-at-risk surveys for species such

as Jefferson salamander. The timing of the current study did not allow for survey of salamander species.

3.4 Breeding Birds

Breeding bird surveys were completed on six occasions in June and July 2012, in accordance with Ontario Breeding Bird Atlas (OBBA) methodologies and protocols. Twenty-seven (27) point count locations were assessed during each survey as well as general area searches.

A total of 77 species of birds were observed within the study area during six breeding bird survey visits. Of these, 25 were confirmed breeding, while it is estimated that 29 species were believed to be breeding within the study area. Twenty (20) additional species were considered possible breeders and the remaining 3 were non-breeding visitors to the site. Species diversity ranged from 5 to 23 species. Highest diversities were found in areas of secondary vegetative growth with surrounding urban habitations or watercourses in combination with other nearby habitats. The lowest totals came from mature hardwood or plantations of conifers.

Three Species at Risk were found within the study area: Eastern Meadowlark, Bobolink, and Barn Swallow. All three species are provincially ranked S4B (Apparently Secure – uncommon, but not rare in Ontario) and are designated as Threatened in Ontario and Canada.

Furthermore, eight candidate Species at Risk were observed – Eastern Wood Pewee, Wood Thrush, Field Sparrow, Bank Swallow, Eastern Kingbird, Killdeer, Belted Kingfisher and Grasshopper Sparrow. They are also all ranked S4B in Ontario and listed in the Species at Risk section. These species have not yet been identified formally as species-at-risk under the Endangered Species Act (2007), however they are currently slated for review and may be enacted as species of interest over the course of time that the East Boundary Road study takes place.

Thirteen species identified as area-sensitive in the OMNR 2012 draft Significant Wildlife Habitat criteria were noted in the study area. Red-breasted Nuthatch, Green Heron, and Sharp-shinned Hawk were found in mainly White or Red Pine plantations. Brown Thrasher, Willow Flycatcher and Eastern Towhee were associated with old field/second growth. Ovenbird and Veery were observed in mature deciduous woodlands. Cliff Swallow and Northern Rough-winged Swallow were associated with human structures, while Savannah Sparrow and Red-tailed Hawk were recorded in hay fields/open habitat. Great Blue Heron was recorded as a non–breeding visitor.

Delta-spotted Spiketail and Eastern Red Damsel were detected in one location each. They are both ranked S4 provincially but are local and not easily found across the southwestern Ontario landscape.

The natural areas associated with the watercourses flowing through the study area are probably the most important features from an avian diversity perspective. They have a bird diversity in accordance with the variety and diversity of habitats present along them. The area north of Clyde Rd. that holds an old field/low wetlands complex is also of quality and contains a number of interesting species.

Deciduous lowland forests along various watercourses support a number of birds with an affinity for this type of habitat such as Veery, Wood Thrush, Ovenbird, Ruffed Grouse, Brown Creeper and Eastern Wood Pewee. Some areas that are planted with Red and White Pine harbor more northern species such as Pine Warbler and Red-breasted Nuthatch and nesting Green Heron. There are several areas with overgrown old fields/shrublands where species such as Field Sparrow, Brown Thrasher, Eastern Towhee, Blue-winged Warbler, Alder and Willow Flycatchers are breeding. These areas also held an interesting diversity of Lepidoptera and Odonata (i.e butterflies and dragonflies).

Where Mill Creek crosses Gore Road, the surrounding habitat holds a mix of the former birds described and some woodland species as well. A large wetland along Shellard Road is host to some interesting marsh birds such as Pied-billed Grebe, Hooded Merganser, Wood Duck and Belted Kingfisher. The large hardwoods at the east end of Savage Road are inhabited by species such as Eastern Wood Pewee, Wood Thrush, Great Crested Flycatcher and Yellow-billed Cuckoo. Additionally there were some hayfields (at Clyde and Shellard Roads) that held open country birds such as Bobolink, Eastern Meadowlark, Barn Swallow, Cliff Swallow, Eastern Kingbird, Savannah Sparrow and Grasshopper Sparrow. More generalist species such as Baltimore Oriole, Song Sparrow, American Robin, Red-winged Blackbird, American Goldfinch and Black-capped Chickadee were found throughout the study area.

3.5 Ecological Land Classification and Vegetation

Ecological Land Classification (ELC) and botanical surveys are generally carried out following satellite photography image interpretation, and preliminary mapping of vegetation types are generally created where access to whole properties is available. ELC types are generally identified, sampled and revised, if necessary, in accordance with the sampling protocol of the Ecological Land Classification (ELC) for Southern Ontario (Lee et al., 1998). Some preliminary ELC surveys were completed within the preliminary study area; however the prevalence of inaccessible private properties in the area made it extremely difficult to provide complete and closed polygon analysis of many of the vegetation types noted from public right-of-ways. In general, the areas examined tend to agree with identified polygons on agency EIS layers (i.e. wetlands, woodlands). Further ELC surveys must be completed once property access permission is obtained.

Guelph District MNR was contacted to obtain any records of rare vegetation types and communities in the general area. The records provided included recorded observations within, and outside of, the study area. Records of note include some remnants of prairie

vegetation along Clyde Road and the railway area to the north between Clyde Road and Mill Creek. These observations corroborate records currently in MNR files for the study area.

3.6 Species-at-Risk

In addition to some of the species noted during the various surveys, several species-at-risk have been identified through a search of MNR records. MNR data does not provide specific locations of species-at-risk due to confidentiality concerns, however the species list provided does give some direction to future surveys and identifies key species that should be surveyed for during future work. Further consultation with Guelph District MNR will be required to determine which species should be focused upon, and the applicable survey protocols that should be employed while completing these surveys.

3.7 Summary of Findings

All natural environment information obtained as part of the investigations completed to date is compiled in Figure 3.

3.8 Next Steps and Future Studies

The foregoing provides a summary of the review of available background information and preliminary field studies conducted from public rights-of-way in the general study area. The intent of the preliminary work is to gain a general understanding of the preliminary constraints and issues that may be present within the study area as the Class EA progresses and to assist in refining the study area for the pre-project work.

Once the Class EA study progresses and/or as weather conditions and seasons require, the following items are recommended to be considered for future work based on the findings to date:

- Amphibian surveys, including early spring salamander surveys, that are specific to the route alternatives generated during the early portion of the EA study;
- Breeding bird surveys specific to the route alternatives;
- Targeted species-at-risk surveys for the route alternatives;
- Complete ELC determination and botanical inventories specific to the route alternatives;
- A detailed examination of fish habitat and fisheries communities encountered by the route alternatives;
- Consideration for insect surveys in the vicinity of the route alternatives. This item is likely to receive focused scrutiny as the project advances and amendments to the Endangered Species Act continue.

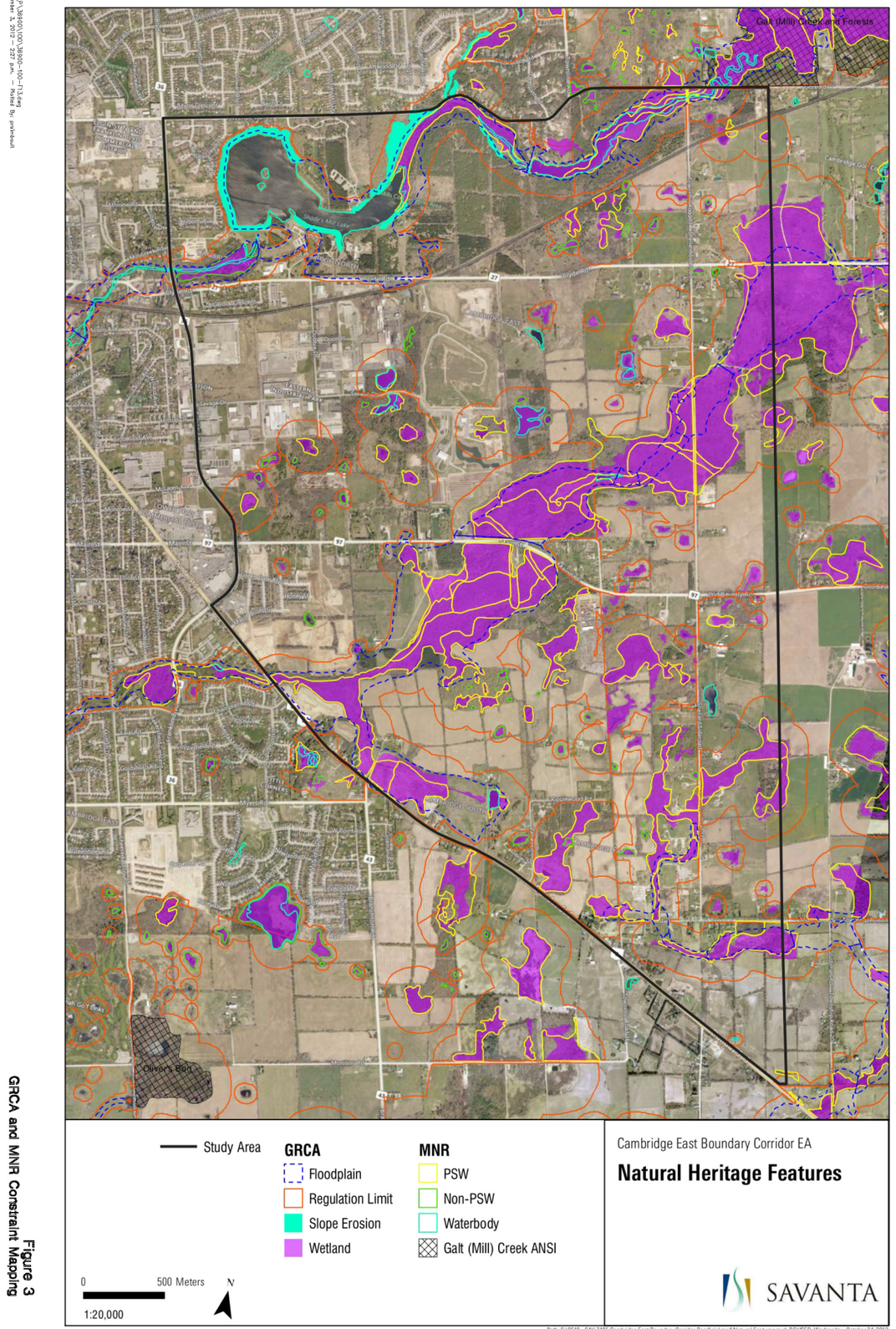


Figure 3
GRCA and MNR Constraint Mapping

4.0 LAND USE

An important facet of refining the East Boundary Road study limits is determining the existing and proposed land use within the study area. Understanding what developments have been approved or have commenced approval applications and what type of developments are proposed is important not only to determine the need for a new transportation facility, but to assist in determining where the best location will be for a transportation network that efficiently serves the developments and surrounding community. More specifically, in order to refine the study area and determine unsuitable and/or potential locations for a road alignment, it is critical to understand the existing, proposed and future developments in the study area such that the best and most efficient use of the land is facilitated.

URS undertook an "Overview of Existing and Planned Land Use", which is found in Appendix B. This report consists of a summary of secondary source information, consultation with local municipalities and field investigations related to existing and planned land uses within the study area.

Based on the 2011 Statistics Canada Census, the population and total private dwellings for Cambridge, North Dumfries and the Region of Waterloo are as follows:

<u>City of Cambridge</u>

- Population: 126,748 (5.3% increase since 2006/median age of 38)
- Total Private Dwellings: 47,818

<u>Township of North Dumfries</u>

- Population: 9,334 (3.0% increase since 2006/median age of 42.1)
- Total Private Dwellings: 3,288

<u>Region of Waterloo</u>

- Population: 507,096 (6.1% increase since 2006/median age of 37.7)
- Total Private Dwellings: 202,121

The following summarizes the place of work status and the mode of transportation to work within the City of Cambridge, Township of North Dumfries and Region of Waterloo (based on 2006 Statistics Canada census data).

City of Cambridge			
Worked at Home	3,340	Car, Truck, Van as Driver	49,405
Worked Outside Canada	210	Car, Truck, Van as Passenger	5,975
No Fixed Workplace Address	5,010	Public Transit	2195
Worked at Usual Place	55,545	Walked or Bicycled	2,580
		All Other Transportation Modes	400
Township of North Dumfries			
Worked at Home	435	Car, Truck, Van as Driver	4,195
Worked Outside Canada	25	Car, Truck, Van as Passenger	285
No Fixed Workplace Address	410	Public Transit	15
Worked at Usual Place	4,345	Walked or Bicycled	205
		All Other Transportation Modes	55
Region of Waterloo			
Worked at Home	15,875	Car, Truck, Van as Driver	189,495
Worked Outside Canada	910	Car, Truck, Van as Passenger	22,415
No Fixed Workplace Address	20,860	Public Transit:	10,965
Worked at Usual Place	220,010	Walked or Bicycled	16,075
		All Other Transportation Modes	1,920

The *Growth Plan for the Greater Golden Horseshoe* (Growth Plan) was released by the Ministry of Public Infrastructure Renewal in June 2006. This document provides policies for managing growth and urban sprawl and building complete communities in the Greater Golden Horseshoe (GGH) to 2031. The Growth Plan specifies density and intensification targets that must be met by GGH municipalities but also includes policies for infrastructure planning such as the development of new transportation corridors in order to support growth. The Region of Waterloo and the City of Cambridge have prepared their new Official Plans in conformity to the Growth Plan. The Region is in the process of reviewing the first draft of the Township of North Dumfries Official Plan.

The *Greenbelt Act and Plan* came into effect in December 2004. The *Greenbelt Plan* includes 800,000 acres of land protected by the *Niagara Escarpment Plan* and the *Oak Ridges Moraine Conservation* Plan. The *Greenbelt Plan* identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological features and functions occurring on this landscape. The *Greenbelt Plan* is a cornerstone of the *Growth Plan for the Greater Golden Horseshoe.* The southern tip of the study area is located within the area governed by the *Greenbelt Plan*.

The study area is not located within areas governed by the *Oak Ridges Moraine Conservation Plan* or the *Niagara Escarpment Plan*.

4.1 Land Use

Based on the 2012 City of Cambridge Official Plan, the portion of the study area within the City of Cambridge is a mix of built-up area and designated greenfield area. Between Avenue Road/Gore Road and Clyde Road/Regional Road 27, the land surrounding Shade's Mill Conservation Area is natural open space, with low / medium density residential on the periphery. Between Clyde Road/Regional Road 27 and Main Street East/Old Beverly Road/Regional Road 97, the majority of the lands are industrial. Towards the eastern boundary of this quadrant, an area is designated as future urban reserve, and this is separated from the industrial lands by pockets of natural open space system and recreation, cemetery and open space. A small pocket of low / medium density residential is present in southeast edge of this quadrant. Between Main Street East/Old Beverly Road/Regional Road 97 and Dundas Street South/Highway 8, the lands are a mix of low / medium residential and natural open space system. There are two small pockets of high density residential abutting Dundas Street South/Highway 8 and one pocket of future urban reserve along the eastern City of Cambridge boundary.

The 1999 City of Cambridge Official Plan classifies the portion of the study area within the City of Cambridge as city urban area. The general land uses identified in the 1999 City of Cambridge Official Plan are generally the same as those identified in the 2012 City of Cambridge Official Plan.

The portion of the study area within the Township of North Dumfries is mainly rural area/agricultural. There is a small pocket of rural area/open space on the west side of Shellard Side Road north of Morrison Road.

Based on the 2012 City of Cambridge Official Plan, two pockets of high density residential are present within the study area: in the vicinity of Maple Bush Drive off of Dundas Street South/Highway 8 and in the Little Corners area where Branchton Road connects to Dundas Street South/Highway 8. The remaining residential areas of low/medium density residential are located on the periphery of Shade's Mill Conservation Area, and in the area bounded by Main Street East/Old Beverly Road/Regional Road 97, Dundas Street South/Highway 8, and the study area's eastern boundary.

Industrial lands are concentrated generally between Clyde Road/Regional Road 27 and Main Street East/Old Beverly Road/Regional Road 97. A small commercial pocket is present at the intersection of Franklin Boulevard/Regional Road 36 and Main Street East/Old Beverly Road/Regional Road 87.

The 2012 City of Cambridge Official Plan highlights one provincially identified former waste disposal site within the study area, located south of Clyde Road/Regional Road 27 and east of the termination of Savage Drive. The area is currently a waste transfer site operated by the Region of Waterloo.

The most notable community and recreational feature within the study area is Shade's Mill Conservation Area, located between Avenue Road/Gore Road and Clyde

Road/Regional Road 27. Shade's Mill Conservation Area is managed by the Grand River Conservation Authority (GRCA) and hosts many leisure and recreational activities. The GRCA's head offices are also located at this site.

There are currently no existing regional cycling routes within the study area, however there are two City of Cambridge bike lanes in service: along Avenue Road/Gore Road from Franklin Boulevard/Regional Road 36 to Chimney Hill Drive, and along Maple Bush Drive east of Dundas Street South/Highway 8.

Both the new ROP and the new City of Cambridge Official Plan have cycling routes and paved shoulder treatments planned within the study area. The new City of Cambridge Official Plan indicates potential new trails within the study area. One trail starts at Franklin Boulevard/Regional Road 36 just south of Avenue Road/Gore Road, then arcs around the south end of Shade's Mills Conservation Area and continues northerly along Townline Road. Another trail connects to this one near its mid-point just north of Clyde Road/Regional Road 27 and travels southerly past Main Street East/Old Beverly Road/Regional Road 97 and then curves westerly to connect to Dundas Street South/Highway 8.

Within the study area, the new City of Cambridge Official Plan identifies seven areas with site specific policies. The following summarizes the site specific policies for each area:

Site 10 – North side of Main Street East/Old Beverly Road/Regional Road 97 of Franklin Boulevard/Regional Road 36
The lands designated as industrial may also be used for the following additional purposes: a) a banqueting hall; b) a commercial use contemplated in Section 8.6.2.4 for lands in a Class 4 Commercial designation, other than a retail commercial use, a business or professional office or, except as provided in Policy 8.6.3.5.1, an automobile service station. This area is also identified in the City of Cambridge 1999 Official Plan as the East Main Street Special District.

Site 22 – Dundas Street South/Highway 8 at the City of Cambridge Southeast Boundary
The lands designated as low / medium density residential may also be used for a landscape-garden centre. This area is also identified in the City of Cambridge 1999 Official Plan as the Dundas Street South Special District.

Site 30 – North of Main Street East/Old Beverly Road/Regional Road 97 Along the City of Cambridge Eastern Boundary
The site designated as low / medium density residential may also be used for business and professional offices. This area is also identified in the City of Cambridge 1999 Official Plan as the Robinson Road Special District.

Site 41 – North of Clyde Road/Regional Road 27 West of the City of Cambridge Eastern Boundary
The lands designated as industrial may be serviced by private sanitary services and may be used for a building materials yard for the storage of reclaimed and new building materials and general industrial uses that do not use water as part of the industrial process.

Site 42 – Southeast Quadrant of Main Street East/Old Beverly Road/Regional Road 97 and Franklin Boulevard/Regional Road 36
The lands on the north side of Green Gate Boulevard, east of Franklin Boulevard/Regional Road 36 designated as low / medium density residential may be developed and used for the purpose of multiple residential dwelling units to a maximum of net residential density of 150 dwelling units per hectare.

Site 46 – At the Easterly Termination of Savage Drive
The identified lands are a portion of the site of the former Regional landfill. Notwithstanding the permitted uses in this plan, these lands are permitted for use as a waste transfer station. Any future additional or alternative uses for this property will require an amendment to this plan.

Currently the Cambridge landfill site is not an active, operating landfill and serves as a transfer station to transfer garbage collected in the Cambridge Area to the Region's main landfill site in Waterloo. The inactive landfill area is generally at the north end of the site and the transfer station is near the middle portion of the site. In addition, all yard waste composting undertaken by the Region of Waterloo occurs at the Cambridge site. Some of the current yard waste grinding and composting areas are being considered for consolidation into the southern portion of the site. A drawing illustrating the Cambridge Landfill/Waste Transfer Station is found in Figure 4.1.

Site 51 – South of Clyde Road/Regional Road 27 at the City of Cambridge Eastern Boundary
The lands designated as future urban reserve located at 975 Clyde Road/Regional Road 27 may also be used for those uses permitted in the recreation, cemetery and open space designation. Also the lands designated future urban reserve located 935 and 855 Clyde Road/Regional Road 27, may also be used for those uses permitted in the prime agriculture designation.

The Township of North Dumfries has forecasted growth in the rural settlement areas to 2016. In order to meet this projected residential growth, additional lands must be designated to accommodate additional housing units in accordance with the policies contained in Section 2.6 of the Official Plan. However, within the study area, there are two settlement areas that have specific policies which do not permit expansion. The first is the Mackie Settlement Area located in the southwest quadrant of Shellard Side Road and Clyde Road/Regional Road 27. The second is the Morrison Settlement Area located in the vicinity of Shellard Side Road and Morrison Road. In addition to the restrictive specific policy, any development on lands designated as dry

industrial/commercial in the Morrison Settlement Area must be compatible with surrounding residential development, and must conform to the policies of the Official Plan.

The Township of North Dumfries also has general policies regarding development applications to expand industrial / commercial areas. However, the Township Road No. 17 Industrial/Commercial Area has an area specific policy which does not permit any expansions within the boundary. This area is located on the west side of Shellard Side Road to the north of Main Street East/Old Beverly Road/Regional Road 97.

The Township of North Dumfries also has zoning by-laws for properties along Shellard Side Road.

There are multiple planned developments within the study area, in various phases of the approval process. Figure 4.2 illustrates these developments.

4.2 Pre-submission Consultations and Concept Plans

Pre-submission Consultations are generally required for all development proposals in the City of Cambridge in order for agency staff to review a concept plan of a proposed development and provide the applicant(s) with comments and any study requirements prior to the applicant(s) submitting a formal planning application to the municipality for review. A concept plan provides a detailed layout of an anticipated development on a single lot or a subdivision based on expected road design, location of services, drainage needs, and density or type of development. A Concept Plan is also commonly used to guide or coordinate the development of lands owned by various parties, or to outline the development of future neighbourhoods.

A number of pre-submission consultations have been held over the last few years for development proposals (with concept plans) on lands within the study area:

- Laurelview-Hammersley Plan: located at 1395 Main Street East/Old Beverly Road/Regional Road 97, for which a plan of subdivision application has been recently submitted to the Region;
- Collishaw Plan: located at the south end of the study area between Dundas Street South/Highway 8 and the City of Cambridge/Township of North Dumfries border;
- Bos Plan: located to the north of Dundas Street South/Highway 8 where it intersects with Branchton Road; and
- The City of Cambridge also owns lands adjacent to the Bos Plan within the Southeast Galt Community Plan intended for a future development of a Community/Recreation Complex.

4.3 Southeast Galt Community Plan

The Southeast Galt Community Plan includes the lands within the City of Cambridge between Dundas Street South/Highway 8 and Main Street East/Old Beverly Road/Regional Road 97. This Plan has been adopted by City Council in 1999. The purpose of the Plan was to guide and direct future development applications in the area bounded by Main Street East, Dundas Street, Franklin Boulevard and the municipal boundary with the Township of North Dumfries. The Southeast Galt Community Plan identified a study area for the East Boundary Road, which coincides with the location of the Proposed Regional Corridor as shown on Map No. 9 in the ROPP and on Map 5b in the new ROP.

4.4 Draft Approved Plan of Subdivision

A draft approved plan of subdivision is part of a Plan of Subdivision application submitted under the Planning Act that has received a preliminary approval from a municipality and can only proceed to registration once all of the conditions of the draft approval have been satisfied. Examples of conditions of draft approval include road widenings, the naming of streets, parkland requirements, rezoning of the area to reflect the new uses in the subdivision and any other municipal requirements. The plan of subdivision generally shows topographic information, natural heritage features, and the proposed lots and streets. Lots may be offered for sale after draft approval, but can be sold only after the plan of subdivision has been registered.

Greengate Village Limited has a draft approved plan of subdivision (30T-03102) within the study area, located between Dundas Street South/Highway 8 and Main Street East/Old Beverly Road/Regional Road 97. The plan covers part of lots 4 and 5, Concession 10 within the City of Cambridge.

4.5 Registered Plan of Subdivision

A registered plan of subdivision, which is the result and final stage of a Plan of Subdivision application, creates legal lots of record that can be sold to another party.

Greengate Village Limited has registered three phases of their draft approved plan of subdivision 30T-03102 located within the study area between Dundas Street South/Highway 8 and Main Street East/Old Beverly Road/Regional Road 97 and as shown on Figure 4.2. Phase 1a comprises of Registered Plan 58M-499. Phase 1b comprises of Registered Plan 58M-522. Phase 1c comprises of Registered Plan 58M-543.

The Region of Waterloo has identified a planned transit corridor along Franklin Boulevard/Regional Road 36 through the study area. According to the ROP, the transit corridor will be a regional or area municipal road or dedicated right-of-way outside of mixed traffic that will accommodate existing or planned high frequency transit service. The only proposed road or corridor within the study area is this East Boundary Road Corridor, which will be determined though a Schedule C project under the Municipal Class Environmental Assessment process.

In summary, the study area presents a rural community setting, with low to medium density residential, agricultural land use and natural open space, in addition to a pocket of centrally located industrial lands. The gently rolling agricultural fields provide key views and vistas along with the natural open space in the vicinity of Shade's Mill Conservation Area, the lands abutting the major watercourses such as Mill Creek and Moffat Creek, and the Beverly Environmentally Sensitive Landscape. The main roadways through the study area also provide notable views, such as Avenue Road/Gore Road, Clyde Road/Regional Road 27, Main Street East/Old Beverly Road/Regional Road 97, Franklin Boulevard/Regional Road 36, Dundas Street South/Highway 8, and Shellard Side Road, as these roads have helped to shape the surrounding land use and its functions.

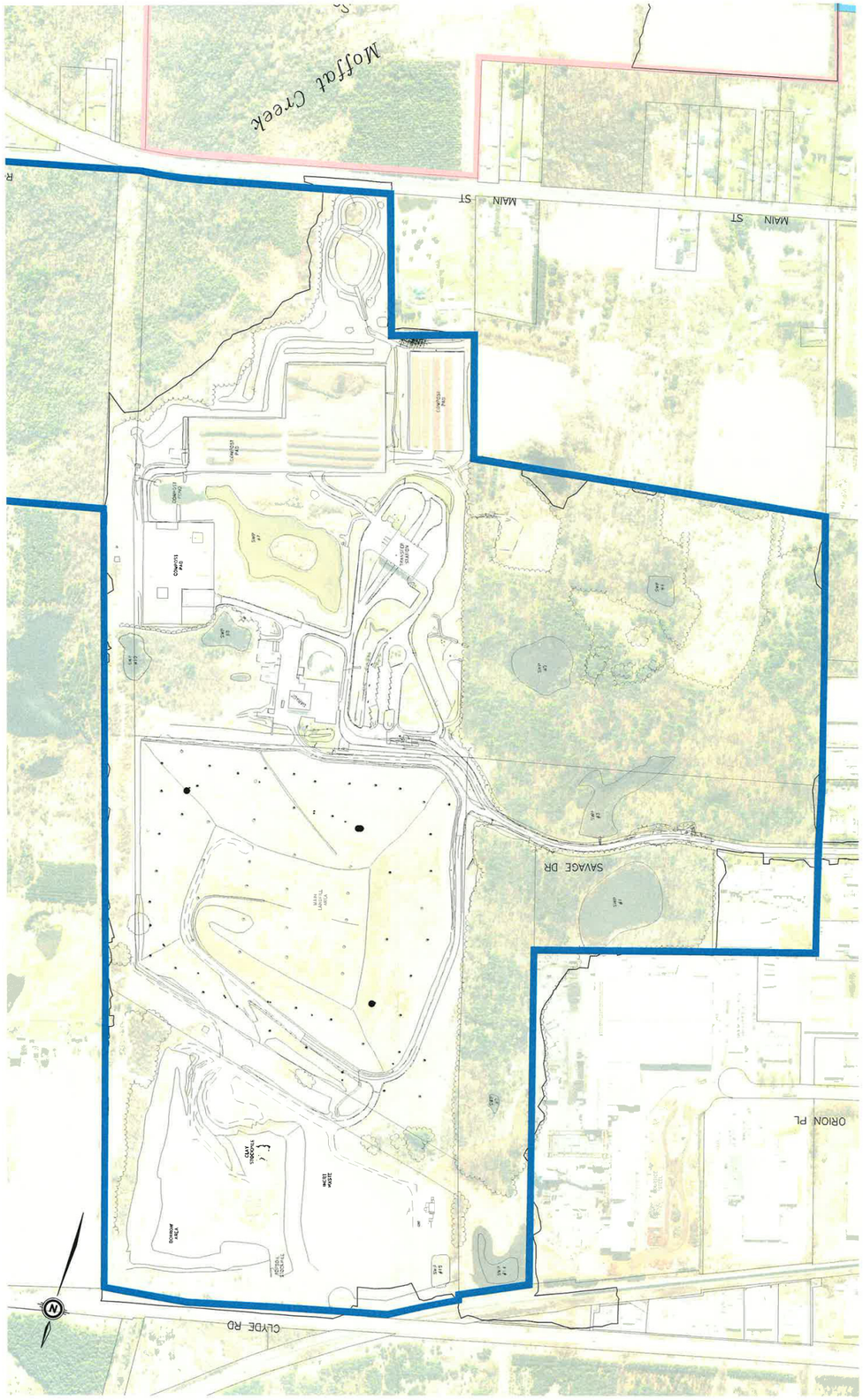
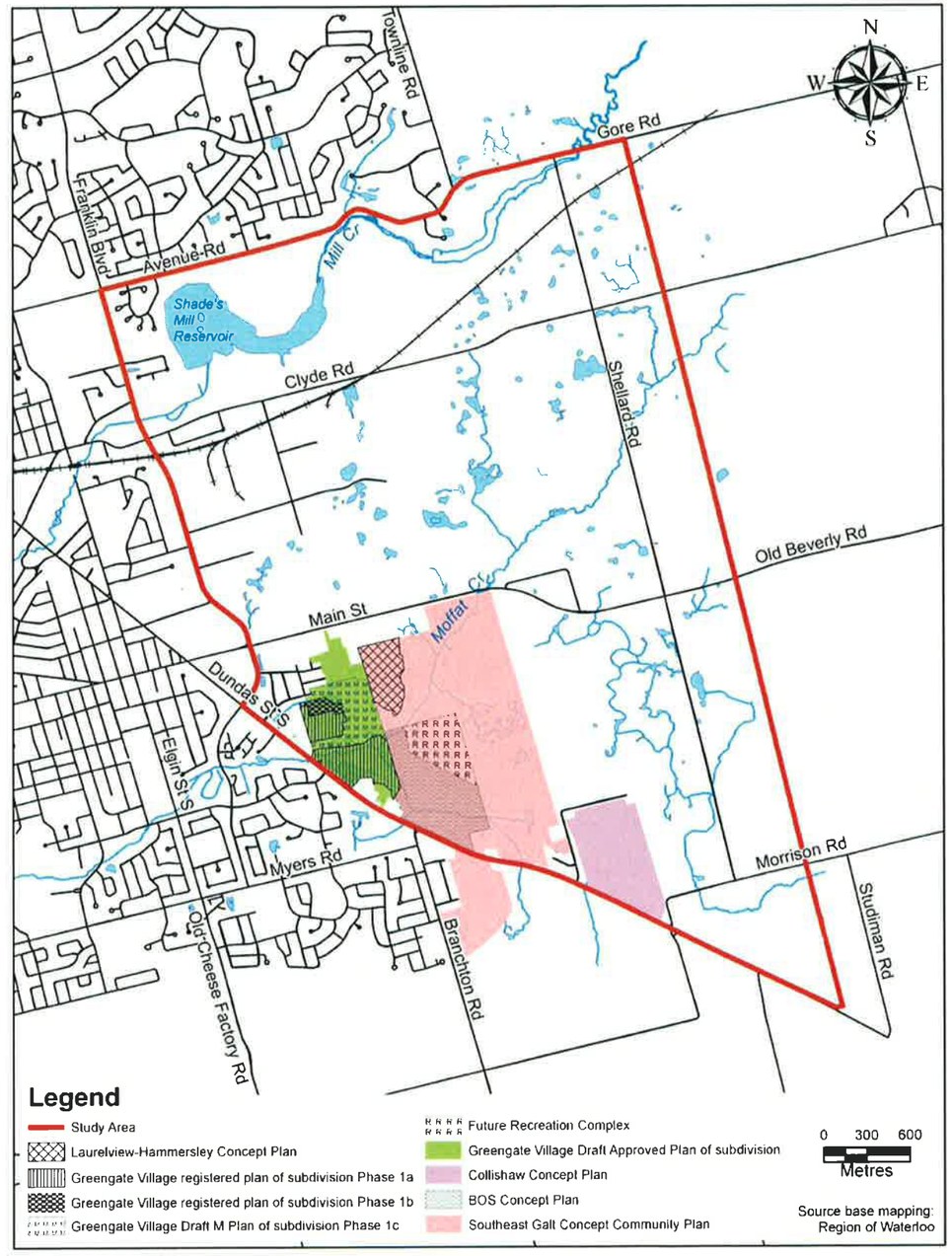


Figure 4.1
Cambridge Landfill Site

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Figure 20: Planned Developments Within the Study Area



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Figure 4.2
Planned Developments

5.0 CULTURAL HERITAGE

URS carried out a preliminary inventory of Heritage Resources that have been identified within the East Boundary Road Corridor Study Area, either by Designation under the Ontario Heritage Act, or by Listing on Municipal Heritage Inventories, and also identified possible heritage resources based on historical mapping and documentation. No detailed site visits or "windscreen" surveys were undertaken, and this study could be characterized as a "desktop" study.

The complete Preliminary Built Heritage Assessment Report is found in Appendix C. This preliminary heritage assessment review has been used to identify existing and potential built heritage resources such that the study area can be refined with the full understanding of the known heritage resources. It is important to note that just because an identified heritage resource may remain within the revised study area, they are still considered important community resources and when future road alignments are being considered, avoidance or special mitigation measures for these properties will be employed as appropriate.

The URS Preliminary Built Heritage Assessment Report will also be used as a resource for the future and final Cultural Heritage Resources Assessment that will be completed when the Study Area has been refined and the full Class EA is undertaken.

Within the Study Area, there are a number of properties that have been recognized as heritage resources:

Two properties designated under Part IV of the Ontario Heritage Act;

- Alexander Adair House, 961 Dundas Street South, Cambridge (CHL 05)
- "Wolfe Farm", 795 Franklin Boulevard, Cambridge (BHR 13)

15 properties that have been listed by the City of Cambridge or the Township of North Dumfries;

North Dumfries

- Richard Bond House, 2591 Dundas Street South, North Dumfries – also listed in Cambridge (CHL 12)
- Shellard House, 1337 Shellard Sideroad, North Dumfries (BHR 19)
- Robert Henderson House, 1481 Shellard Sideroad, North Dumfries (BHR 20)

Cambridge

- Turnbull House, 879 Avenue Road, Cambridge (BHR 01)
- 30 Bluerock Crescent, Cambridge (BHR 01)
- Allan Henderson House, 400 Clyde Road, Cambridge (BHR 03)
- 1101 Dundas Street South, Cambridge (BHR 06)
- 1111Dundas Street South, Cambridge (BHR 07)

- 1151 Dundas Street South, Cambridge (BHR 08)
- John Milroy Sr. House, 1261 Dundas Street South, Cambridge (CHL 09)
- William McArthur House, 1261 Dundas Street South, Cambridge (CHL 10)
- Donald Fraser House, 1791 Dundas Street South, Cambridge (CHL 11)
- 5 Ripplewood Drive, Cambridge (BHR 15)
- 29 Ripplewood Drive, Cambridge (BHR 16)
- 105 Ripplewood Drive, Cambridge (BHR 17)

Five properties that have potential to be identified and listed.

- 1062 Clyde Road, North Dumfries (CHL 04)
- 2371 Dundas Street South, Cambridge (CHL 11)
- 1688 Morrison Road, North Dumfries (CHL 14)
- Robinson Road (Lot 1 in Gore/IX Beverly), North Dumfries (BHR 18)
- 1654 Shellard Sideroad, North Dumfries (CHL 21)

Each of the above noted properties can be located by referring to Figure 5 which identifies the Built Heritage Resources (BHR) and Cultural Heritage Landscapes (CHL) within the study area.

If any of these properties remain within the refined East Boundary Road study area, it is recommended that a Heritage Impact Assessment be prepared for each of the properties identified above and that still remain within the study area. It is also noted that due to the "desktop" nature of this particular study, it was not possible to confirm or identify roadscape or other potential Cultural Heritage Landscapes, and should be addressed as part of a "windscreen" survey or as part of the final Heritage Impact Assessment.

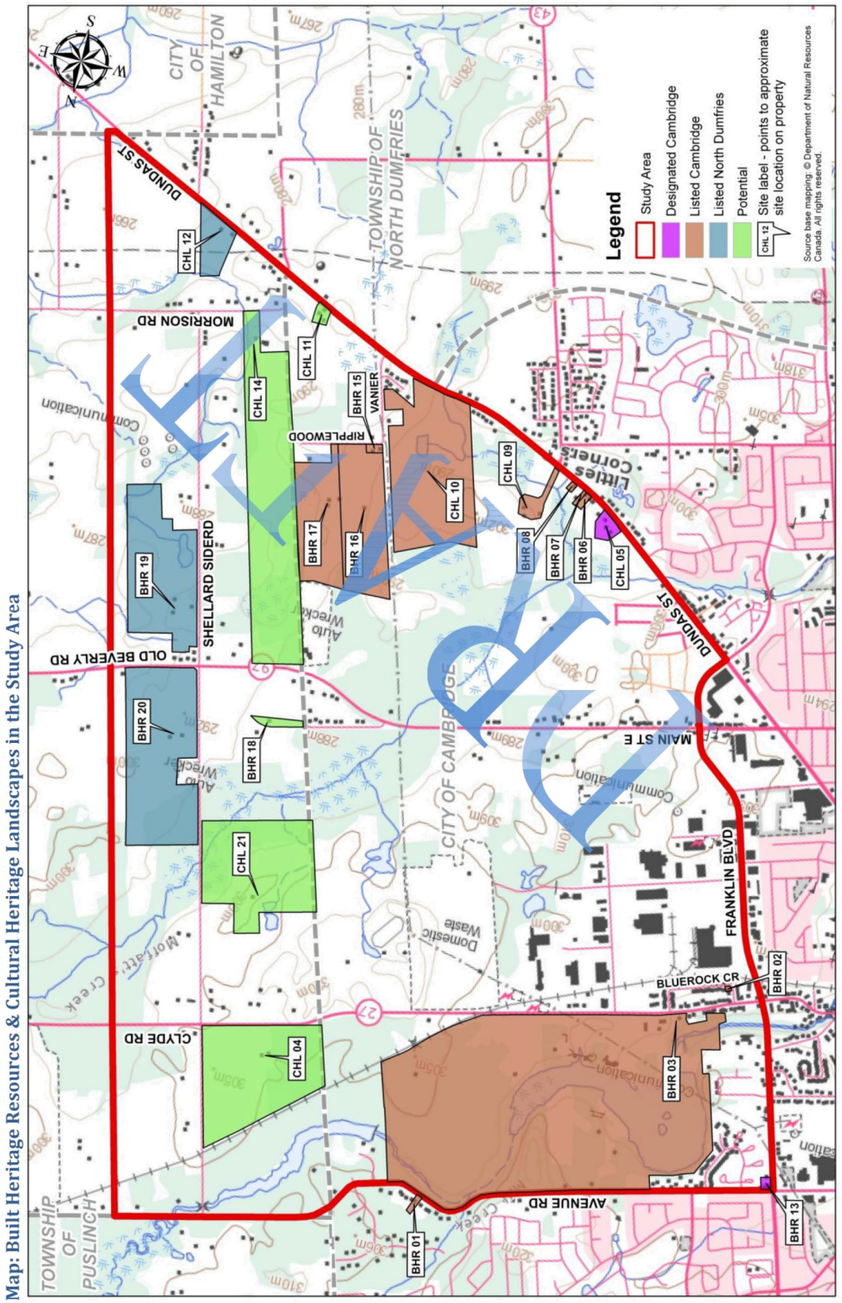


Figure 5.0
Built Heritage Resources & Cultural Heritage Landscapes

Map: Built Heritage Resources & Cultural Heritage Landscapes in the Study Area

Preliminary Heritage Resources Report
East Boundary Road Corridor Study
Region of Waterloo

URS

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6.0 ARCHAEOLOGY

URS conducted an Archaeology Existing Conditions Technical Report for the East Boundary Road Corridor Study Area. The report can be found in Appendix D, which documents the geographic, archaeological and land use history of lands identified within the Study Area in order to assess the potential for them to contain archaeological resources. No optional property inspection was undertaken for this assessment. Satellite imagery, aerial photographs, thematic and historic maps and past archaeological reports, including the Regional Municipality of Waterloo Archaeological Facilities Master Plan, were reviewed in order to evaluate the Study Area's archaeological potential.

The results of the archaeology existing conditions assessment indicate that, while some of the lands within the existing Study Area appear to have been disturbed by past development, much of the Study Area has high archaeological potential. This potential includes both Euro-Canadian and Aboriginal Resources.

These findings are based on the presence of historic homesteads, the proximity of historic roads, certain physiographic features, a relatively high number of known archaeological sites inside or within 1 kilometer of the Study Area, the fact that most of this area is not disturbed and is indicated as having potential on the Regional Municipality of Waterloo Archaeological Master Plan.

Figure 6 summarizes the findings and delineation of areas that have archaeological potential or require additional assessment. Areas on Figure 6 indicating requiring confirmation of archaeological potential (marked in green cross-hatching) should be subject to a Stage 1 Archaeological assessment and property inspection prior to selection of the preferred alternative. These areas have not been identified as having archaeological potential in any documentation, but in many cases they are in proximity to features that are associated with high archaeological potential such as historic travel routes, rivers/streams and previously identified archaeological sites.

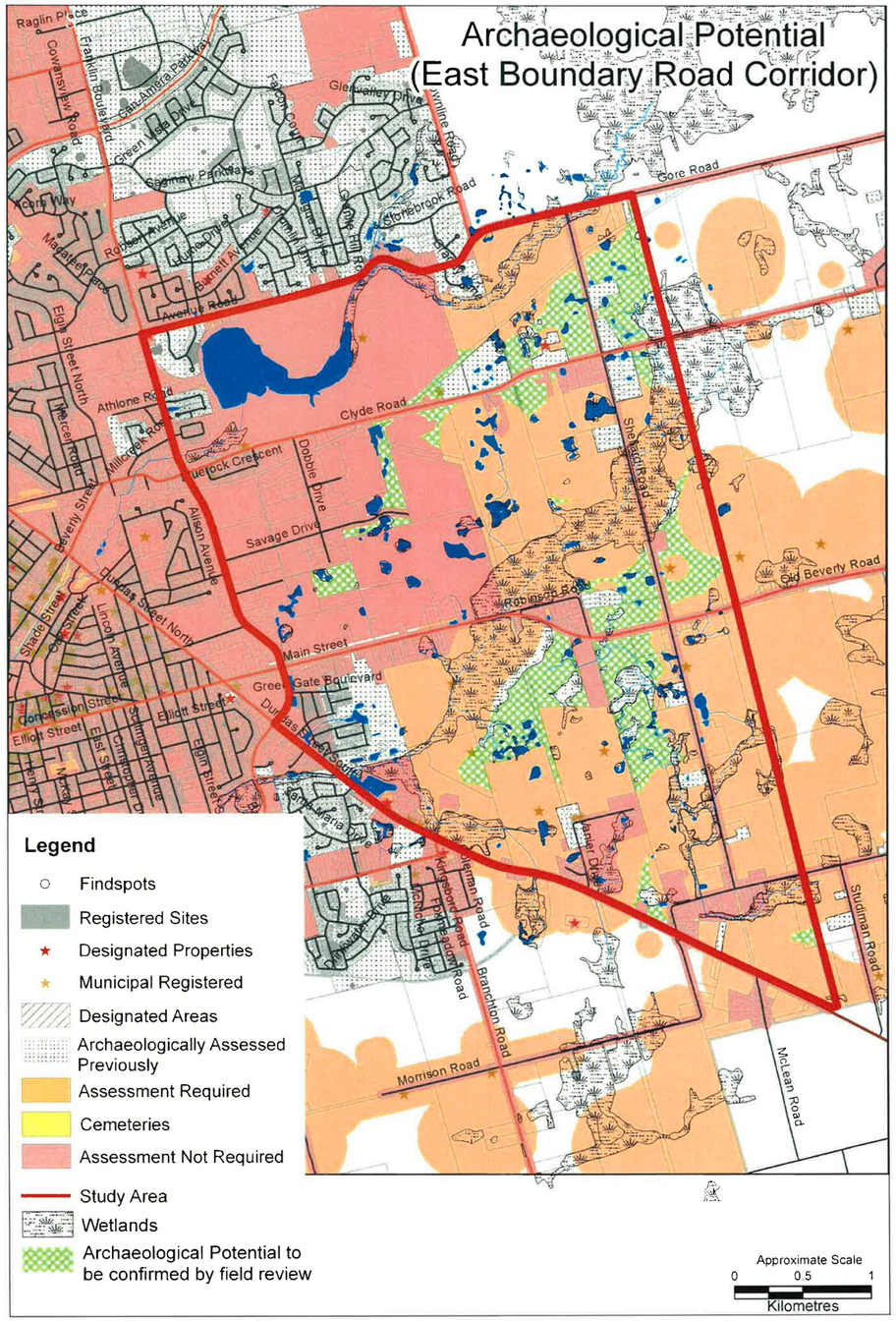


FIGURE 8. UPDATED MAP SHOWING AREAS OF ARCHAEOLOGICAL POTENTIAL (REGION OF WATERLOO 2012).

Figure 6
Archaeological Potential

7.0 CONTAMINATED SOIL

MTE Consultants Inc. undertook a Contaminant Overview Study (COS) within the East Boundary Road study area, as well as a further 250m beyond the study area. The purpose of the COS was to identify potential sources of ground and/or groundwater contamination within the study area and its periphery. The purpose of extending the limits of the COS 250m beyond the study area boundary was due to the potential for contamination to migrate from outside the study area into the study area.

The full Contaminant Overview Study (COS) is found in Appendix E. The methodology used for the COS essentially followed the requirements of a Phase 1 Environmental Site Assessment (ESA), with the exception that no detailed on-site visits were undertaken. In other words, the work consisted of the "desktop" study portion only of a Phase 1 ESA. Various government and private databases were reviewed, historical aerial photographs examined, Ontario Ministry of Natural Resources (MNR) Ontario Base Mapping reviewed, and a brief visual assessment of each site was undertaken from public roads (no property access undertaken). The work completed as part of this pre-project work will form part of a future Phase 1 ESA for specific areas as required by the final Class EA process.

Properties located within the COS study area were included in the sources reviewed. Based on the information resulting from this study, properties were categorized as having very high, high, moderate, low or very low potential (Risk Rating A through E, respectively) to contribute to environmental contamination within the COS study area.

The criteria used to assign a risk rating to each property are summarized as follows:

Risk Rating A – Very High Potential to contribute to Environmental Contamination
It is expected that properties identified as Risk Rating A would require both a full Phase I ESA and a Phase II ESA to evaluate environmental conditions at that property.

Risk Rating B - High Potential to contribute to Environmental Contamination
It is expected that properties identified as Risk Rating B would require both a full Phase I ESA and a Phase II ESA to evaluate environmental conditions at that property.

Risk Rating C - Medium Potential to contribute to Environmental Contamination
It is expected that properties identified as Risk Rating C would likely require both a full Phase I ESA and a Phase II ESA to evaluate environmental conditions at that property.

Risk Rating D – Low Potential to contribute to Environmental Contamination
It is expected that properties identified as Risk Rating D would likely require a Phase I ESA to evaluate environmental conditions at that property. However a Phase II ESA may not be recommended in all cases.

Rating E – Very Low Potential to contribute to Environmental Contamination
It is anticipated that properties identified as Risk Rating E may not require a Phase I ESA to evaluate environmental conditions, unless otherwise required for financial or regulatory requirements.

Each of the identified properties can be located on the map in Figure 7, showing the potentially contaminated sites.

In summary, although evidence of potential contamination does not preclude a road being constructed on that property, it could mean significant additional costs to excavate dispose or treat any contamination that is found. In addition, if any pumping of groundwater is required for installation of deep services such as storm sewers, watermains, other utilities or bridge footings/piles it could also add significant disposal or treatment costs.

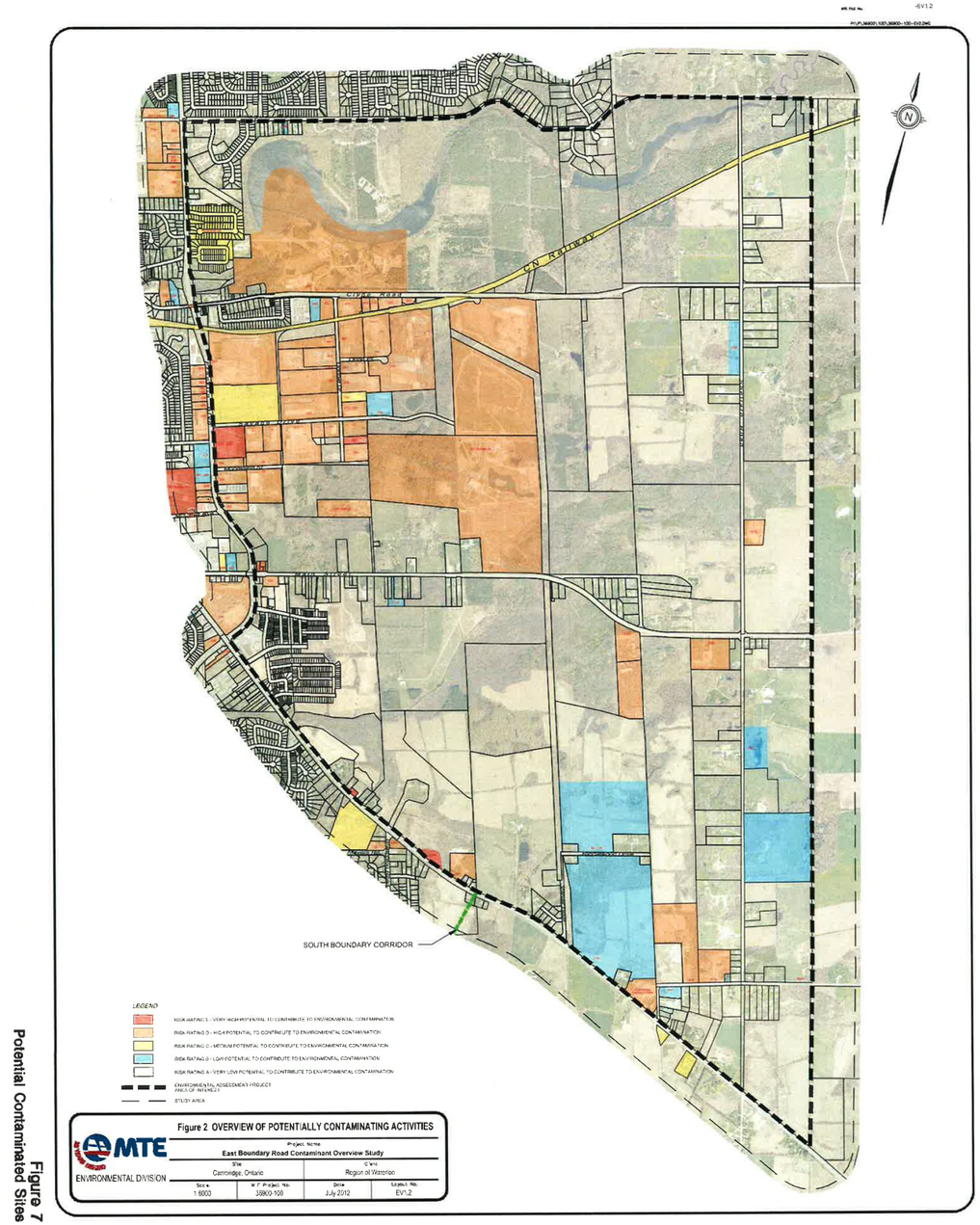


Figure 7
Potential Contaminated Sites

8.0 SUMMARY AND CONCLUSIONS

An East Bypass Road or East Boundary Road for north-south travel in Cambridge between Highway 8 in the south and Townline Road/Highway 401 has been considered for future long-term transportation needs since at least 1967. Almost every transportation study undertaken since then by the City of Cambridge or Region of Waterloo, has illustrated the location of this eastern bypass near the east side of the City of Cambridge and tying into Townline Road to provide access between the south end of Cambridge and Highway 401.

These potential routes or corridors identified in past studies should be considered conceptual or schematic in nature and by no means do these "lines on a drawing" establish a specific or concise corridor for a future east side transportation facility. However, the placement of a future transportation corridor on the east side of Cambridge does recognize a basic transportation principle that is meant to ensure that a future road is utilized to its full extent and allows traffic to be attracted to it and used efficiently. In general, tying into Townline Road provides an alternate access to Highway 401 (east of the partial Franklin Boulevard/Highway 401 interchange) and provides some separation between the parallel Franklin Boulevard corridor.

Given the absence of any previous detailed transportation studies or Class EA's identifying an exact location of an east side roadway, actual and proposed development around Franklin Boulevard has proceeded. This has resulted in some plans or actual development proceeding north of the proposed South Boundary Road and East of Franklin Boulevard. The planned developments are in various stages of approvals, and all include a proposed road network. A road (Wesley Boulevard) has been created through the Greengate Village Limited Registered Plans and this road is proposed to be extended through the future development of the Bos lands by crossing the Moffat Creek Wetland at one of its narrowest locations.

Existing industrial developments just east of Franklin Boulevard between the CPR tracks and Main Street would make it difficult and very expensive to run an east Boundary Road through this area, and displace some significant employment facilities. In addition, portions of the Region's inactive landfill site and operating transfer facility south of Clyde Road between the end of Savage Drive and the Hydro Corridor will be an important consideration when considering constructing a road through this area due to the potential for contamination and the elevations involved with the former landfill area. Another constraint in the west side of the existing study area is the Shades Mill Conservation Area operated by the Grand River Conservation Authority. The presence of this water body and recreational area would also make it difficult to construct a road in the area, as well as impact a significant community leisure facility.

The significant natural environment features associated with Moffat Creek and Mill Creek also provide a significant constraint and will result in several mitigation measures or impacts on an alignment for an east side roadway. Crossing these streams and associated natural environment features will present a problem with approvals,

mitigation measures and habitat compensation regardless of where the road alignment will end up. It could be argued that crossing these natural environment features near the west side of the current study area provides the least natural environment impacts given they provide narrower crossings than areas to the east. However, crossing these natural environment features further east in areas with more open space will allow some additional flexibility in aligning the route and more opportunities for mitigation measures if necessary.

In summary, it is recommended that the study area for the East Boundary Road be revised to keep the eastern and southern study limits the same as the original study area, but the western and northwestern limits be revised somewhat east and south. A recommended new western study limit should take into account that a new alignment through the existing industrial area and Shades Mill Conservation Area is not practical, and limit the intrusions into proposed or planned residential developments near Moffat Creek. However, given the potential for endangered species anywhere throughout the study area, it is also impractical to reduce the study area too significantly. As a result any new routes through the southwestern portion of the study area should be limited to using existing planned road alignments where it can minimize additional intrusion into the Moffat Creek Wetland Complex, and be as close as possible to the Moffat Wetland Complex to avoid/minimize impacts to proposed developments or the Cambridge Landfill Site/Transfer Station.

As part of the review process during the draft report stage, meetings were held with senior staff of Region of Waterloo, City of Cambridge, Township of North Dumfries, County of Wellington and Township of Puslinch. One result of these meetings was a decision to add a triangular portion of the Township of Puslinch into the study area. The area is in the south west portion of the Township of Puslinch, and is in the northeast quadrant of the Townline/Avenue/Gore Road intersection. The decision to add this area in the Township of Puslinch was based on two main factors:

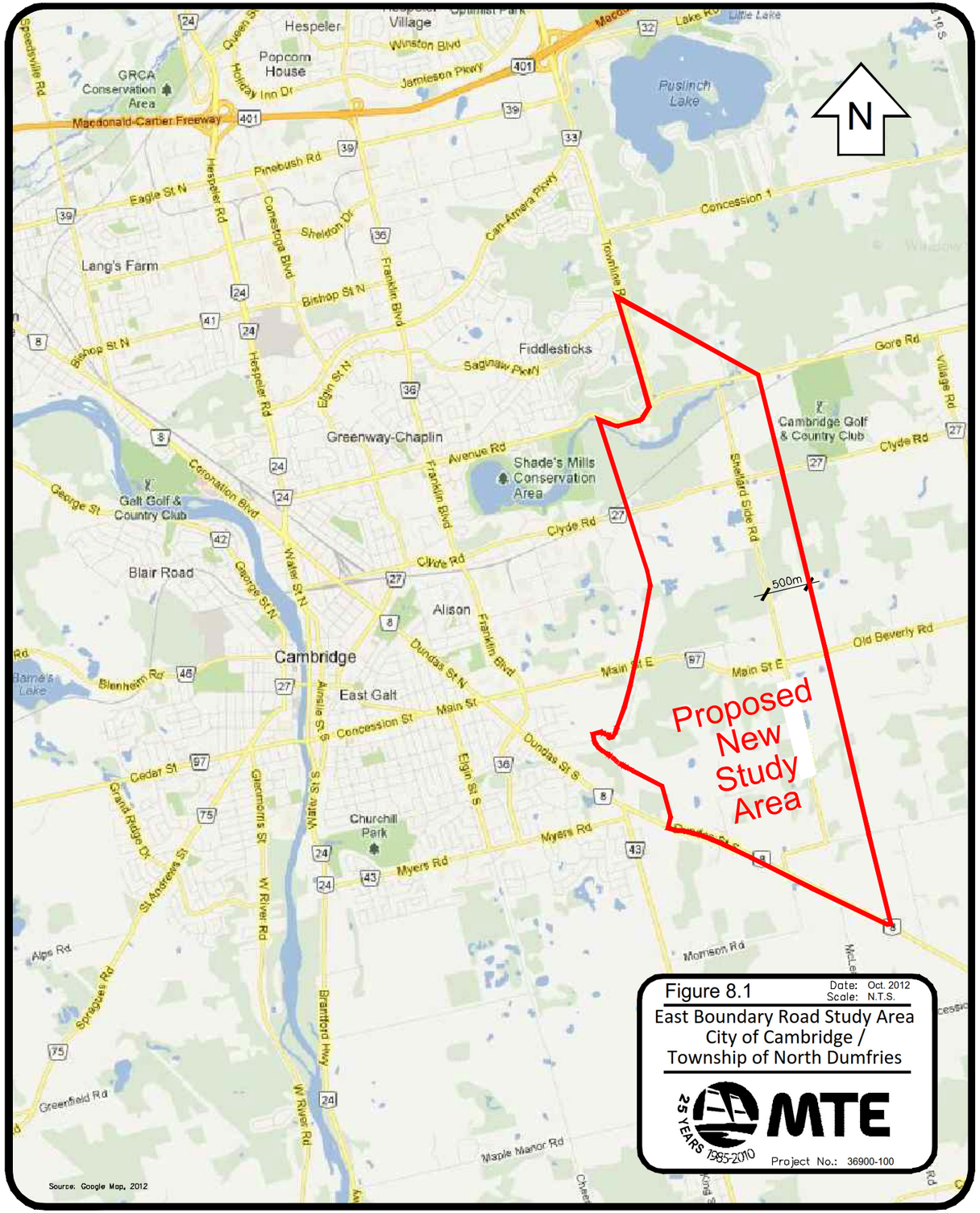
- The addition of the area allowed opportunities for additional potential routes in the eastern portion of the study area to tie into Townline Road;
- A "proposed major roadway" (The East Boundary Raod) was already identified for this area in the Township of Puslinch Official Plan (Schedule A7).

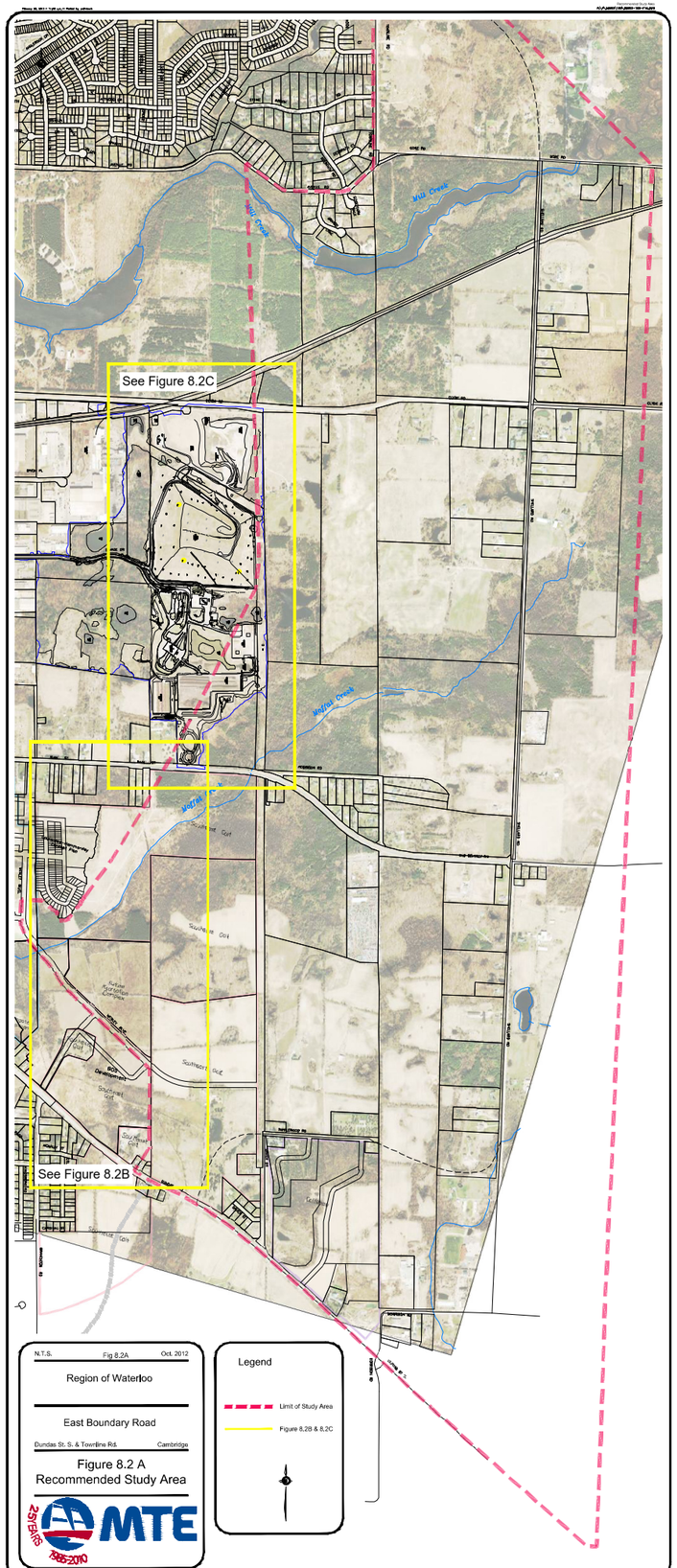
The revised Study Area as described above is illustrated in Figure 8.1 and 8.2 a), b) and c), and is based on the following:

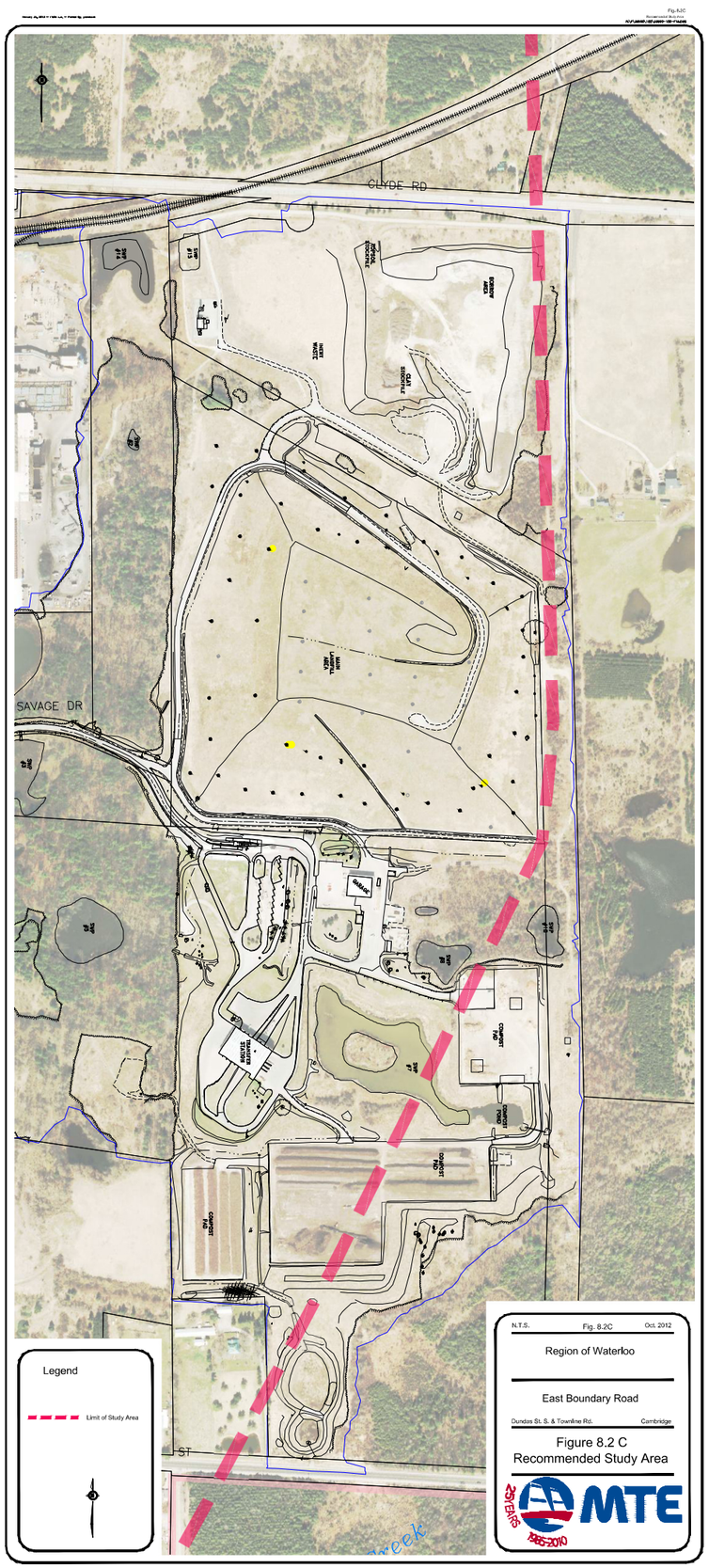
- Allows for potential routes that provide separation between a potential new East Side Road and the existing major north south arterial (Franklin Boulevard);
- The western study limit does not include most of the existing industrial facilities close to Franklin Boulevard, most of the old landfill site/existing transfer facility (but does include existing compost areas and stormwater management ponds) and the existing Shades Mill Conservation Area from the study area;

- The western study limit does include areas of proposed developments in various stages of approval with the City of Cambridge and Region of Waterloo. However the intention of this western limit is to examine routes that would utilize existing proposed roadways, (i.e. Wesley Boulevard) and crossing including the Moffat Creek Wetland Complex at one of its narrowest points to minimize impacts on this important natural environment feature;
- Although an "eastern" alignment will still require crossing several natural environment features associated with wetlands and Moffat and Mill Creek, these crossing impacts could be mitigable. In addition, several apparent "open" areas provide opportunities to avoid some of natural environment features. However, until additional detailed studies are undertaken and extensive discussions are held with the approving agencies, the actual viability of an eastern alignment is unclear and must be compared to the issues associated with other alternatives including a more "western" alignment;
- The revised study limits avoid direct impacts to several potentially contaminated sites associated with existing industry and/or the former landfill in the northwest section of the original study area. The revised study area does include a portion of the southern end of the landfill/transfer station that is somewhat removed from the former landfilled section. However, additional studies will need to be undertaken to determine the exact extent of contaminated groundwater concerns in this area. Some additional potentially contaminated properties have been identified within the revised study area, but it is expected that alternatives can be identified such that the specific localized contaminated areas can be avoided or mitigated;
- A number of potential heritage properties have been identified within the revised study area. However, the actual heritage features will require additional investigations and they are not necessarily associated with the entire property. Therefore it is anticipated that alternatives can be identified that should be able to avoid specific heritage features or allow mitigable actions;
- A number of properties with archaeological potential have been identified within the revised study area and require further investigation. The archaeological potential has not been based on actual archaeological finds but will require further study. It is anticipated that any identified features can be avoided or mitigated as more details are confirmed.

It is important to note that the revised study area for the future East Side Boundary Road Class EA is for the actual location of a new transportation facility(s) only. As with any transportation Class EA, investigation of travel demand and potential additional expansion of other transportation facilities outside the actual study area must be considered to develop a complete and comprehensive solution.




See Figure 8.2C
See Figure 8.2B
Mill Creek
Mill Creek
Moffat Creek
Moffat Creek
Southeast Galt
Southwest Galt
Southwest Galt
Southwest Galt
Southwest Galt
Southwest Galt
BOS Development
Future Recreation Complex
Future Recreation Complex
Future Recreation Complex



MTE More Than Engineering

25 YEARS 1985-2010

APPENDIX A

NATURAL ENVIRONMENT MEMO

SAVANTA

MEMORANDUM

To: File No. 7185 – East Boundary Road Corridor
From: Sean Geddes

CC

File: 7185
Date: September 7, 2012

Re: Cambridge East Boundary Road Corridor EA Study
Preliminary Review of Natural Environment Issues in Study Area

Savanta Inc. (Savanta) was retained, in partnership with MTE Consultants Inc. and URS Canada Inc., to complete preliminary overview work in advance of the formal Environmental Assessment (EA) study planned for the Cambridge East Boundary Road Corridor. Specifically, Savanta undertook a preliminary overview of environmental and natural heritage features within the study area boundaries identified initially for the purpose of the EA study.

The overview study included the review of background information from the Ministry of Natural Resources, Grand River Conservation Authority, Region of Waterloo and various studies previously completed in the vicinity of the study area. GRCA and MNR (Land Information Ontario – LIO) GIS mapping was consulted and transferred to provide an understanding of the various landform-based constraints within the study area. In addition, Savanta completed various natural heritage surveys throughout the spring and summer of 2012 to gain an understanding of specific natural heritage features and functions that were identified during preliminary background information mapping. These surveys included spring amphibian call surveys, breeding bird surveys, preliminary Ecological Land Classification and cursory vegetation surveys, and species at risk observations.

The following provides an overview summary of the various natural heritage features and functions within the East Boundary Road Corridor EA study area.

1.0 Subwatersheds, Aquatic Habitat and Fisheries

Three main subcatchments comprise the drainage of the Study Area; Mill Creek, Moffat Creek and Fairchild Creek.

Mill Creek, a coldwater stream supporting brook trout and brown trout, flows to Shade's Mills reservoir, a 32-hectare (80 acre) flood control facility operated by the Grand River Conservation Authority. The Shade's Mills Conservation Area is located on the north side of the reservoir, while the head office and administration building of the GRCA is located on the south side. In addition to the presence of trout in Mill Creek upstream of Gore Road and in an additional tributary crossing Avenue Road, the reservoir supports warmwater sportfish species such as northern pike, yellow perch, largemouth bass and smallmouth bass. Northern pike and Brown Trout have been observed spawning

immediately upstream of Shade's Mill reservoir, as documented in MNR files. Downstream of the reservoir, Mill Creek is classified as coldwater habitat all the way to its confluence with the Grand River.

Throughout the Study Area, Moffat Creek is classified as a warmwater stream, supporting primarily baitfish species. Immediately downstream of Dundas Street, in the vicinity of Azores Crescent, the stream classification changes to coldwater habitat extending to its confluence with the Grand River. Although no coldwater species have been collected from this section, groundwater seepage has been noted in downstream areas (Moffat Creek Subwatershed Study, 1996), possibly resulting in the coldwater classification.

In the southeast corner of the Study Area to the south of Old Beverly Road, are several wetland pockets of the Sheffield-Rockton Complex PSW. These wetland areas are associated with the headwaters of Fairchild Creek, a warmwater stream system that enters the Grand River downstream of Brantford. Based on MNR records, many of the culvert and channel areas examined over time exhibit intermittent conditions and at best, may provide seasonal habitat for species of cyprinids (minnows).

2.0 Natural Heritage Corridors, Wetlands and ANSIs

Two large natural heritage system corridors traverse the Study Area. The Provincially Significant Mill Creek Wetland Complex Corridor surrounds Mill Creek and enters the north boundary of the study area at the intersection of Gore Road and Shellard Road. The Provinically Significant Moffat Creek Swamp enters the middle portion of the study area at Shellard Road. In the southeast corner of the study area, smaller wetland pockets associated with the Sheffield-Rockton Complex PSW surround headwater areas of Fairchild Creek at Shellard Road near Dundas Street.

The Mill Creek PSW complex surrounds Mill Creek proper and its tributaries. Immediately to the northeast of the Study Area, a large portion of the Mill Creek PSW also contains the Galt (Mill) Creek and Forests Life Science Area of Natural and Scientific Interest (ANSI). While this ANSI lies just outside of the present Study Area boundary, its presence on adjacent lands should be taken into consideration during the EA study.

Traversing the mid-portion of the study area in a northeast to southwest direction, the Moffat Creek Swamp PSW surrounds the main stem of Moffat Creek. Smaller pockets of wetland also associated with this complex are located away from the creek, in the vicinity of the east end of Savage Drive and the south end of Dobbie Drive.

In the southeast corner of the Study Area to the south of Old Beverly Road, are several wetland pockets of the Sheffield-Rockton Complex PSW. These wetland areas are associated with the headwaters of Fairchild Creek, a warmwater stream system that enters the Grand River downstream of Brantford.

3.0 Amphibian Habitat

Amphibian call surveys were completed on April 19, May 14 and June 19, 2012 in accordance with the Marsh and Amphibian Monitoring Protocol (MMP). Surveys were conducted at night, in accordance with Environment Canada's Marsh Monitoring

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Program (2004). All locations were surveyed three times (April, May, and June) during optimal weather conditions (low wind levels, no heavy rain). Where noise from plane, road traffic and/or train was present, monitoring did not begin until there was a quiet period. All calls heard within the survey areas were recorded as well as any incidental call observations on adjacent lands.

The purpose of the investigation was to establish relative importance of amphibian breeding sites within the study area by recording breeding calls, incidental visual species observations, and other habitat details observed. The provincial and global status of species identified on the Subject Lands was referenced in the Natural Heritage Information Centre (NHIC, 2011) database.

Approximately 7 general areas available for public access (i.e. road right-of-ways, street crossings, etc.) were monitored for amphibian activity, with these areas broken into various sub-stations where monitoring stations were established.

Of the areas surveyed, the following locations were areas of the highest concentrations of calling amphibians during the 2012 surveys (based on call code estimates of numbers too high to be estimated);

- South end of Townline Road, at north side of Mill Creek PSW;
- Gore Road, between Townline Road and Shellard Road, north side of Mill Creek PSW;
- Pond areas off Shellard Road, between Gore Road and Clyde Road;
- Pond areas off Savage Drive, east of landfill gates;
- Wetland area at the southeast intersection of Robinson Road and Main St. E/Old Beverly Road;
- Wetland area at the northeast corner of Robinson Road (right angled turn in road);
- Wetland area west of Shellard Road and immediately south of Clyde Road;
- Small pond west of Shellard Road and south of Old Beverly Road; and,
- Wetland area west of Shellard Road and immediately north of Morrison Road.

Species noted during the call surveys were generally common species throughout Ontario. No species at risk or special concern species were noted during the 2012 surveys.

It is expected that 2013 surveys will require additional herpetofaunal call surveys, as well as targeted species-at-risk surveys for species such as Jefferson salamander. The timing of the current study did not allow for survey of salamander species.

4.0 Breeding Birds

Breeding bird surveys were completed on 12, 14, 15 June and 7, 8 and 9 July 2012, in accordance with Ontario Breeding Bird Atlas (OBBA) methodologies and protocols. Twenty-seven (27) point count locations were assessed during each survey as well as general area searches. Point count locations were placed in all represented habitats and along sections that were available for public access. Each point count location was surveyed for birds within 100m and outside 100m (each counted separately) where possible. Birds were observed for signs of breeding behavior. Surveys were conducted

between 0526 am and 0953 am on sunny to partially cloudy days with winds of less than 15km/hr.

A total of 77 species of birds were observed within the study area during six breeding bird survey visits 12, 14, 15 June and 7-9 July 2012. Of these, 25 were confirmed breeding, while it is estimated that 29 species were believed to be breeding within the study area. Twenty (20) additional species were considered possible breeders and the remaining 3 were non-breeding visitors to the site. Species diversity ranged from 5 to 23 species across the twenty-seven point counts. Highest diversities were found in areas of secondary vegetative growth with surrounding urban habitations or watercourses in combination with other nearby habitats. The lowest totals came from mature hardwood or plantations of conifers.

Three Species at Risk were found within the study area: Eastern Meadowlark (*Sturnella magna*) Bobolink (*Dolichonyx oryzivorus*) and Barn Swallow (*Hirundo rustica*). All three species are provincially ranked S4B (Apparently Secure – uncommon, but not rare in Ontario) and are designated as Threatened in Ontario and Canada.

Furthermore, eight candidate Species at Risk were observed – Eastern Wood Pewee (Contopus virens), Wood Thrush (Hylocichla mustelina) Field Sparrow (Spizella pusilla), Bank Swallow (Riparia riparia), Eastern Kingbird (Tyrannus tyrannus), Killdeer (Charadrius vociferous), Belted Kingfisher (Megaceryle halcyon) and Grasshopper Sparrow (Ammodramus savannarum). They are also all ranked S4B in Ontario and listed in the Species at Risk section. These species have not yet been identified formally as species-at-risk under the Endangered Species Act (2007), however they are currently slated for review and may be enacted as species of interest over the course of time that the EBR study takes place.

Thirteen species that are identified as area-sensitive in the OMNR 2012 draft Significant Wildlife Habitat criteria were noted in the study area. Red-breasted Nuthatch (7 locations) Green Heron (2 locations) and Sharp-shinned Hawk (1 location) were found in mainly White or Red Pine plantations. Brown Thrasher (3 locations), Willow Flycatcher (2 locations) and Eastern Towhee (2 locations) were associated with old field/second growth. Ovenbird (3 locations) and Veery (9 locations) were observed in mature deciduous woodlands. Cliff Swallow (1 location) and Northern Rough-winged Swallow (3 locations) were associated with human structures, while Savannah Sparrow (1 location) and Red-tailed Hawk (one location) were recorded in hay fields/open habitat. Great Blue Heron was recorded as a non–breeding visitor.

Delta-spotted Spiketail (Cordulegaster diastatops) and Eastern Red Damsel (Amphiagron saucium) were detected in one location each. They are both ranked S4 provincially but are local and not easily found across the southwestern Ontario landscape.

The natural areas associated with the watercourses flowing through the study area are probably the most important features from an avian diversity perspective. They have a bird diversity in accordance with the variety and diversity of habitats present along them. The area north of Clyde Rd. that holds an old field/low wetlands complex is also of quality and contains a number of interesting species.

Decidous lowland forests along various watercourses support a number of birds with an

affinity for this type of habitat such as Veery, Wood Thrush, Ovenbird, Ruffed Grouse, Brown Creeper and Eastern Wood Pewee. Some areas that are planted with Red and White Pine harbor more northern species such as Pine Warbler and Red-breasted Nuthatch and nesting Green Heron. There are several areas with overgrown old fields/shrublands where species such as Field Sparrow, Brown Thrasher, Eastern Towhee, Blue-winged Warbler, Alder and Willow Flycatchers are breeding in. These areas also held an interesting diversity of Lepidoptera and Odonata (i.e butterflies and dragonflies).

Where Mill Creek crosses Gore Road, the surrounding habitat holds a mix of the former birds described and some woodland species as well. A large wetland along Shellard Road is host to some interesting marsh birds such as Pied-billed Grebe, Hooded Merganser, Wood Duck and Belted Kingfisher. The large hardwoods at the east end of Savage Road are inhabitated by species such as Eastern Wood Pewee, Wood Thrush, Great Crested Flycatcher and Yellow-billed Cuckoo. Additionally there were a couple of hayfields (at Clyde and Shellard Roads) that held open country birds such as Bobolink, Eastern Meadowlark, Barn Swallow, Cliff Swallow, Eastern Kingbird, Savannah Sparrow and Grasshopper Sparrow. More generalist species such as Baltimore Oriole, Song Sparrow, American Robin, Red-winged Blackbird, American Goldfinch and Black-capped Chickadee were found throughout the study area.

5.0 Ecological Land Classification and Vegetation

Ecological Land Classification (ELC) and botanical surveys are generally carried out following satellite photography image interpretation, and preliminary mapping of vegetation types are generally created where access to whole properties is available. ELC types are generally identified, sampled and revised, if necessary, in accordance with the sampling protocol of the Ecological Land Classification (ELC) for Southern Ontario (Lee et al., 1998). Some preliminary ELC surveys were completed within the preliminary study area for the EBR, however the prevalence of private properties in the area made it extremely difficult to provide complete, closed polygon analysis of many of the vegetation types noted from public right-of-ways. In general, the areas examined tend to agree with identified polygons on agency EIS layers (i.e. wetlands, woodlands). Further ELC surveys will be completed in 2013 once property access permission is obtained.

Guelph District MNR was contacted to obtain any records of rare vegetation types and communities in the general area. The records provided included recorded observations within, and outside of, the study area. Records of note include some remnants of prairie vegetation along Clyde Road and the railway area to the north between Clyde Road and Mill Creek. These observations corroborate records currently in MNR files for the study area.

6.0 Species-at-Risk

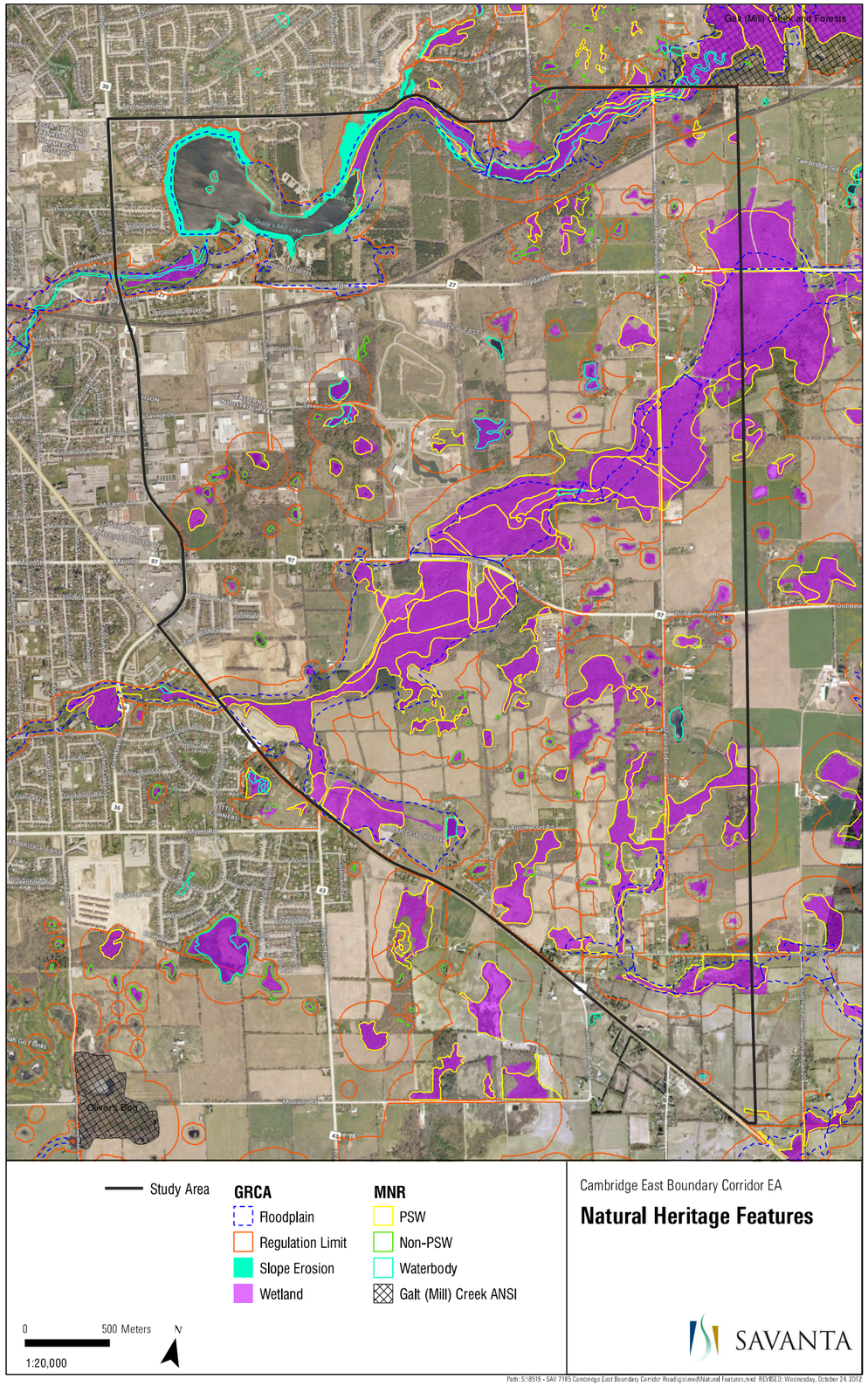
In addition to some of the species noted during the various surveys, several species-at-risk have been identified through a search of MNR records. MNR data does not provide specific locations of species-at-risk due to confidentiality concerns, however the species list provided does give some direction to future surveys and identifies key species that should be surveyed for during future work. Further consultation with Guelph District MNR will be required to determine which species should be focused upon, and the applicable survey protocols that should be employed while completing these surveys.

7.0 Next Steps and Future Studies

The foregoing provides a summary of the review of available background information and preliminary field studies conducted from public rights-of-way in the general study area. The intent of the preliminary work is to gain a general understanding of the preliminary constraints and issues that may be present within the study area as the EA study progresses. The following items are presented for consideration once the EA study commences and permission to enter is granted for various private properties along the route alternatives generated during that study:

- Amphibian surveys, including early spring salamander surveys, that are specific to the route alternatives generated during the early portion of the EA study;
- Breeding bird surveys specific to the route alternatives;
- Targeted species-at-risk surveys for the route alternatives;
- Complete ELC determination and botanical inventories specific to the route alternatives;
- A detailed examination of fish habitat and fisheries communities encountered by the route alternatives;
- Consideration for insect surveys in the vicinity of the route alternatives. This item is likely to receive focused scrutiny as the project advances and amendments to the Endangered Species Act continue.

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APPENDIX B

OVERVIEW OF EXISTING AND PLANNED LAND USES

EAST BOUNDARY ROAD CORRIDOR STUDY

CITY OF CAMBRIDGE AND TOWNSHIP OF NORTH DUMFRIES

Overview of Existing and Planned Land Uses

DECEMBER 2012

URS

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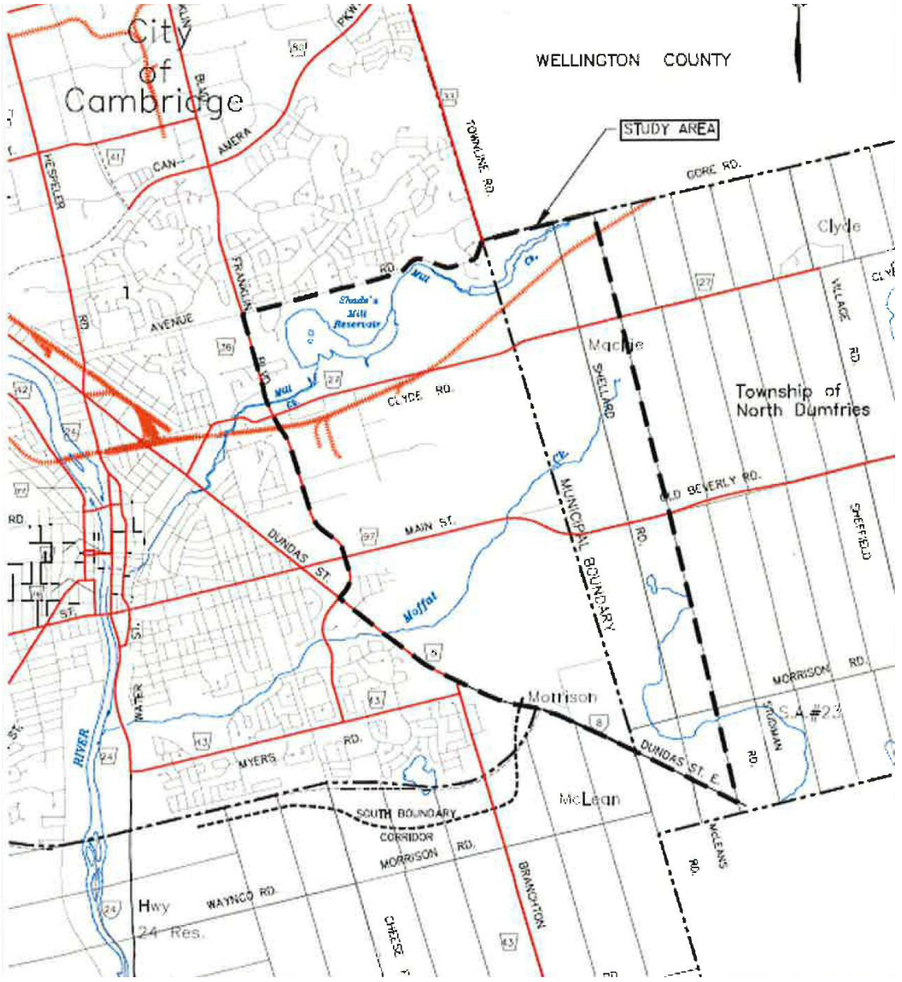
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1.0 INTRODUCTION

The purpose of the East Boundary Road Corridor Study is to identify an alignment for the proposed East Boundary Road Corridor that alleviates traffic along the existing arterial roads, accommodates future growth of the City of Cambridge and Region of Waterloo, complies with Regional and Provincial policies, and minimizes impacts on transportation, the natural environment, cultural environment, and socio-economic environment (including development). The work will be undertaken as a Schedule C project under the Municipal Class Environmental Assessment process. The study area is generally bounded by Avenue Road/Gore Road to the north, Franklin Boulevard/Regional Road 36 to the west, Dundas Street South/Highway 8 to the south, and 500 m east of Shellard Side Road to the east (refer to **Figure 1**).

Figure 1: Study Area



Prior to the initiation of the East Boundary Road Corridor Class Environmental Assessment Study, the Region of Waterloo and City of Cambridge agreed to review the limits of the proposed study area since several existing and proposed developments are located in the western portion of the proposed study area. The purpose of this *Overview of Existing and Planned Land Uses Report* is to define the proposed and existing land uses within the current study area. This land use information will assist in determining a revised study area that takes into account potential impacts to the existing and planned land uses, in conjunction with other potentially significant impacts to the natural environment, heritage and archaeological resources, as well as transportation network issues and contaminated soil or groundwater.

Land use considerations are integral to the development and evaluation of alternative solutions and alternative designs. The land use inventory is used as one means of examining the environmental and technical feasibility of alternatives, with the intent of minimizing the potential for adverse effects while satisfying the objectives of the study. This *Overview of Existing and Planned Land Uses Report* presents a summary of the secondary source information collected, consultation undertaken with local municipalities, and the field investigations undertaken in July 2012 related to existing and planned land uses in the study area.

The following resources were consulted to obtain information on the existing and planned land uses within the study area:

- Aerial photography;
- City of Cambridge 1999 Official Plan;
- City of Cambridge 2012 Official Plan;
- Township of North Dumfries 2008 Official Plan;
- Region of Waterloo 2006 Official Plan;
- Region of Waterloo 2010 Official Plan;
- Meetings and correspondence with staff from the City of Cambridge, Township of North Dumfries and Region of Waterloo;
- Statistics Canada 2006 and 2011 Census data;
- Growth Plan for the Greater Golden Horseshoe;
- Greenbelt Plan;
- Oak Ridges Moraine Conservation Plan;
- Niagara Escarpment Plan;
- Ministry of Agricultural, Food and Rural Affairs - Land Canada Inventory; and
- Grand River Conservation Authority.

2.0 GEOGRAPHICAL AND POLICY CONTEXT

2.1 GEOGRAPHICAL CONTEXT

The study area is situated in the City of Cambridge and the Township of North Dumfries within the Region of Waterloo. The study area is generally bounded by Avenue Road/Gore Road to the north, Franklin Boulevard/Regional Road 36 to the west, Dundas Street South/Highway 8 to the south, and 500 m east of Shellard Side Road to the east (refer to **Figure 1**).

Table 1 summarizes the population and total private dwellings (based on 2011 Statistics Canada census data) and **Table 2** summarizes the place of work status, mode of transportation to work, and the breakdown of industry within the City of Cambridge, Township of North Dumfries and Region of Waterloo (based on 2006 Statistics Canada census data).

Table 1: Population Numbers and Dwellings in the Study Area

Municipality	Population	Total Private Dwellings
City of Cambridge	126,748 (5.3% increase since 2006) (median age of 38)	47,818
Township of North Dumfries	9,334 (3.0% increase since 2006) (median age of 42.1)	3,288
Region of Waterloo	507,096 (6.1% increase since 2006) (median age of 37.7)	202,121

Source: Statistics Canada. 2012. Cambridge, Ontario (Code 3530010) and Waterloo, Ontario (Code 3530) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released May 29, 2012. http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E (accessed June 20, 2012).
Source: Statistics Canada. 2012. North Dumfries, Ontario (Code 3530004) and Waterloo, Ontario (Code 3530) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released May 29, 2012. http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E (accessed June 20, 2012).
Source: Statistics Canada. 2012. Waterloo, Ontario (Code 3530) and Waterloo, Ontario (Code 3530) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released May 29, 2012. http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E (accessed June 20, 2012).

Table 2: Place of Work Status, Industry, and Mode of Transportation to Work

Municipality	Place of Work Status		Industry		Mode of Transportation	
City of Cambridge	Worked at Home:	3,340	Agriculture and Other Resource Based Industries:	855	Car, Truck, Van as Driver:	49,405
	Worked Outside Canada:	210	Construction:	4,300	Car, Truck, Van as Passenger:	5,975
	No Fixed Workplace Address:	5,010	Manufacturing:	17,900	Public Transit:	2,195
	Worked at Usual Place:	55,545	Wholesale Trade:	3,855	Walked or Bicycled:	2,580
			Retail Trade:	7,800	All Other Modes:	400
			Finance and Real Estate:	3,360		

Municipality	Place of Work Status		Industry		Mode of Transportation	
			Health Care and Social Services:	5,475		
			Educational Services:	2,935		
			Business Services:	10,900		
			Other:	9,835		
Township of North Dumfries	Worked at Home:	435	Agriculture and Other Resource Based Industries:	195	Car, Truck, Van as Driver:	4,195
	Worked Outside Canada:	25	Construction:	415	Car, Truck, Van as Passenger:	285
	No Fixed Workplace Address:	410	Manufacturing:	1,080	Public Transit:	15
	Worked at Usual Place:	4,345	Wholesale Trade:	295	Walked or Bicycled:	205
			Retail Trade:	545	All Other Modes:	55
			Finance and Real Estate:	310		
			Health Care and Social Services:	440		
			Educational Services:	385		
			Business Services:	915		
			Other:	795		
Region of Waterloo	Worked at Home:	15,875	Agriculture and Other Resource Based Industries:	5,190	Car, Truck, Van as Driver:	189,495
	Worked Outside Canada:	910	Construction:	16,595	Car, Truck, Van as Passenger:	22,415
	No Fixed Workplace Address:	20,860	Manufacturing:	60,375	Public Transit:	10,965
	Worked at Usual Place:	220,010	Wholesale Trade:	13,900	Walked or Bicycled:	16,075
			Retail Trade:	29,450	All Other Modes:	1,920
			Finance and Real Estate:	19,240		
			Health Care and Social Services:	21,845		
			Educational Services:	20,515		
			Business Services:	44,485		
			Other:	37,665		

Source: Statistics Canada. 2007. Cambridge, Ontario (Code3530010) (table). 2006 Community Profiles. 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E (accessed June 20, 2012).
Source: Statistics Canada. 2007. North Dumfries, Ontario (Code3530004) (table). 2006 Community Profiles. 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E (accessed June 20, 2012).
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2.2 POLICY CONTEXT

2.2.1 Provincial

The *Growth Plan for the Greater Golden Horseshoe* (Growth Plan) was released by the Ministry of Public Infrastructure Renewal in June 2006. This document provides policies for managing growth and urban sprawl and building complete communities in the Greater Golden Horseshoe (GGH) to 2031. The Growth Plan specifies density and intensification targets that must be met by GGH municipalities but also includes policies for infrastructure planning such as the development of new transportation corridors in order to support growth. The Region of Waterloo and the City of Cambridge have prepared their new Official Plans in conformity to the Growth Plan. The Region is in the process of reviewing the first draft of the Township of North Dumfries Official Plan.

The *Greenbelt Act and Plan* came into effect in December 2004. The *Greenbelt Plan* includes 800,000 acres of land protected by the *Niagara Escarpment Plan* and the *Oak Ridges Moraine Conservation* Plan. The *Greenbelt Plan* identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological features and functions occurring on this landscape. The *Greenbelt Plan* is a cornerstone of the *Growth Plan for the Greater Golden Horseshoe.* The southern tip of the study area is located within the area governed by the *Greenbelt Plan*. For a map of the area, please visit http://www.mah.gov.on.ca/Asset4326.aspx. The study area is not located within areas governed by the *Oak Ridges Moraine Conservation Plan* or the *Niagara Escarpment Plan*.

2.2.2 Municipal

Regional Municipality of Waterloo
The 2010 Regional Official Plan combines the broad policy and regulatory framework established by the Province of Ontario with the community planning goals, objectives and policies developed by the Region and the seven area municipalities to ensure Waterloo Region is a sustainable and livable community. All future land-use development, transportation and infrastructure within Waterloo Region must conform to the policies, goals and objectives of the Regional Official Plan. As of January 2011, the Regional Official Plan in its entirety, is under appeal before the Ontario Municipal Board (OMB). As such, both the 2006 and 2010 Regional Official Plans are referenced in this *Overview of Existing and Planned Land Uses Report.*

City of Cambridge
The City has been updating the 1999 Official Plan to ensure it reflects the City's full potential in matters related to planning and conforms with the revised provincial and regional policies and plans. On May 7, 2012, Cambridge City Council adopted the 2012 Official Plan for the Corporation of the City of Cambridge, in accordance with Section 17(23) of the Planning Act, R.S.O., 1990, c.P. 13, as amended. Although the Official Plan has been adopted by City Council, it still requires approval from the Regional Municipality of Waterloo. The Regional Municipality of Waterloo may approve, modify, and approve or refuse to approve all or part of the City of Cambridge Official Plan. As such, both the 1999 and 2012 Official Plans are referenced in this *Overview of Existing and Planned Land Uses Report.*

Township of North Dumfries

The Township of North Dumfries Official Plan sets out the land use policy directions for long-term growth and development in the municipality. The Official Plan for the Township of North Dumfries was updated in 2008. This document works in connection to the Provincial Policies Statements and the Regional Official Plan policies.

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3.0 LAND USE

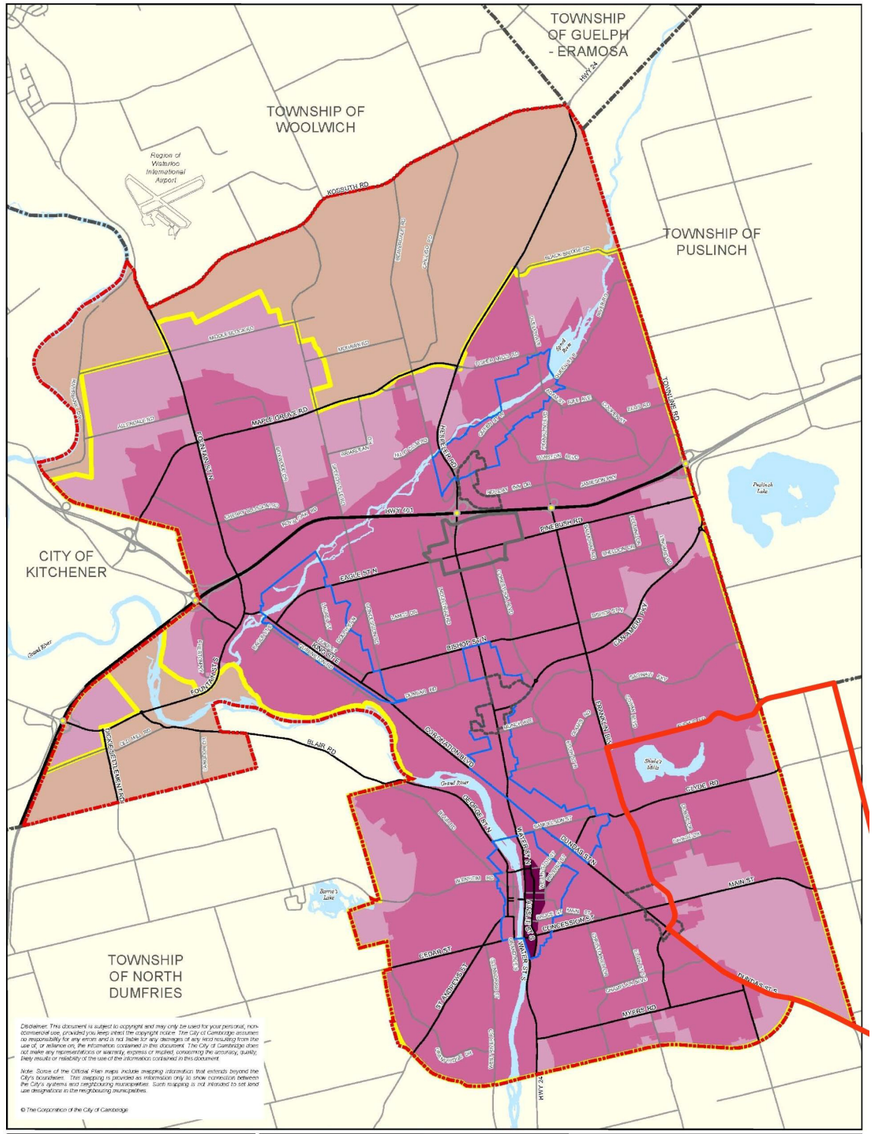
Based on the 2012 City of Cambridge Official Plan, the portion of the study area within the City of Cambridge is a mix of built-up area and designated greenfield area (refer to **Figure 2**). The general land uses within these areas are shown in **Figure 3.** Between Avenue Road/Gore Road and Clyde Road/Regional Road 27, the land surrounding Shade's Mill Conservation Area is natural open space, with low / medium density residential on the periphery. Between Clyde Road/Regional Road 27 and Main Street East/Old Beverly Road/Regional Road 97, the majority of the lands are industrial. Towards the eastern boundary of this quadrant, an area is designated as future urban reserve, and this is separated from the industrial lands by pockets of natural open space system and recreation, cemetery and open space. A small pocket of low / medium density residential is present in southeast edge of this quadrant. Between Main Street East/Old Beverly Road/Regional Road 97 and Dundas Street South/Highway 8, the lands are a mix of low / medium residential and natural open space system. There are two small pockets of high density residential abutting Dundas Street South/Highway 8 and one pocket of future urban reserve long the eastern City of Cambridge boundary.

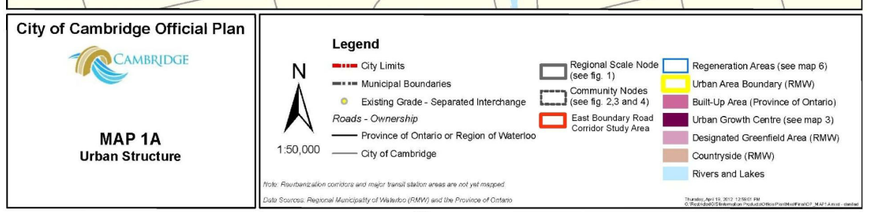
The 1999 City of Cambridge Official Plan classifies the portion of the study area within the City of Cambridge as city urban area. The general land uses identified in the 1999 City of Cambridge Official Plan (refer to **Figure 4**) are generally the same as those identified in the 2012 City of Cambridge Official Plan except:

- The industrial lands between Clyde Road/Regional Road 27 and Main Street East/Old Beverly Road/Regional Road 71 extend to Franklin Boulevard/Regional Road 36;
- The future urban reserve lands located south of Clyde Road/Regional Road 27 are split into Class 1 (prime) agricultural and major recreation open space;
- The natural open space system and recreational, cemetery and open space lands located between Clyde Road/Regional Road 27 and Main Street East/Old Beverly Road/Regional Road 97 are combined and identified as significant natural features;
- The two small pockets of high density residential abutting Dundas Street South/Highway 8 south of Main Street East/Old Beverly Road/Regional Road 97 are simply classified as urban residential; and
- The future urban reserve lands located south of Main Street East/Old Beverly Road/Regional Road 97 is identified as Class 2 industrial.

The portion of the study area within the Township of North Dumfries is mainly rural area / agricultural. There is a small pocket of rural area / open space on the west side of Shellard Side Road north of Morrison Road (refer to **Figure 5**).

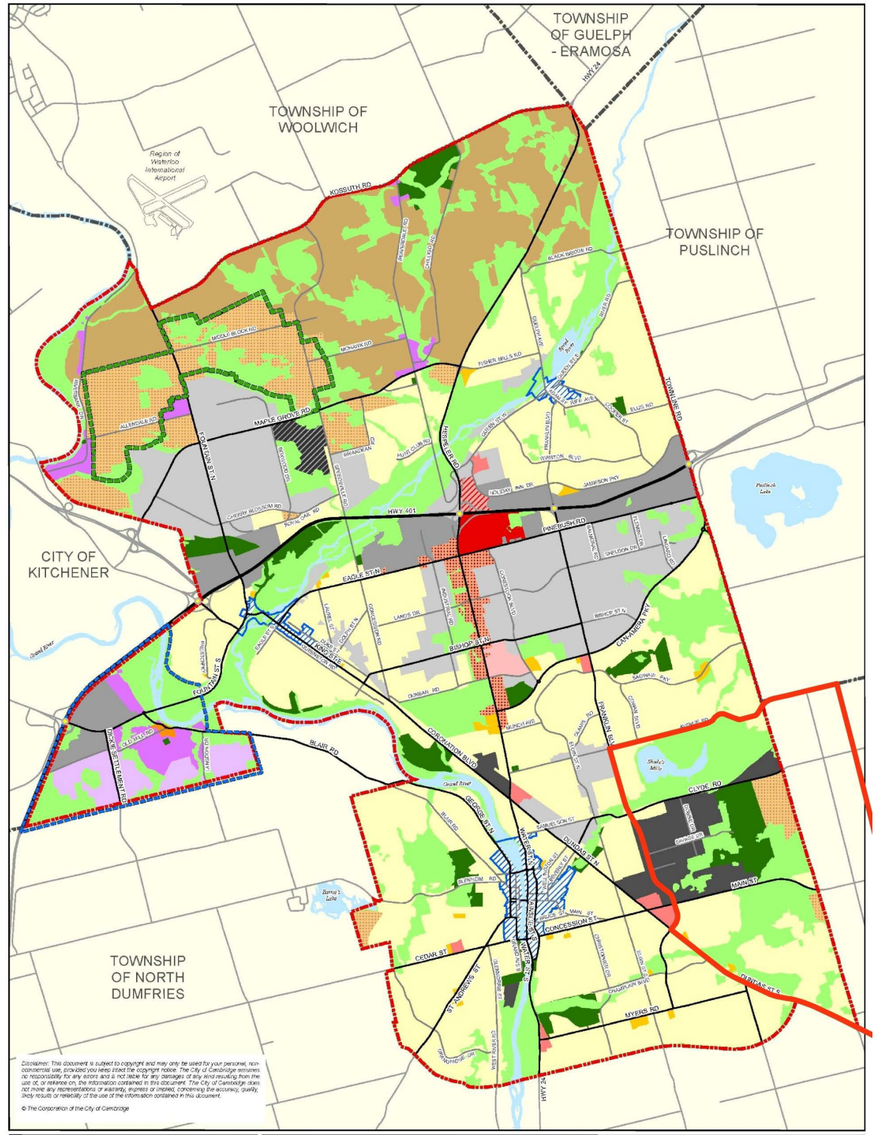
Figure 2: City of Cambridge 2012 Official Plan Urban Structure

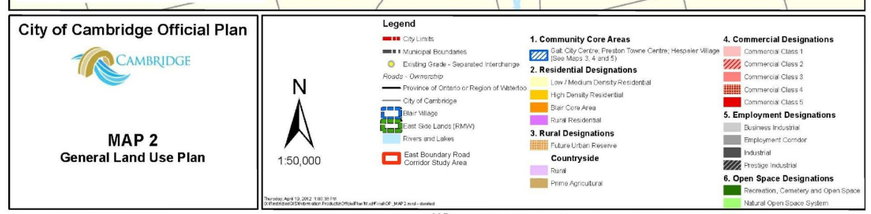




Source: http://www.cambridge.ca/relatedDocs/OfficialPlan7May2012.pdf

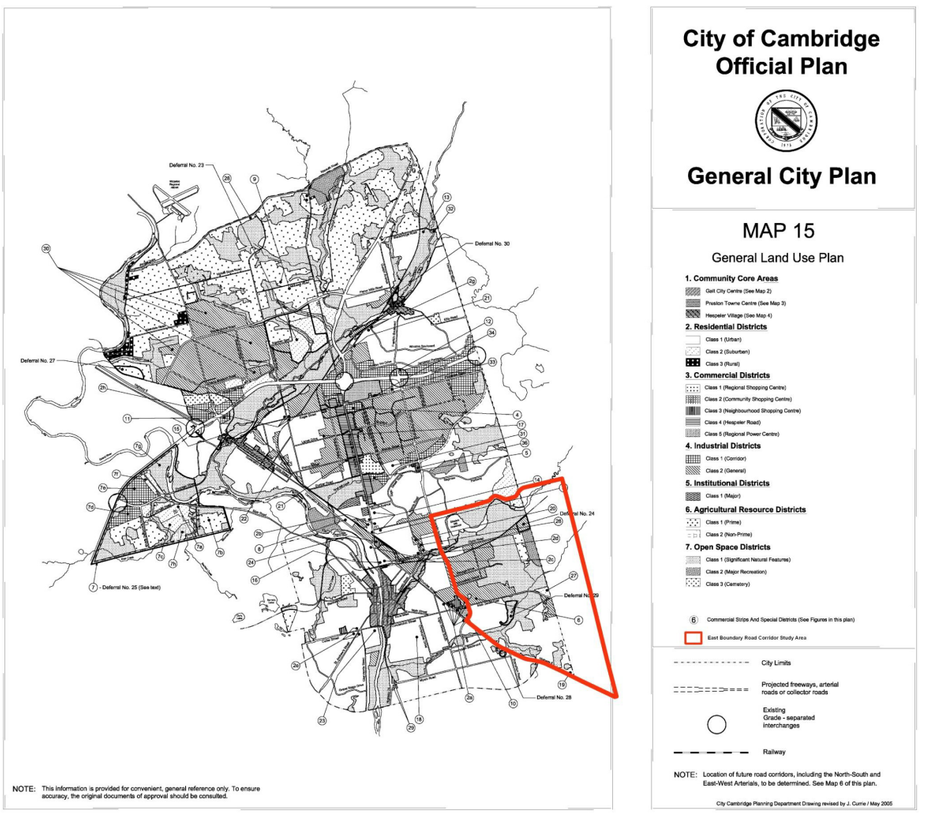
Figure 3: City of Cambridge 2012 Official Plan General Land Use Plan





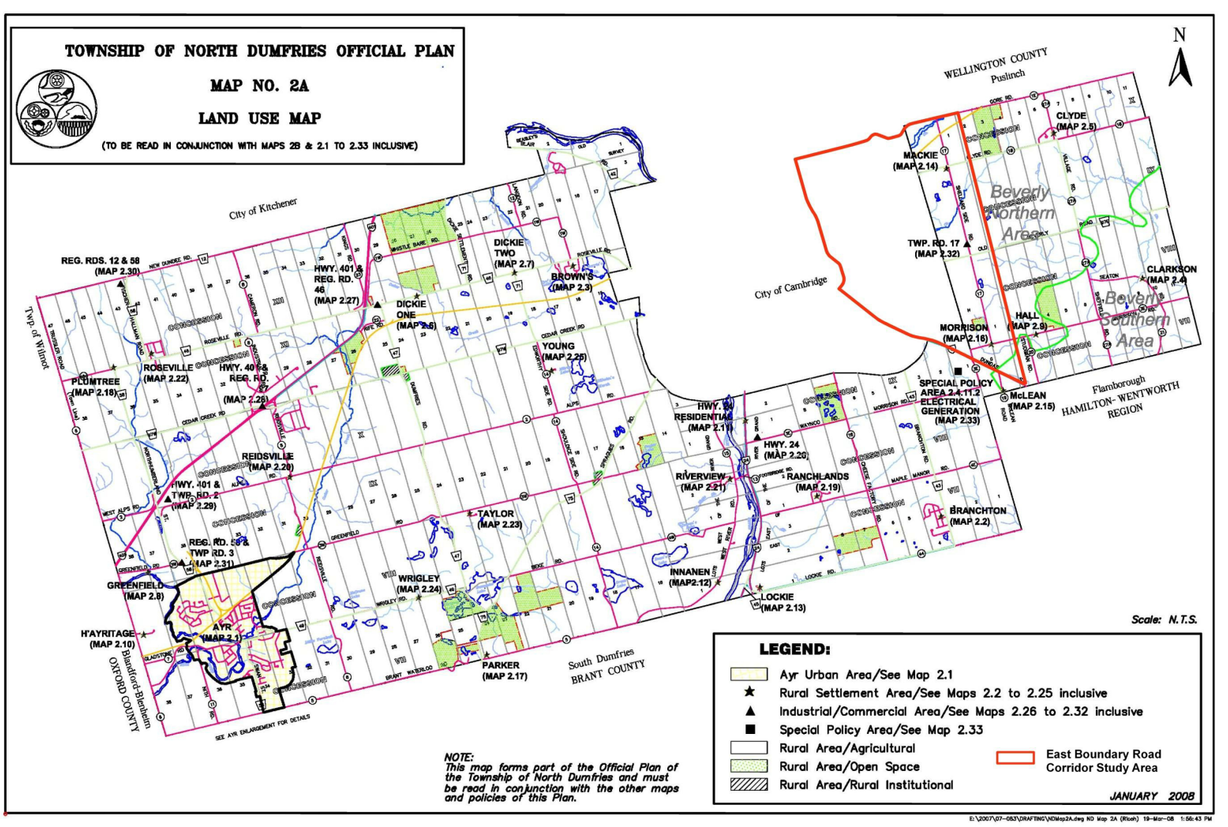
Source: http://www.cambridge.ca/relatedDocs/OfficialPlan7May2012.pdf

Figure 4: City of Cambridge 1999 Official Plan General Land Use Plan



Source: http://www.cambridge.ca/officialplan

Figure 5: Township of North Dumfries 2008 Official Plan Land Use Map



Source: http://www.ksmart.on.ca/Planning/northdumfries_official_plan.htm

3.1 AGRICULTURAL

Within the portion of the study area designated as rural area / agricultural, the majority of the lands are designated as Class 4 soils (refer to **Figure 6**). Class 4 soils have severe limitations that restrict the range of crops or require special conservation practices, or both. The limitations seriously affect one or more of the following practices: timing and ease of tillage, planting and harvesting, choice of crops, and methods of conservation. The soils are low to fair in productivity for a fair range of crops but may have high productivity for a specially adapted crop. There are also fairly small pockets of Class 1 soils (in the vicinity of Vanier Drive), Class 2 soils (in the vicinity of Shellard Side Road and Main Street East/Old Beverly Road/Regional Road 97, and also south of Avenue Road/Gore Road at Townline Road/Regional Road 33), Class 3 soils (at the eastern boundary of the study area north of Morrison Road), Class 5 soils (in the vicinity of the eastern boundary of the study area and Morrison Road), Class 6 soils (along Shellard Side Road north of Morrison Road), and organic soils (generally abutting the major watercourses). Descriptions of these soils classes are below:

Class 1
Soils in this class have no significant limitations in use for crops. The soils are deep, are well to imperfectly drained, hold moisture well, and in the virgin state were well supplied with plant nutrients. They can be managed and cropped without difficulty. Under good management, they are moderately high to high in productivity for a wide range of crops.

Class 2
Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices. The soils are deep and hold moisture well. The limitations are moderate and the soils can be managed and cropped with little difficulty. Under good management, they are moderately high to high in productivity for a fairly wide range of crops.

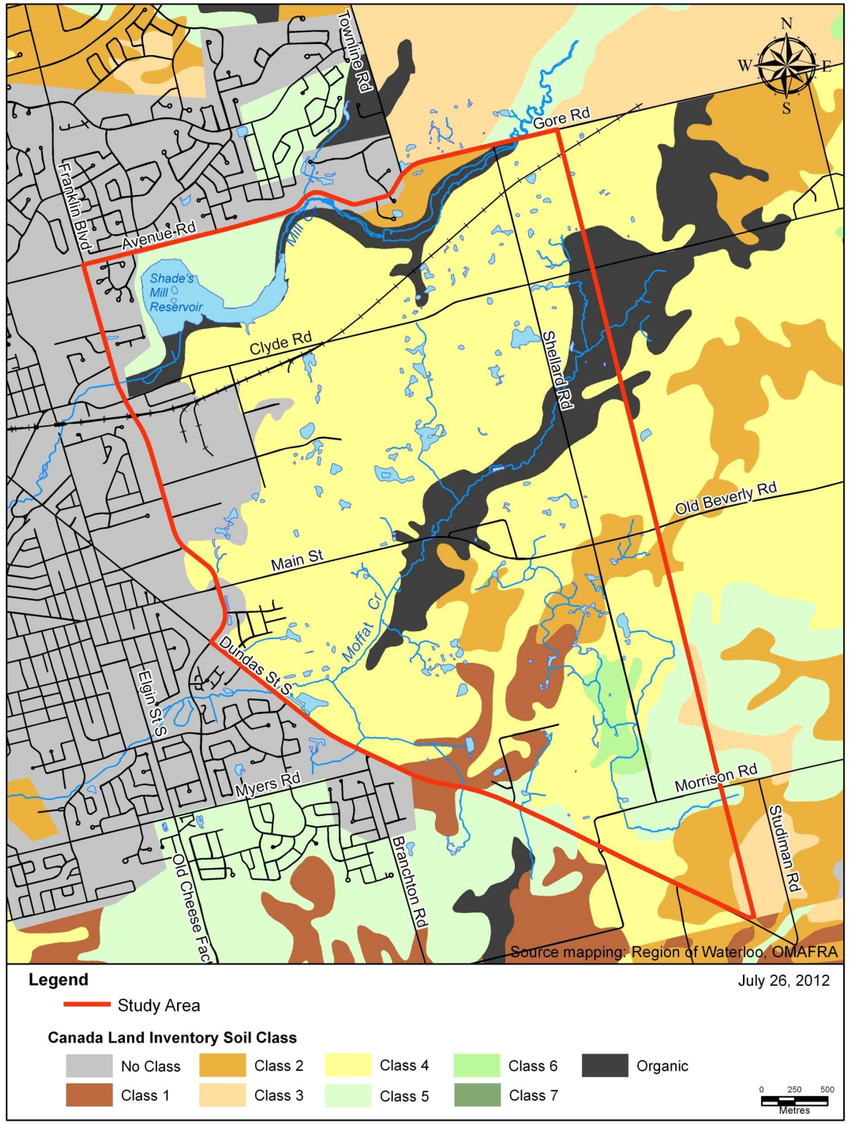
Class 3
Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices. The limitations are more severe than for Class 2 soils. They affect one or more of the following practices: timing and ease of tillage, planting and harvesting, choice of crops, and methods of conservation. Under good management, they are fair to moderately high in productivity for a fair range of crops.

Class 5
Soils in this class have very severe limitations that restrict their capability of producing perennial forage crops and improvement practices are feasible. The limitations are so severe that the soils are not capable of use for sustained production of annual field crops. The soils are capable of producing native or tame species of perennial forage plants, and may be improved by the use of farm machinery. Improvement practices may include cleaning of brush, cultivation, seeding, fertilizer, or water control.

Class 6
Soils in this class are only capable of producing perennial forage crops and improvement practices are not feasible. The soils provide some sustained grazing for farm animals, but the limitations are so severe that improvement by use of farm machinery is impractical. The terrain may be unsuitable for use of farm machinery, or the soils may not respond to improvement, or the grazing season may be very short.

Organic
Organic soils are not categorized in capability classes.

Figure 6: Historical Soil Classes Within the Study Area



Based on the Agricultural Community Profiles from the 2011 Statistics Canada Census, the City of Cambridge and Township of North Dumfries have a combined total of 145 farms with 215 operators, and the total combined gross farm receipts (excluding forest products sold) was $70,237,066. **Table 3** breaks down this information by municipality and summarizes the industry groups, tillage practices and operating arrangements of the farms.

Table 3: Place of Work Status, Industry, and Mode of Transportation to Work

Municipality	Total # of Farms, Operators, Gross Farm Receipts	Industry Groups	Tillage Practices	Operating Arrangements
City of Cambridge	21 farms 35 operators $3,517,675 in gross farm receipts	Cattle ranching and farming (4) Hog and pig farming (0) Poultry and egg production (0) Sheep and goat farming (1) Other animal production (2) Oilseed and grain farming (6) Vegetable and melon farming (3) Fruit and tree nut farming (0) Greenhouse, nursery and floriculture production (2) Other crop farming (3)	19 of the 21 farms reported: No-till seeding or zero-till seeding (9) Tillage retaining most crop residue on the surface (5) Tillage incorporating most crop residue into soil (5)	Sole proprietorship (11) Partnership without an agreement (6) Partnership with an agreement (1) Family corporation (2) Non-family corporation (1)
Township of North Dumfries	124 farms 180 operators $66,719,391 in gross	Cattle ranching and farming (24) Hog and pig farming (2) Poultry and egg	114 of the 124 farms reported: No-till seeding or zero-till seeding (40) Tillage retaining most	Sole proprietorship (59) Partnership without an agreement (21) Partnership with an

Municipality	Total # of Farms, Operators, Gross Farm Receipts	Industry Groups	Tillage Practices	Operating Arrangements
	farm receipts	production (8) Sheep and goat farming (3) Other animal production (23) Oilseed and grain farming (42) Vegetable and melon farming (2) Fruit and tree nut farming (2) Greenhouse, nursery and floriculture production (5) Other crop farming (13)	crop residue on the surface (43) Tillage incorporating most crop residue into soil (31)	agreement (2) Family corporation (39) Non-family corporation (3)

Source: Statistics Canada, 2011 Census of Agriculture, Farm and Farm Operator Data, catalogue no. 95-640-XWE
Source: Statistics Canada, 2011 Census of Agriculture, Farm and Farm Operator Data, catalogue no. 95-640-XWE.

3.2 RESIDENTIAL

Based on the 2012 City of Cambridge Official Plan, two pockets of high density residential are present within the study area: in the vicinity of Maple Bush Drive off of Dundas Street South/Highway 8, and in the Little Corners area where Branchton Road connects to Dundas Street South/Highway 8. The remaining residential areas of low / medium density residential are located on the periphery of Shade's Mill Conservation Area, and in the area bounded by Main Street East/Old Beverly Road/Regional Road 97, Dundas Street South/Highway 8, and the study area's eastern boundary.

3.3 COMMERCIAL / INDUSTRIAL

Industrial lands are concentrated generally between Clyde Road/Regional Road 27 and Main Street East/Old Beverly Road/Regional Road 97. Notable businesses include:

- Combined Metal Industries – south of the CP Rail tracks west of Dobbie Drive;
- Cambridge Towel Corporation – south of the CP Rail tracks west of Dobbie Drive;
- Cambridge Brass – Orion Place east of Dobbie Drive;
- Delft Blue Inc. – Dobbie Drive south of Orion Place;

- Applied Automation Canada – Clyde Road/Regional Road 27 west of Shellard Side Road;
- Tigercat Industries – Savage Drive west of Dobbie Drive;
- Galt Display Rack Company Limited – Savage Drive east of Dobbie Drive;
- NutraBlend Foods – Savage Drive near its eastern termination point;
- Grand Valley Fortifiers – Savage Drive near its eastern termination point;
- Grober Inc. – Savage Drive near its eastern termination point;
- Barrday – Moorefield Street at Franklin Boulevard/Regional Road 36;
- Custom Aluminum Foundry – at the base of Dobbie Drive; and
- Imaging & Sensing Technology Canada – at the base of Dobbie Drive.

A small commercial pocket is present at the intersection of Franklin Boulevard/Regional Road 36 and Main Street East/Old Beverly Road/Regional Road 97. The most notable business east of Franklin Boulevard/Regional Road 36 is Cambridge Source for Sports.

The 2012 City of Cambridge Official Plan highlights one provincially identified former waste disposal site within the study area, located south of Clyde Road/Regional Road 27 and east of the termination of Savage Drive (refer to **Figure 7**). The area is currently a waste transfer site.

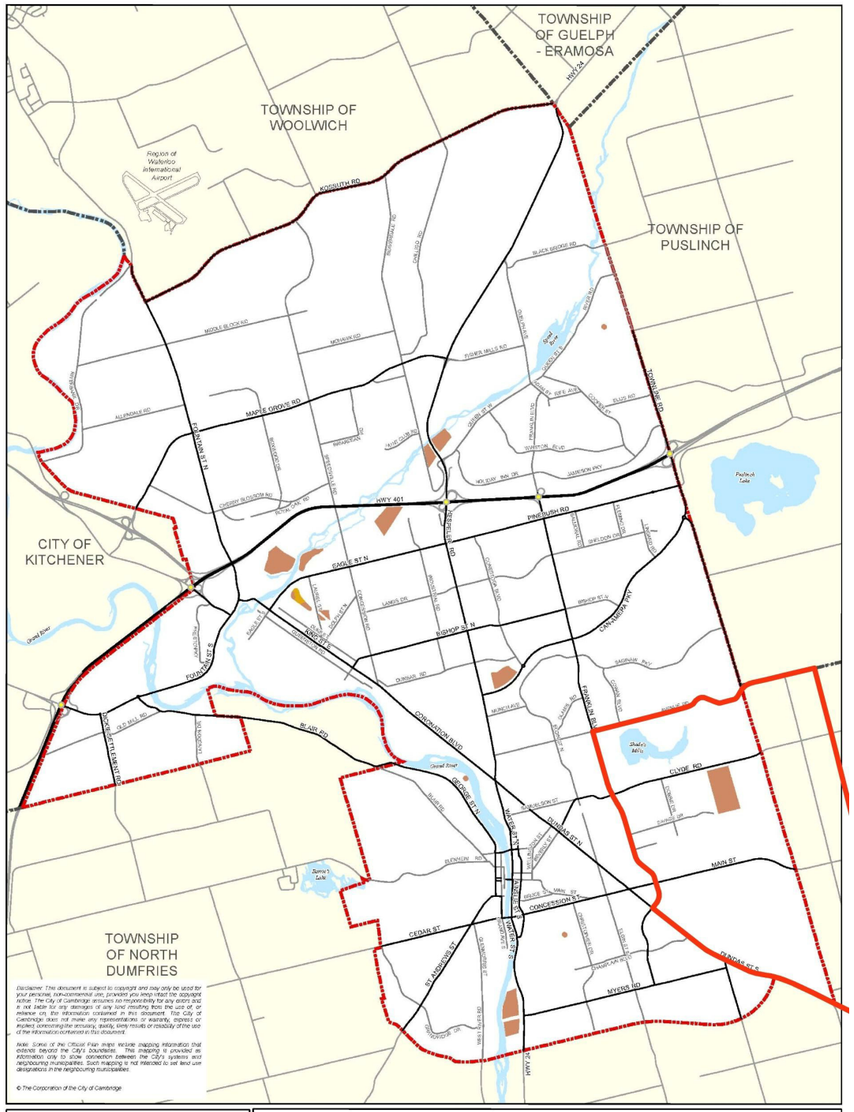
3.4 COMMUNITY / RECREATIONAL / INSTITUTIONAL

The most notable community and recreational feature within the study area is Shade's Mill Conservation Area, located between Avenue Road/Gore Road and Clyde Road/Regional Road 27 (refer to **Figure 8**). Shade's Mill Conservation Area is managed by the Grand River Conservation Authority and hosts activities such as:

- Swimming – buoyed swimming area adjacent to a beach;
- Fishing and ice fishing – in Shade's Mill reservoir. Summer species include small and largemouth bass, northern pike, yellow perch, black crappie, brown bullheads and sunfish. Winter species include northern pike, yellow perch, black crappie, and sunfish. A catch and release program is in effect;
- Canoeing and boating – a boat launch is present and canoes are available for rent. Gas motors are prohibited, but electric trawlers may be used;
- Hiking - 12 km of hiking trails through a mature hardwood forest that winds along Mill Creek;
- Cycling. Trails include the Plantation Trail, Toyota Way Trail, Deer Run Trail, Red Pine Trail, and Snowshoe Trail;
- Picnicking - three large pavilions are available for rent, and there are also plenty of picnic tables throughout the park on a first come first serve basis;
- Disc golf – 9-hole disc golf course. Equipment is available for rent at the gatehouse; and
- Cross country skiing and snowshoeing – 8 km of groomed ski trails which form loops throughout the park and cater to all skill levels, and 2.2 km of snowshoe trails. There is a heated chalet and ski rentals are available.

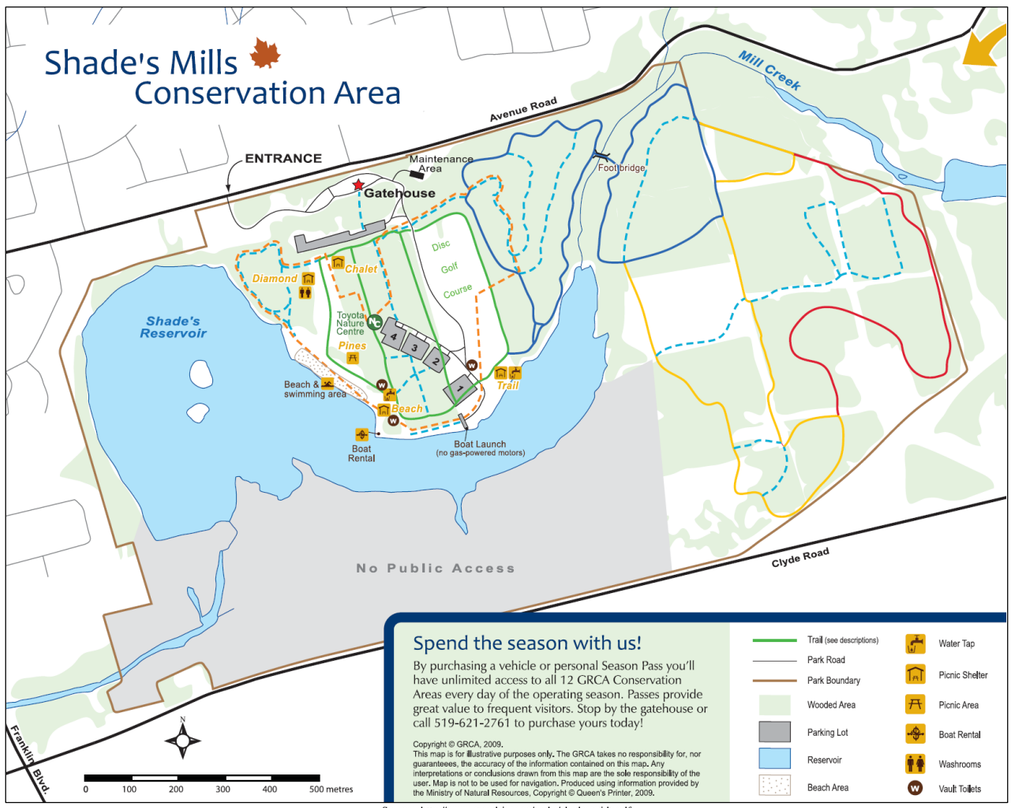
There are currently no existing regional cycling routes within the study area, however there are two City of Cambridge bike lanes in service: along Avenue Road/Gore Road from Franklin Boulevard/Regional Road 36 to Chimney Hill Drive, and along Maple Bush Drive east of Dundas Street South/Highway 8. Both the Region of Waterloo (2010 Official Plan) and the City of Cambridge (2012 Official Plan) have cycling routes and paved shoulder treatments planned within the study area (refer to **Figure 9 and Figure 10**).

Figure 7: Provincially Identified Former Waste Disposal Sites



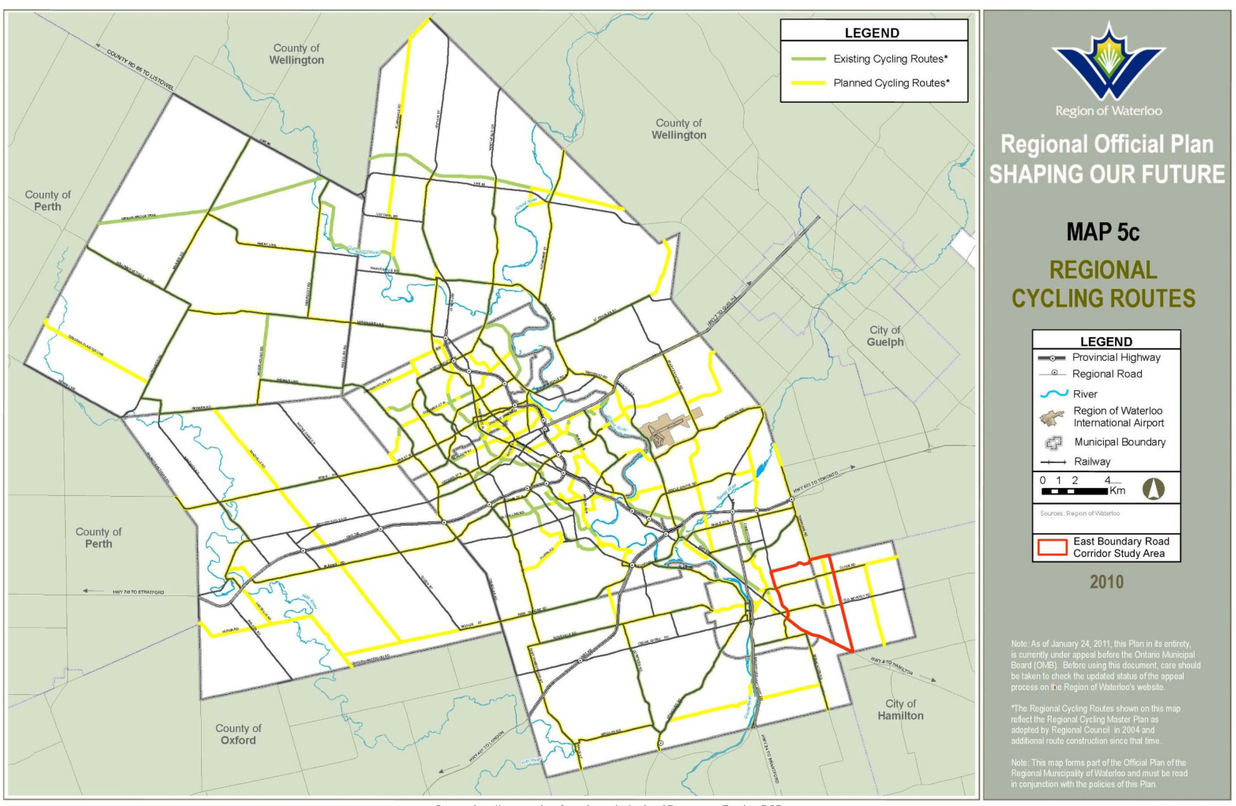
Source: http://www.cambridge.ca/relatedDocs/Appendix%207%20Revised%20OPsmall.pdf

Figure 8: Guide to Shade's Mill Conservation Area



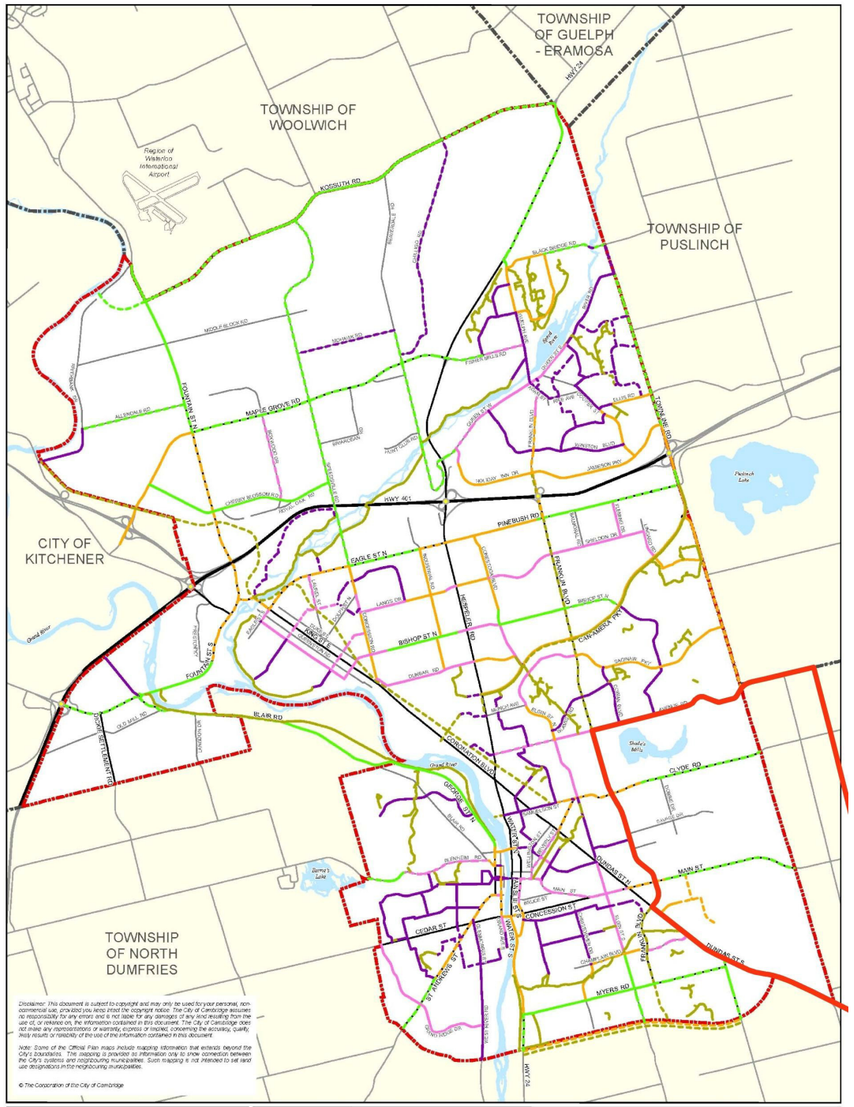
Source: http://www.grandriver.ca/parks/shadesguide.pdf

Figure 9: Region of Waterloo 2010 Official Plan Cycling Routes



Source: http://www.regionofwaterloo.ca/en/regionalGovernment/PreviousROP.asp

Figure 10: City of Cambridge 2012 Official Plan Cycling Routes



Source: http://www.cambridge.ca/relatedDocs/2004%20OP%20Consolidation%20incl%20fig%20&%20maps.pdf

The City of Cambridge 2012 Official Plan indicates potential new trails within the study area (refer to **Figure 11**). One trail starts at Franklin Boulevard/Regional Road 36 just south of Avenue Road/Gore Road, then arcs around the south end of Shade's Mills Conservation Area and continues northerly along Townline Road. Another trail connects to this one near its mid-point just north of Clyde Road/Regional Road 27 and travels southerly past Main Street East/Old Beverly Road/Regional Road 97 and then curves westerly to connect to Dundas Street South/Highway 8.

3.5 SITE SPECIFIC POLICIES

3.5.1 City of Cambridge 2012 Official Plan Site Specific Policies

Within the study area, the City of Cambridge 2012 Official Plan identifies eight areas with site specific policies (refer to **Figure 12**). The following summarizes the site specific policies for each area:

Site 10 – North side of Main Street East/Old Beverly Road/Regional Road 97 of Franklin Boulevard/Regional Road 36

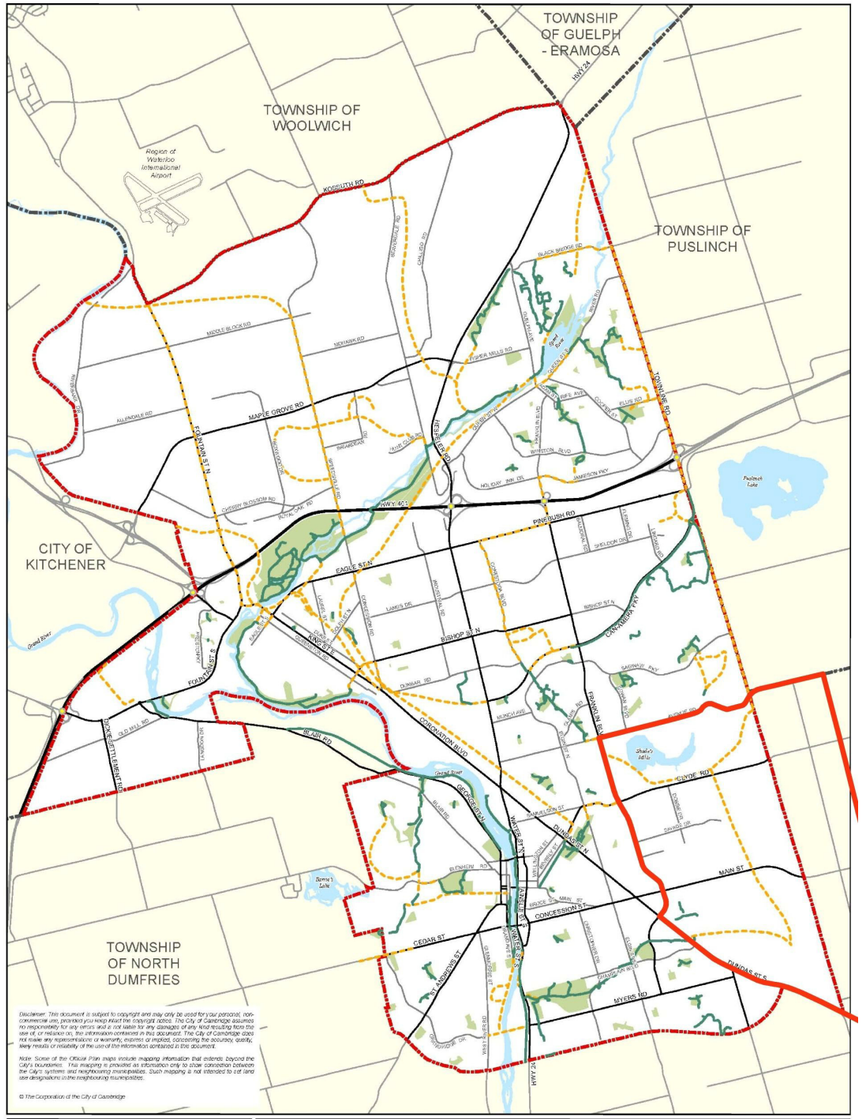
The lands designated as industrial may also be used for the following additional purposes: a) a banqueting hall; b) a commercial use contemplated in Section 8.6.2.4 for lands in a Class 4 Commercial designation, other than a retail commercial use, a business or professional office or, except as provided in Policy 8.6.3.5.1, an automobile service station. Council may pass by-laws to permit the subject lands to be used for such additional purposes without amending this plan; provided that the use is located within a maximum depth of 75 metres from the street line of Main Street East/Old Beverly Road/Regional Road 97 and that all of the provisions of Section 8.6.2.4 shall apply to the development and use of such lands for such purposes.

This area is also identified in the City of Cambridge 1999 Official Plan as the East Main Street Special District (refer to **Figure 13**). The lands designated in this area may also be used for the following additional purposes: a) a banqueting hall; b) a commercial use contemplated in Policy 13.3.5 for lands in a Class 4 Commercial District other than a retail commercial use, a business or professional office or, except as provided in Policy 13.3.7.3, an automobile service station; and, subject to the provisions of Section 2 of this plan, *Council* may pass by-laws to permit lands in the Special District to be used for such additional purposes without amending this plan; provided, however, that *Council* shall not in such by-laws provide for any lands greater in depth than 75 metres from the street line of East Main Street to be used for such purposes; and provided further that all of the provisions of Policy 13.3.5.3 shall apply to the *development* and use of such lands for such purposes.

Site 13 – Main Street East/Old Beverly Road/Regional Road 97 and Dundas Street South/Highway 8 Community Node

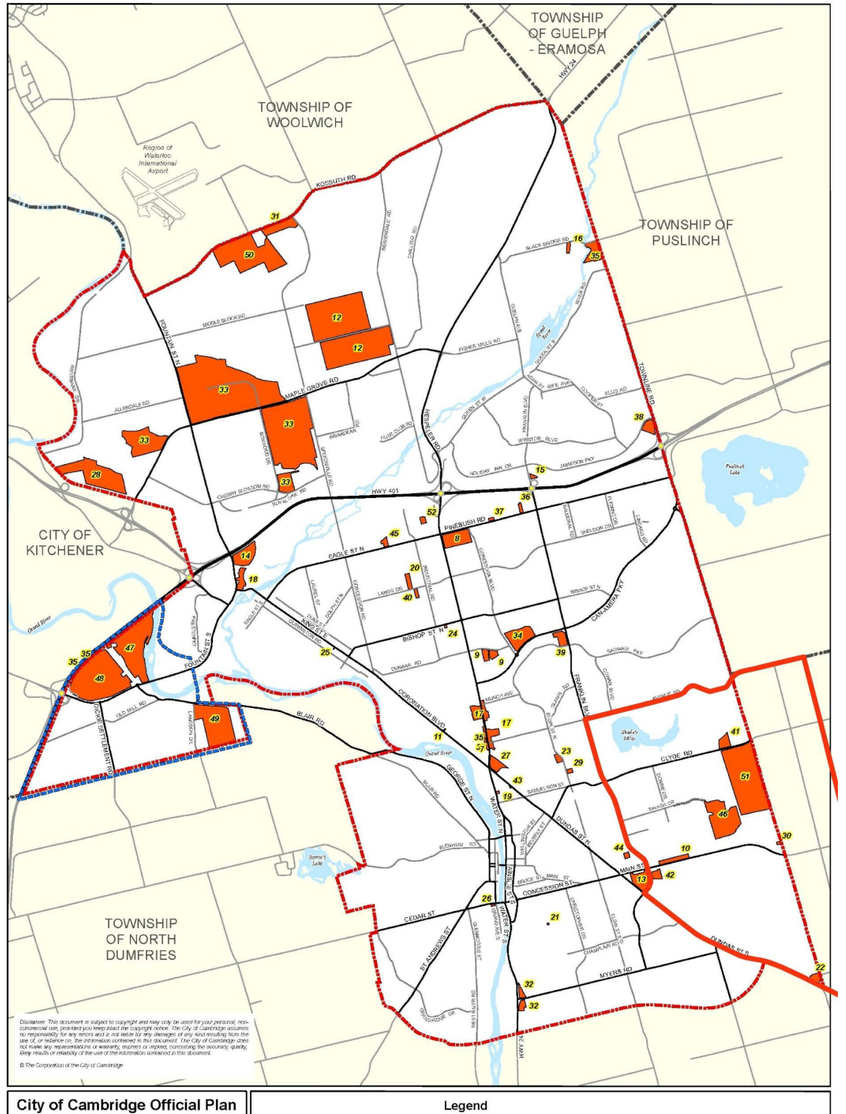
This Community Node (Policy 8.7.2.B) (refer to **Figure 14)** is characterized by existing low rise commercial plazas surrounded by established residential neighbourhoods. Industrial lands are situated to the north and east. Future development and redevelopment within the node will occur at a higher density with a focus on a mix of uses including the introduction of medium to high density housing. Large surface parking areas are discouraged especially adjacent to public roads. Pedestrian linkages and pedestrian scale development is encouraged. Future expansion of the Main Street and Dundas Street South Community Node will require an amendment to this Plan and may only be considered through a Secondary Plan study and a Comprehensive City-wide Commercial Policy Review.

Figure 11: City of Cambridge 2012 Official Plan Trail Network



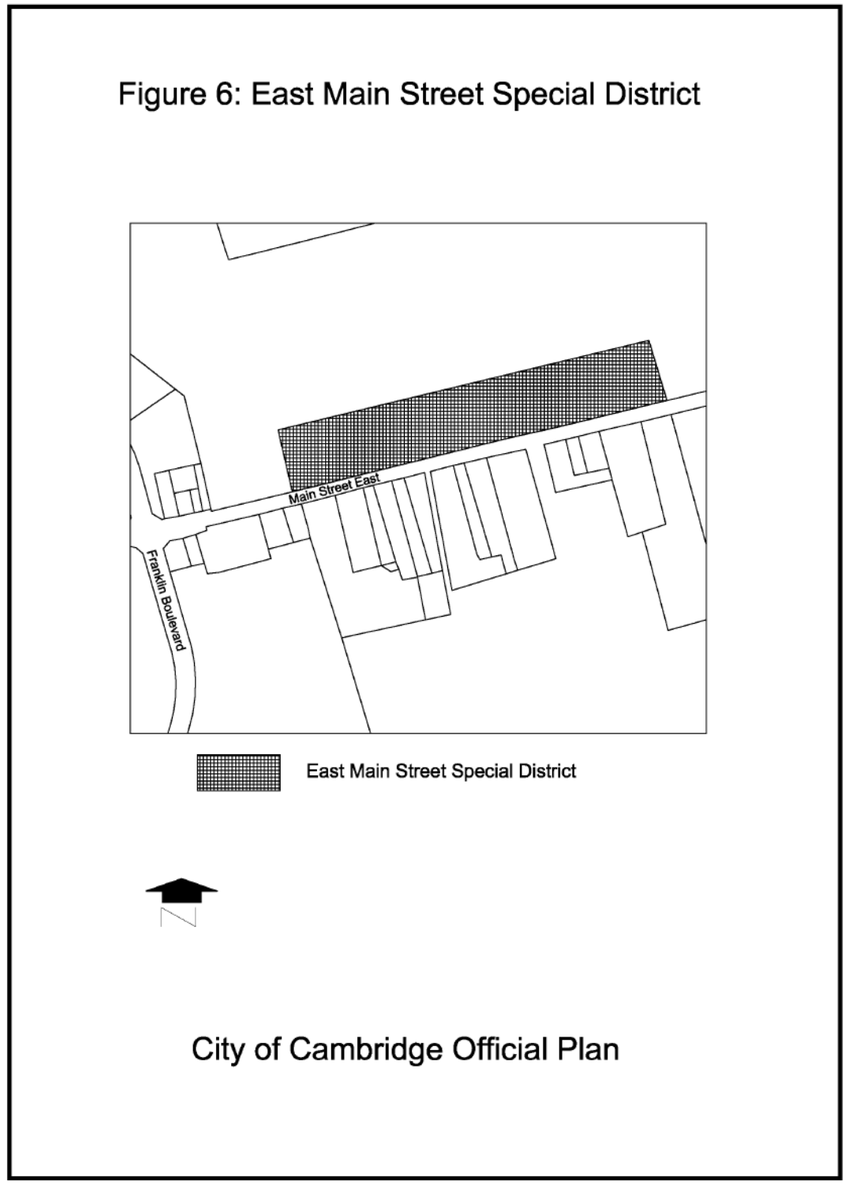
Source: http://www.cambridge.ca/relatedDocs/2004%20OP%20Consolidation%20incl%20fig%20&%20maps.pdf

Figure 12: City of Cambridge 2012 Official Plan Site Specific Policy Areas



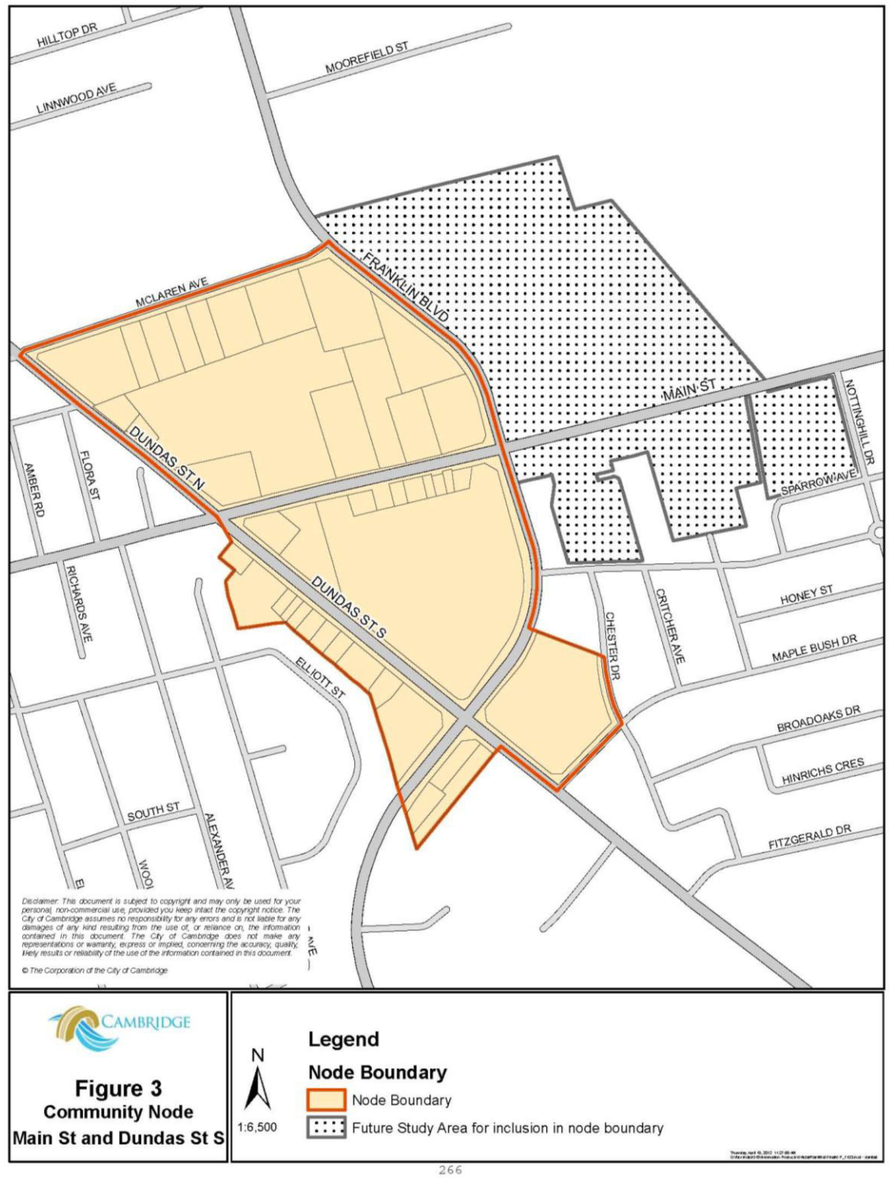
Source: http://www.cambridge.ca/officialplan

Figure 13: City of Cambridge 1999 Official Plan Site Specific Policy Area – East Main Street Special District



Source: http://www.cambridge.ca/officialplan

Figure 14: City of Cambridge 2012 Official Plan Site Specific Policy Area – Main Street South and Dundas Street South Community Node



Source: http://www.cambridge.ca/officialplan

Site 22 – Dundas Street South/Highway 8 at the City of Cambridge Southeast Boundary
The lands designated as low / medium density residential may also be used for a landscape-garden centre.

This area is also identified in the City of Cambridge 1999 Official Plan as the Dundas Street South Special District (refer to **Figure 15**). The lands designated in this area may also be used for a landscape-garden centre.

Site 30 – North of Main Street East/Old Beverly Road/Regional Road 97 Along the City of Cambridge Eastern Boundary
The site designated as low / medium density residential may also be used for business and professional offices.

This area is also identified in the City of Cambridge 1999 Official Plan as the Robinson Road Special District (refer to **Figure 16**). The lands designated in this area may also be used for business and professional offices.

Site 41 – North of Clyde Road/Regional Road 27 West of the City of Cambridge Eastern Boundary
The lands designated as industrial may be serviced by private sanitary services and may be used for a building materials yard for the storage of reclaimed and new building materials and general industrial uses that do not use water as part of the industrial process. Council may pass by-laws or otherwise facilitate or encourage the development of these lands for such additional uses without amending this Plan.

Site 42 – Southeast Quadrant of Main Street East/Old Beverly Road/Regional Road 97 and Franklin Boulevard/Regional Road 36
The lands on the north side of Green Gate Boulevard, east of Franklin Boulevard/Regional Road 36 designated as low / medium density residential may be developed and used for the purpose of multiple residential dwelling units to a maximum of net residential density of 150 dwelling units per hectare. The specific number of dwelling units and regulations applicable thereto may be further defined in the Zoning By-law and subject to the policies of this Plan. Council may pass by-laws or otherwise encourage the development and use of such lands for such purposes.

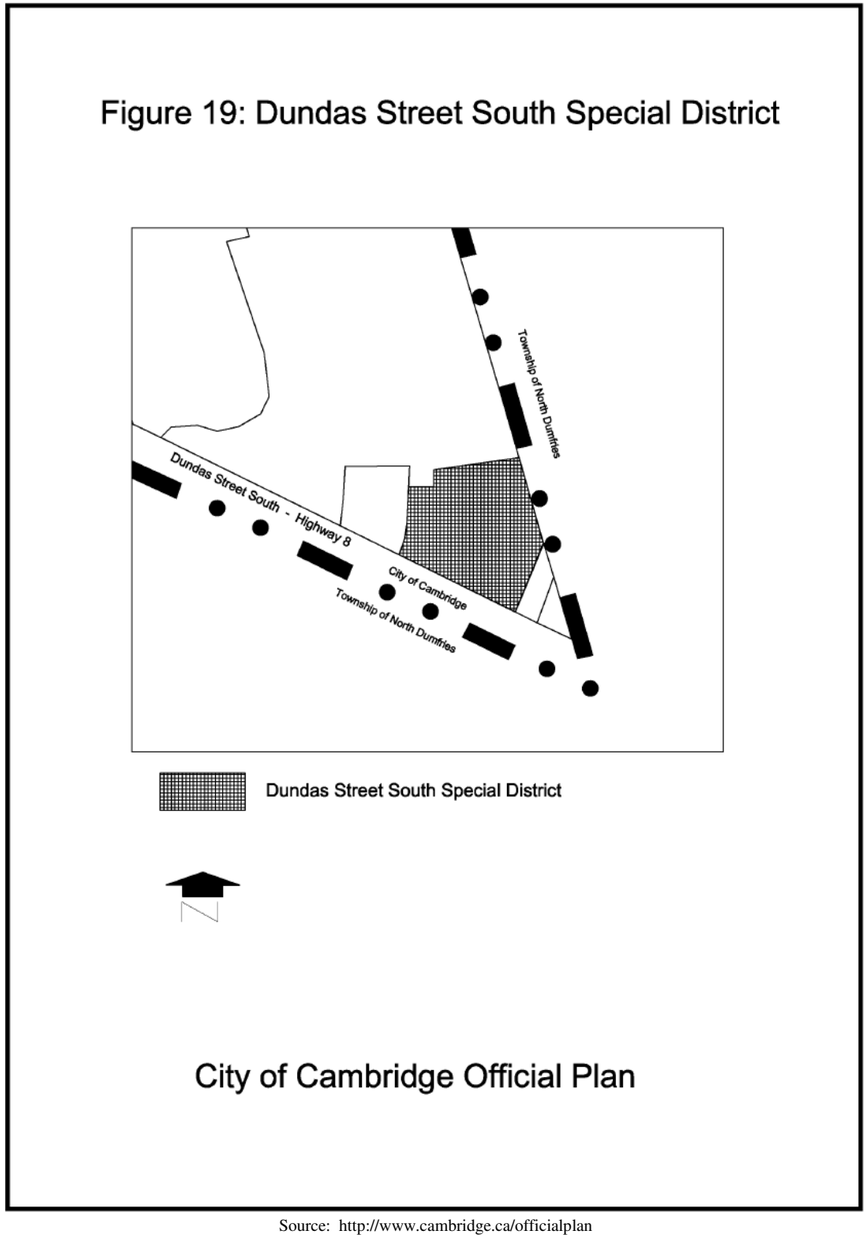
Site 46 – At the Easterly Termination of Savage Drive
The identified lands are a portion of the site of the former Regional landfill. Notwithstanding the permitted uses in this plan, these lands are permitted for use as a waste transfer station. Any future additional or alternative uses for this property will require an amendment to this plan.

Site 51 – South of Clyde Road/Regional Road 27 at the City of Cambridge Eastern Boundary
The lands designated as future urban reserve located at 975 Clyde Road/Regional Road 27 may also be used for those uses permitted in the recreation, cemetery and open space designation in accordance with Policy 8.8.4 of the plan. Also the lands designated future urban reserve located 935 and 855 Clyde Road/Regional Road 27, may also be used for those uses permitted in the prime agriculture designation in accordance with Policy 8.9.1.2.

3.5.2 Township of North Dumfries Site Specific Policies

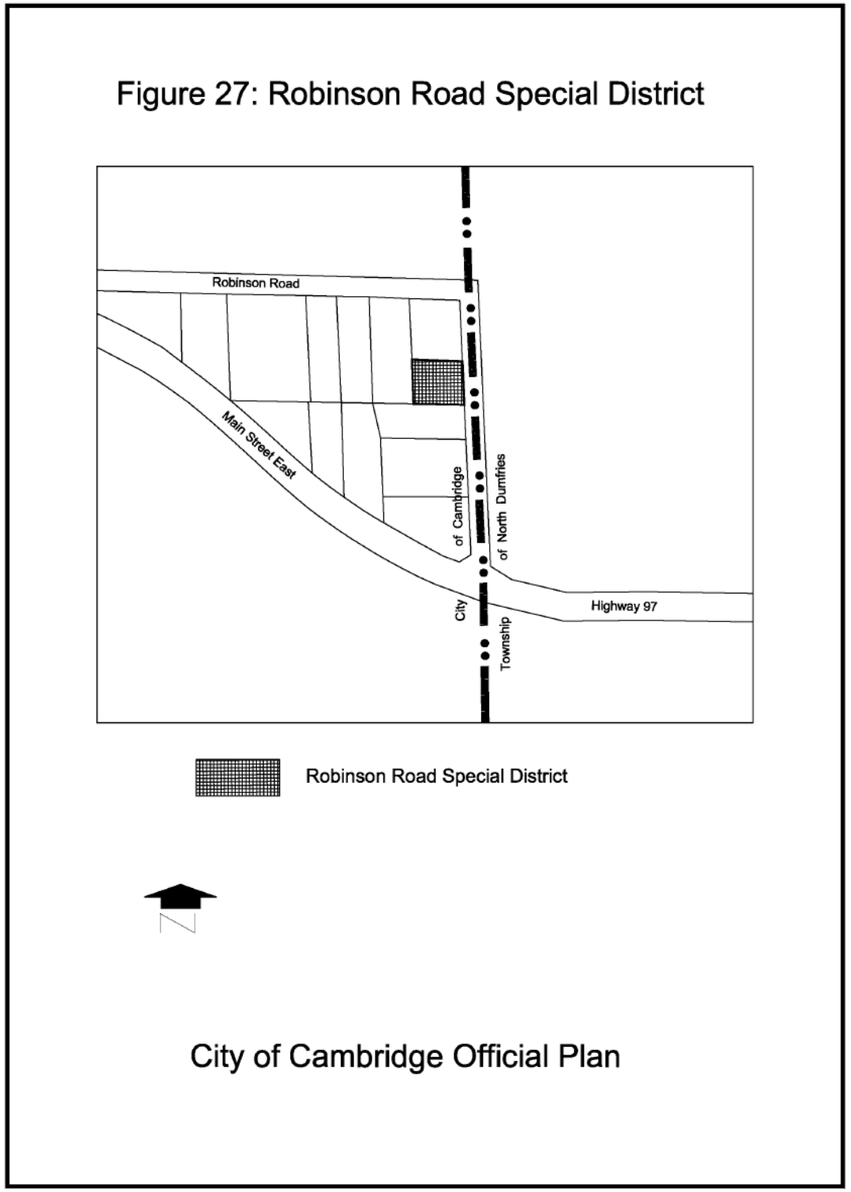
The Township of North Dumfries has forecasted growth in the rural settlement areas to 2016. In order to meet this projected residential growth, additional lands must be designated to accommodate additional housing units in accordance with the policies contained in Section 2.6 of the Official Plan. However, within the study area, there are two settlement areas that have specific policies which do not permit expansion. The first is the Mackie Settlement Area (refer to **Figure 17**).

Figure 15: City of Cambridge 1999 Official Plan Site Specific Policy Area – Dundas Street South Special District



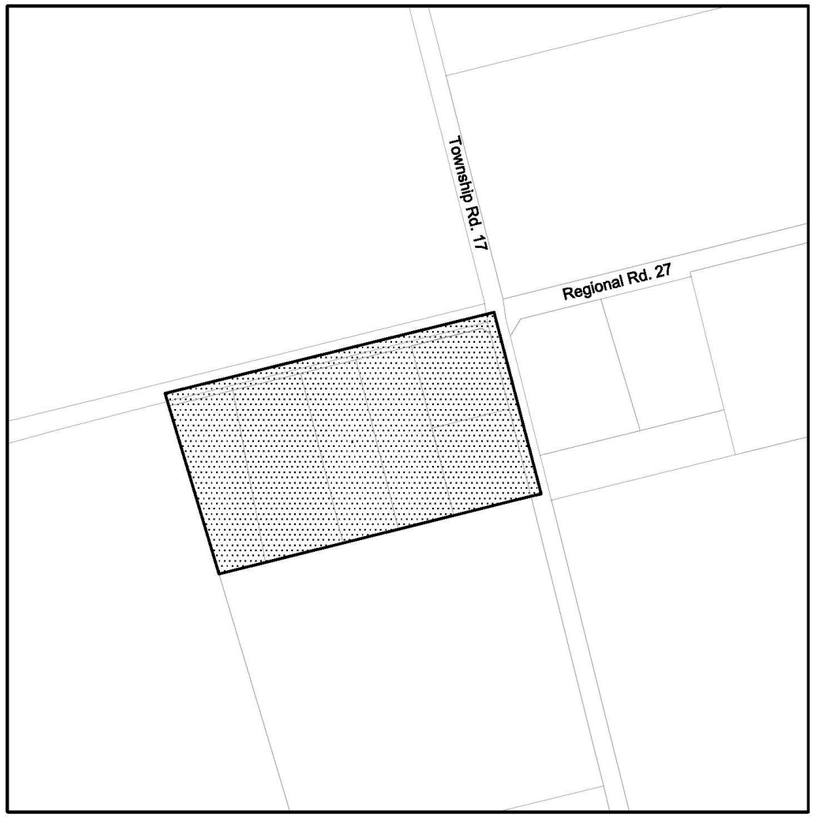
Source: http://www.cambridge.ca/officialplan

Figure 16: City of Cambridge 1999 Official Plan Site Specific Policy Area – Robinson Road Special District



Source: http://www.cambridge.ca/officialplan

Figure 17: Township of North Dumfries Mackie Settlement Area



Source: http://www.ksmart.on.ca/Planning/northdumfries_official_plan.htm

The Mackie Settlement Area is located in the southwest quadrant of Shellard Side Road and Clyde Road/Regional Road 27. The second is the Morrison Settlement Area (refer to **Figure 18**) located in the vicinity of Shellard Side Road and Morrison Road. In addition to the restrictive specific policy, any development on lands designated as dry industrial / commercial in the Morrison Settlement Area must be compatible with surrounding residential development, and must conform to the policies of the Official Plan.

The Township of North Dumfries also has general policies regarding development applications to expand industrial / commercial areas. However, the Township Road No. 17 Industrial/Commercial Area has an area specific policy which does not permit any expansions within the boundary (refer to **Figure 19**). This area is located on the west side of Shellard Side Road to the north of Main Street East/Old Beverly Road/Regional Road 97.

The Township of North Dumfries also has zoning by-laws for properties along Shellard Side Road. Refer to **Figure 20** for the properties referenced in the zoning by-law along Shellard Side Road. Details of the Township of North Dumfries Zoning by-law Section 20 for properties along Shellard Side Road are provided in **Appendix A.**

3.6 STATUS OF DEVELOPMENT APPLICATIONS

There are multiple planned developments within the study area, in various phases of the approval process (refer to **Figure 21**).

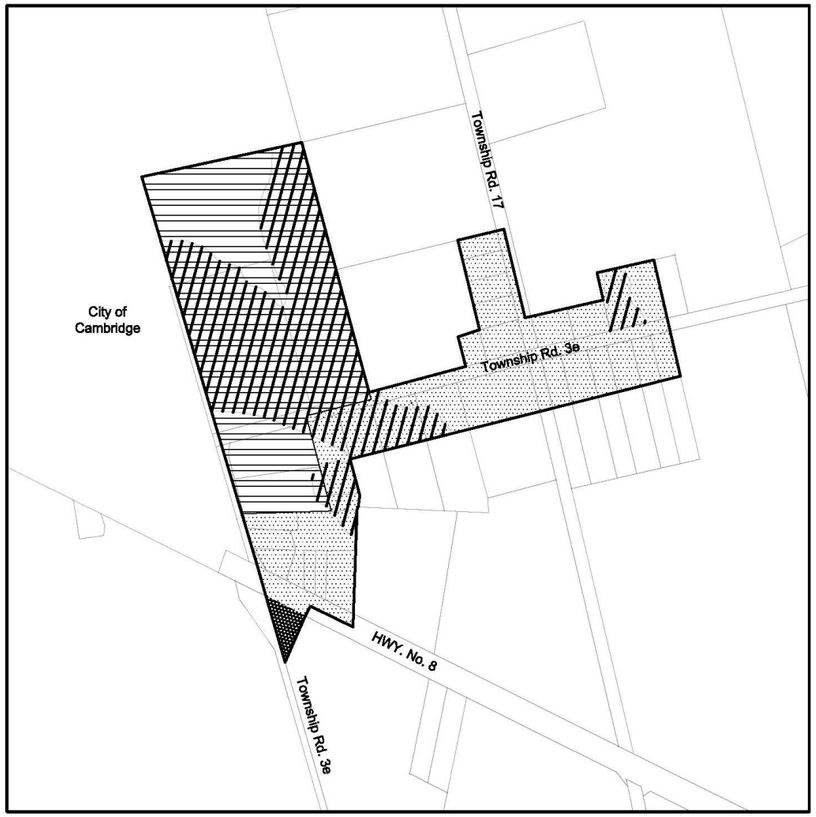
Southeast Galt Community Plan

The Southeast Galt Community Plan includes the lands within the City of Cambridge between Dundas Street South/Highway 8 and Main Street East/Old Beverly Road/Regional Road 97 (refer to **Figure 22**). This Plan was adopted by City Council in 1999. The purpose of the plan was to guide and direct future development applications in the area bounded by Main Street East/Old Beverly Road/Regional Road 97, Dundas Street South/Highway 8, Franklin Boulevard and the municipal boundary with the Township of North Dumfries. The Southeast Galt Community Plan identified a study area for the East Boundary Road, which coincides with the location of the Proposed Regional Corridor as shown on Map No. 9 in the 2006 Region of Waterloo Official Plan and on Map 5b in the 2010 Region of Waterloo Official Plan.

Pre-submission Consultations and Concept Plans

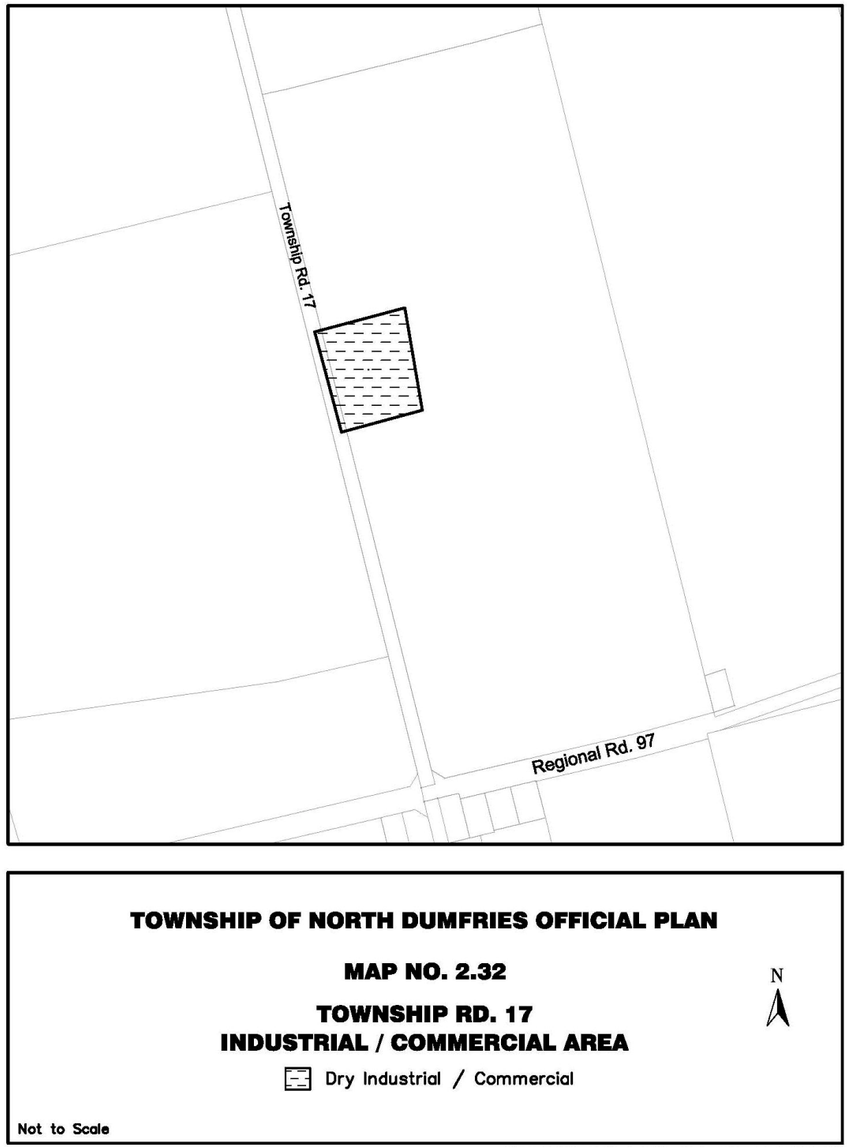
Pre-submission consultations are generally required for all development proposals in the City of Cambridge in order for agency staff to review a concept plan of a proposed development and provide the applicant(s) with comments and any study requirements prior to the applicant(s) submitting a formal planning application to the municipality for review. A concept plan provides a detailed layout of an anticipated development on a single lot or a subdivision based on expected road design, location of services, drainage needs, and density or type of development. A concept plan is also commonly used to guide or coordinate the development of lands owned by various parties, or to outline the development of future neighbourhoods.

Figure 18: Township of North Dumfries Morrison Settlement Area



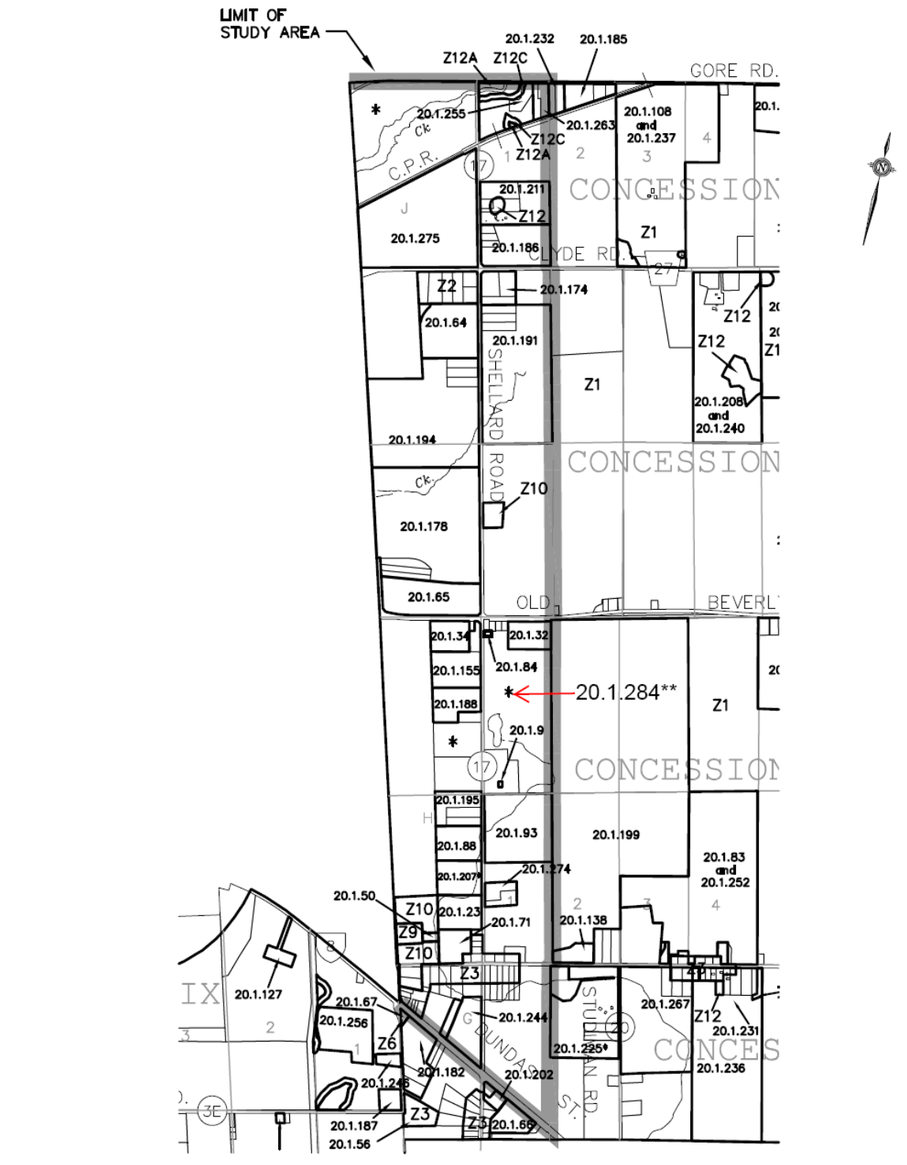
Source: http://www.ksmart.on.ca/Planning/northdumfries_official_plan.htm

Figure 19: Township of North Dumfries Township Road No. 17 Industrial/Commercial Area



Source: http://www.ksmart.on.ca/Planning/northdumfries_official_plan.htm

Figure 20: Zoning By-Law Excerpt for Properties Along Shellard Side Road



Source: K.Smart Associates Limited, July 4, 2012

Figure 21: Planned Developments Within the Study Area

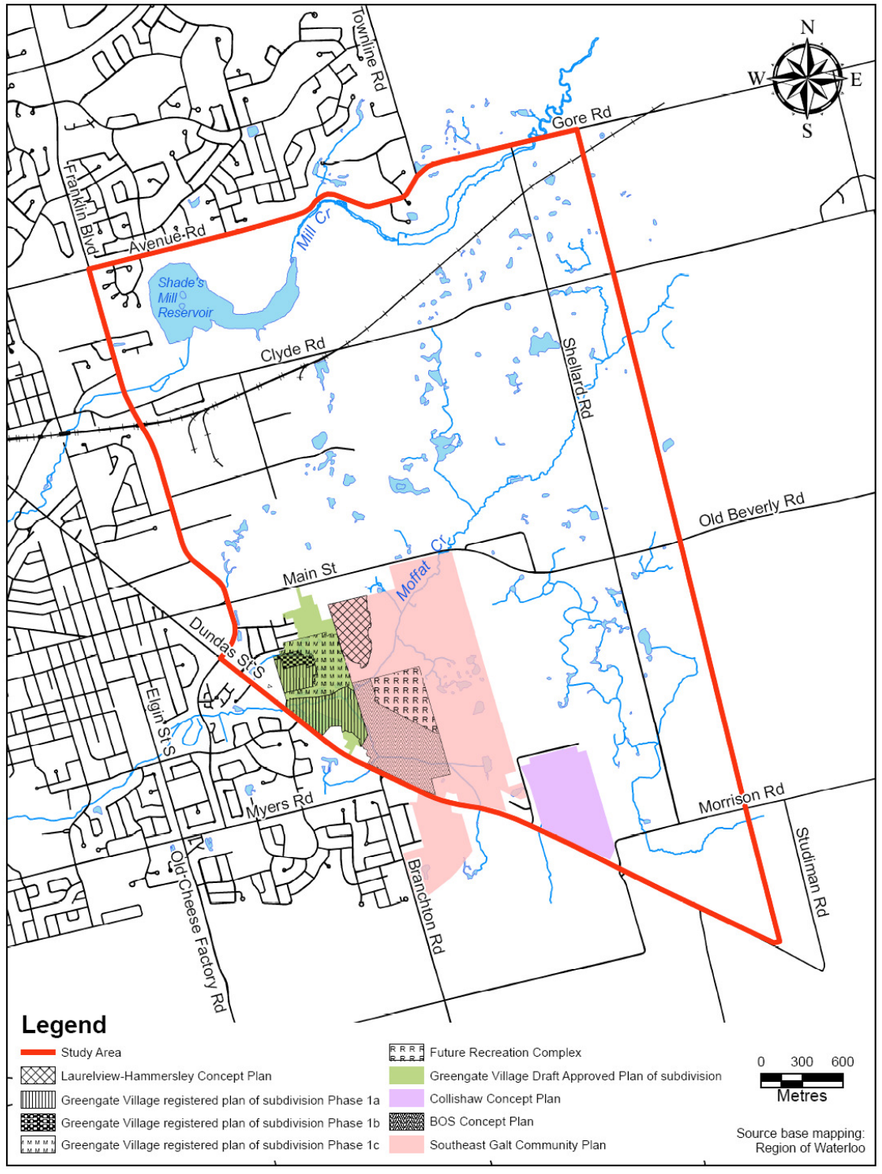
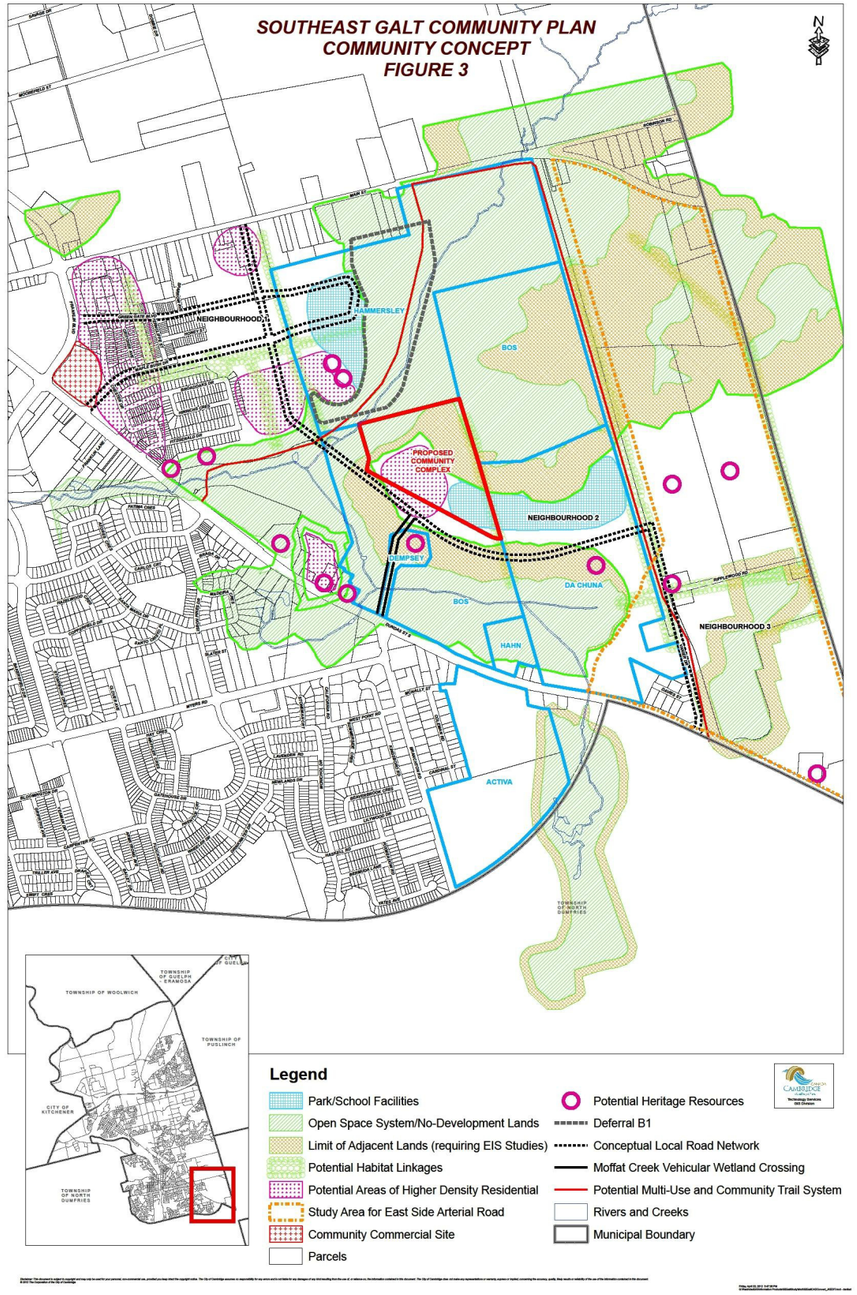


Figure 22: Southeast Galt Community Plan Concept Plan



A number of pre-submission consultations have been held over the last few years for development proposals (with concept plans) on lands within the study area:

- Laurelview-Hammersley Plan: located at 1395 Main Street East/Old Beverly Road/Regional Road 97 (refer to **Figure 23**). A plan of subdivision application has been recently submitted to the Region;
- Collishaw Plan: located at the south end of the study area between Dundas Street South/Highway 8 and the City of Cambridge/Township of North Dumfries border (refer to **Figure 24**);
- Bos Plan: located to the north of Dundas Street South/Highway 8 where it intersects with Branchton Road (refer to **Figure 25**); and
- The City of Cambridge also owns lands adjacent to the Bos Plan within the Southeast Galt Community Plan intended for future development of a Community/Recreation Complex (refer to **Figure 25**).

Draft Approved Plan of Subdivision

A draft approved plan of subdivision is part of a plan of subdivision application submitted under the Planning Act that has received a preliminary approval from a municipality and can only proceed to registration once all of the conditions of the draft approval have been satisfied. Examples of conditions of draft approval include road widenings, the naming of streets, and parkland requirements. The plan of subdivision generally shows topographic information, natural heritage features, and the proposed lots and streets. Lots may be offered for sale after draft approval, but can be sold only after the plan of subdivision has been registered (see below for details about registered plans of subdivision).

Greengate Village Limited has a draft approved plan of subdivision (30T-03102) within the study area, located between Dundas Street South/Highway 8 and Main Street East/Old Beverly Road/Regional Road 97 (refer to **Figure 26**). The plan covers part of lots 4 and 5, Concession 10 within the City of Cambridge.

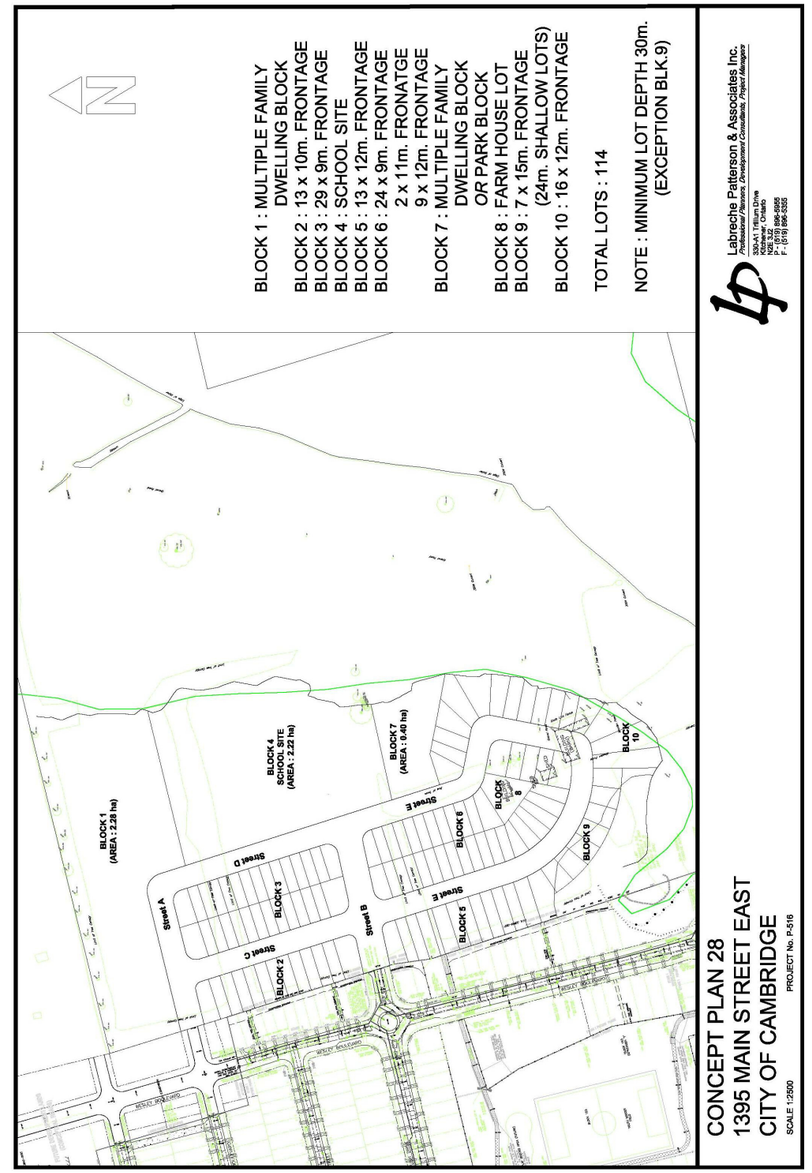
Registered Plan of Subdivision

A registered plan of subdivision, which is the result and final stage of a Plan of Subdivision application, creates legal lots of record that can be sold to another party.

Greengate Village Limited has registered three phases of their draft approved plan of subdivision 30T-03102 located within the study area between Dundas Street South/Highway 8 and Main Street East/Old Beverly Road/Regional Road 97. Phase 1a comprises of Registered Plan 58M-499 (refer to **Figure 27**). Phase 1b comprises of Registered Plan 58M-522 (refer to **Figure 28**). Phase 1c comprises of Registered Plan 58M-543 (refer to **Figure 29**).

3.7 ENVIRONMENTAL FEATURES

According to the Region of Waterloo Official Plan, a portion of the study area is located within the Beverly Environmentally Sensitive Landscape (refer to **Figure 30**). The Beverly Environmentally Sensitive Landscape and its neighbouring Dumfries Carolinian Environmentally Sensitive Landscape are made up of 11,918 ha of sensitive lands in North Dumfries Township and the City of Cambridge. These two areas contain the northern fringe of the Carolinian Forest Zone, Ontario's most threatened ecological area. Other core environmental features that may be found in these areas include Provincially Significant Wetlands (PSWs), regional forests, forests greater than 4 ha, and significant valley features. The Regional of Waterloo Official Plan has special policies for Environmentally Sensitive Landscapes to ensure that the land uses and activities in these areas are compatible with and preserve the unique rural features of these areas. Details can be found in Chapter 7 of the Region of Waterloo Official Plan.



East Boundary Road Corridor Study
City of Cambridge and Township of North Dumfries

Figure 23: Laurelview-Hammersley Concept Plan

Figure 24: Collishaw Concept Plan

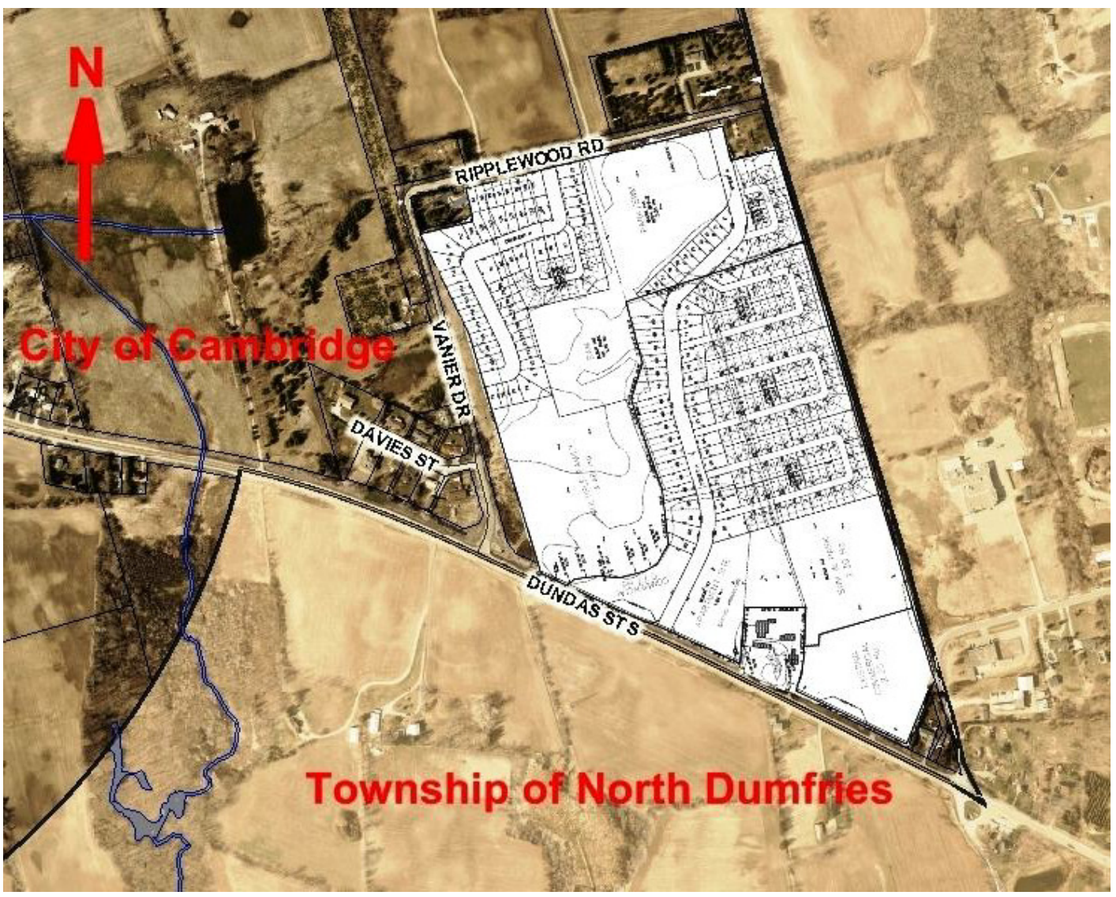


Figure 25: Bos Concept Plan Including the Future Recreational Complex

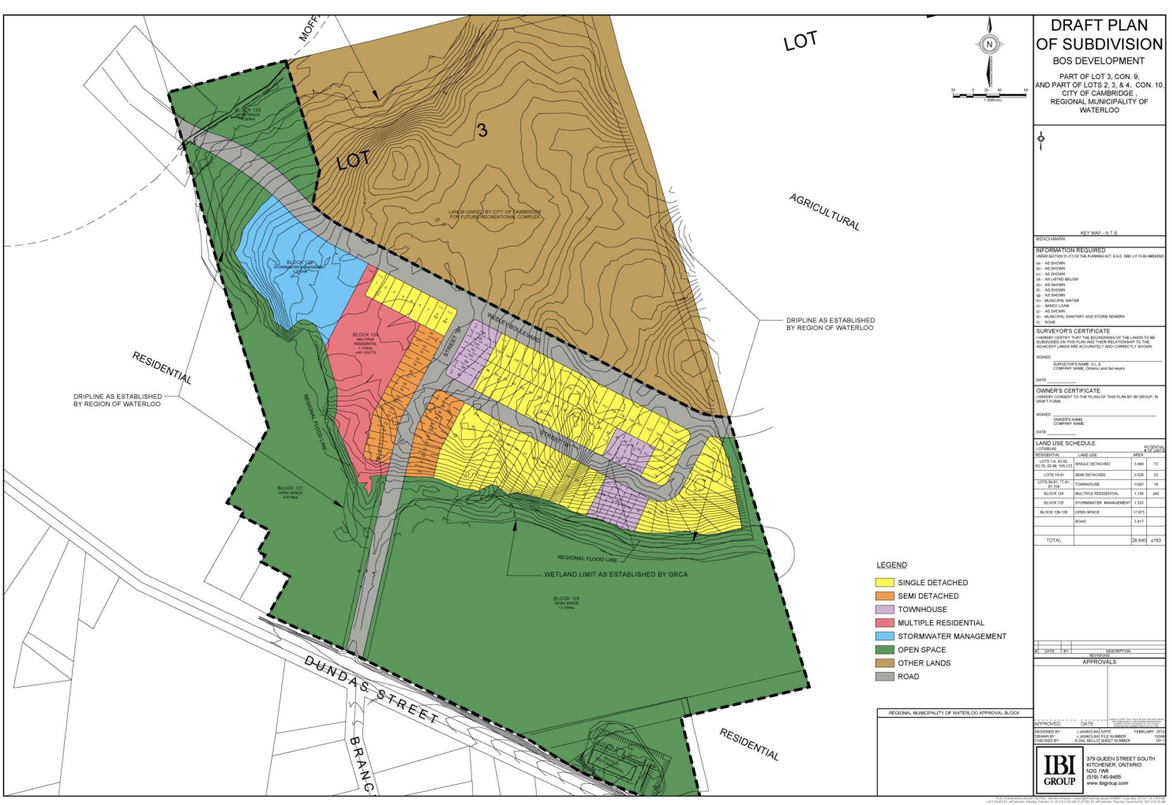


Figure 26: Greengate Village Draft Approved Plan of Subdivision

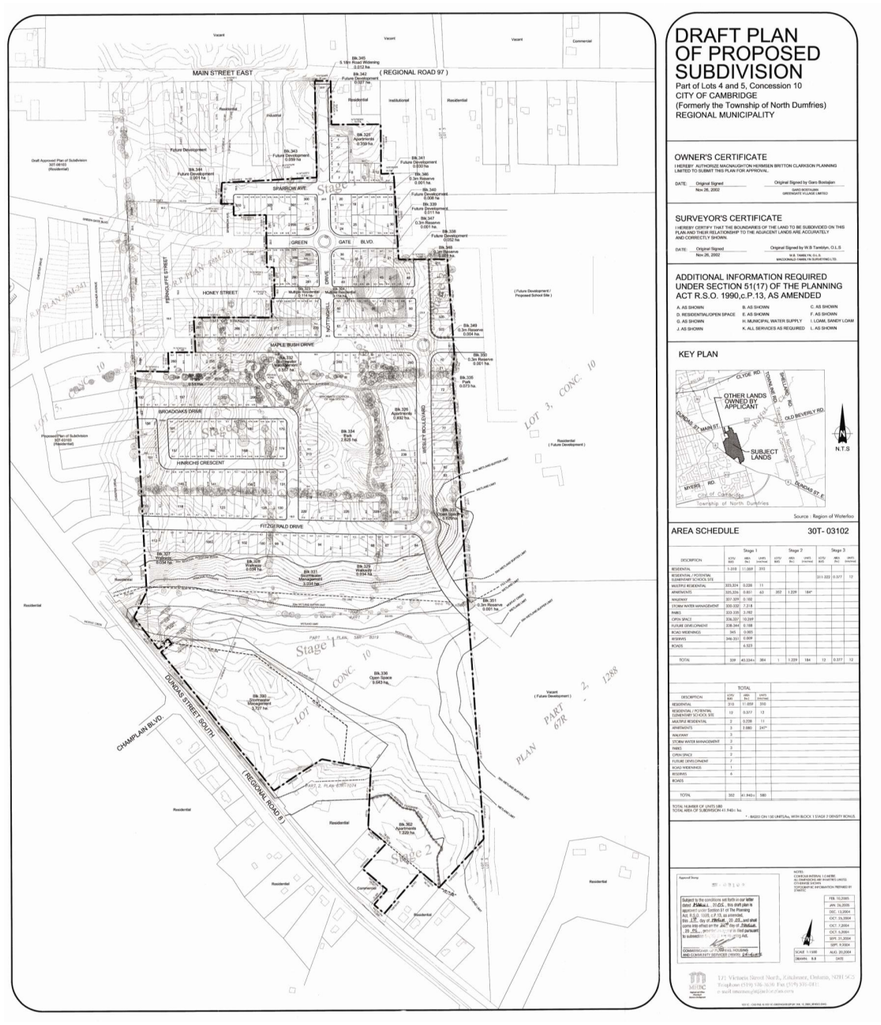


Figure 27: Greengate Village Registered Plan of Subdivision Phase 1a

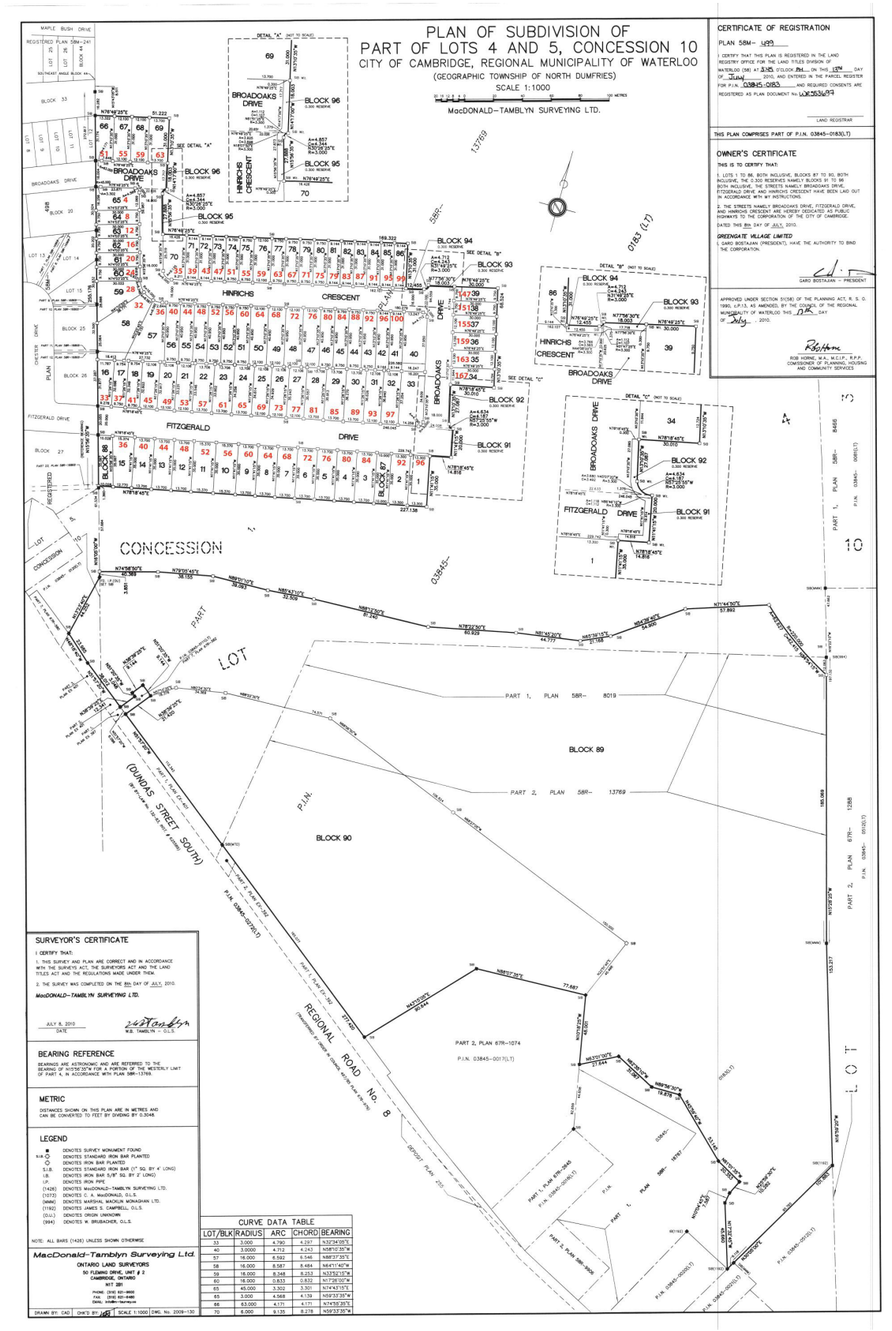


Figure 28: Greengate Village Registered Plan of Subdivision Phase 1b

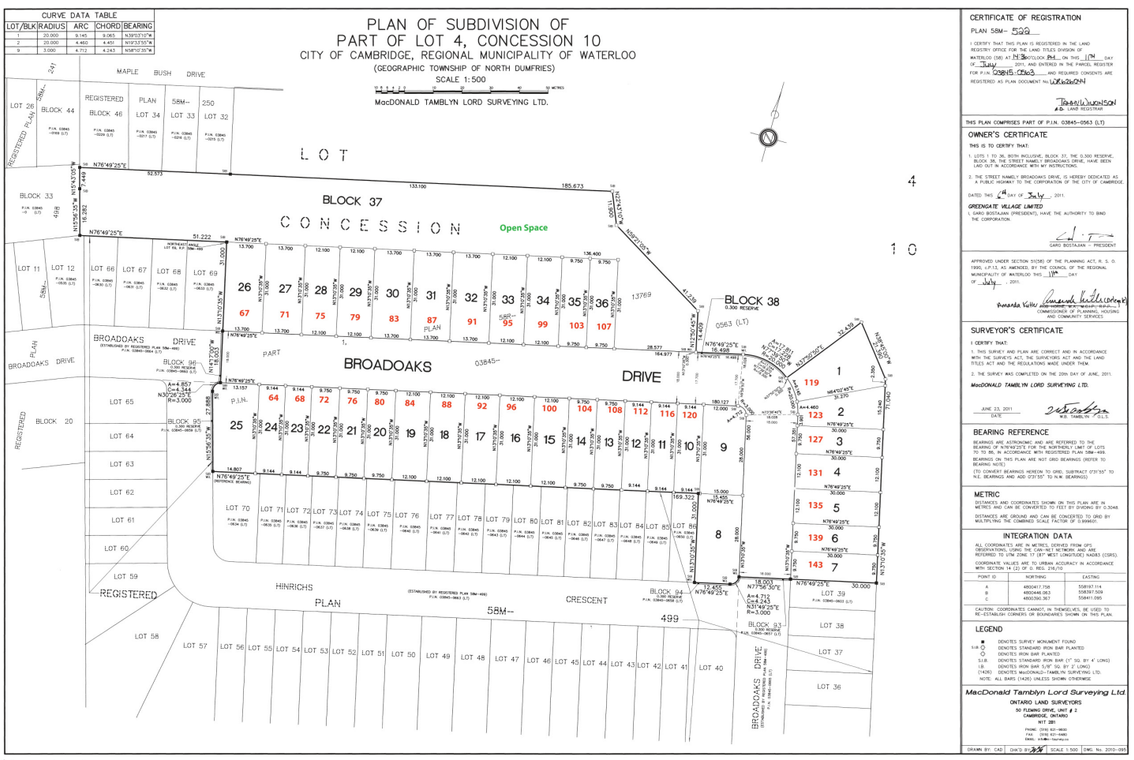
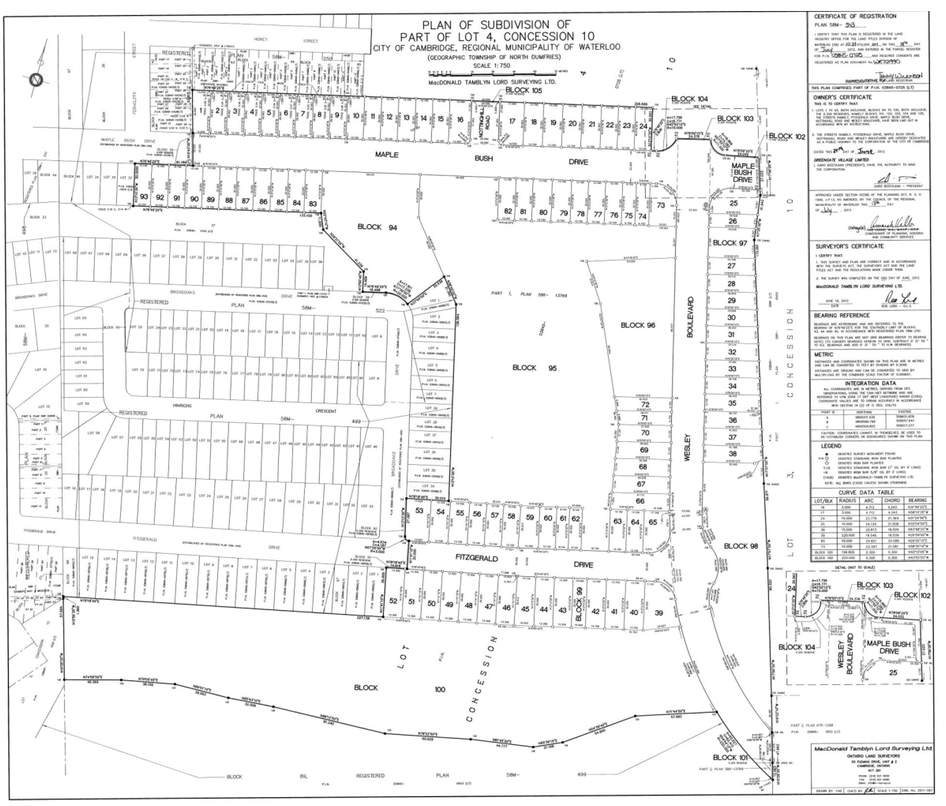


Figure 29: Greengate Village Registered Plan of Subdivision Phase 1c



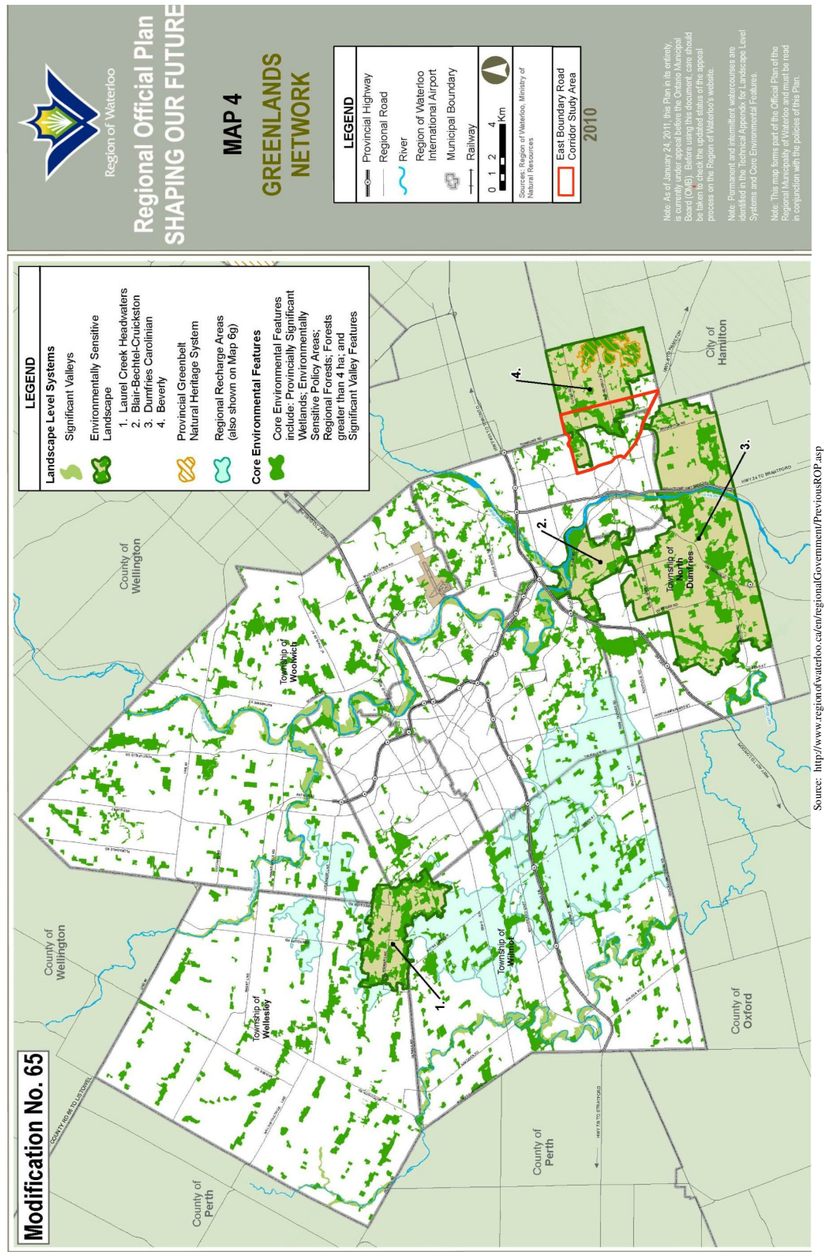


Figure 30: Region of Waterloo 2010 Official Plan Greenland Network Map

To ensure that the municipal drinking-water supply system continues to provide a sufficient quantity and quality of drinking-water, the Region of Waterloo has developed policies to manage land use activities within designated Source Water Protection Areas. These protection areas contribute water, or are in close proximity, to municipal drinking-water supply wells and surface water intakes that are vulnerable to contamination and or depletion from incompatible land uses. As shown in **Figure 31,** the study area has an area of Groundwater Under Direct Influence (GUDI), and two municipal wellheads with their surrounding wellhead protection areas. Development must comply with the policies set out in Chapter 8 of the Region of Waterloo Official Plan – Source Water Protection.

3.8 MINERAL AGGREGATE RESOURCES

There are no mineral aggregate resource areas within the study area.

3.9 TRANSIT AND TRANSPORTATION

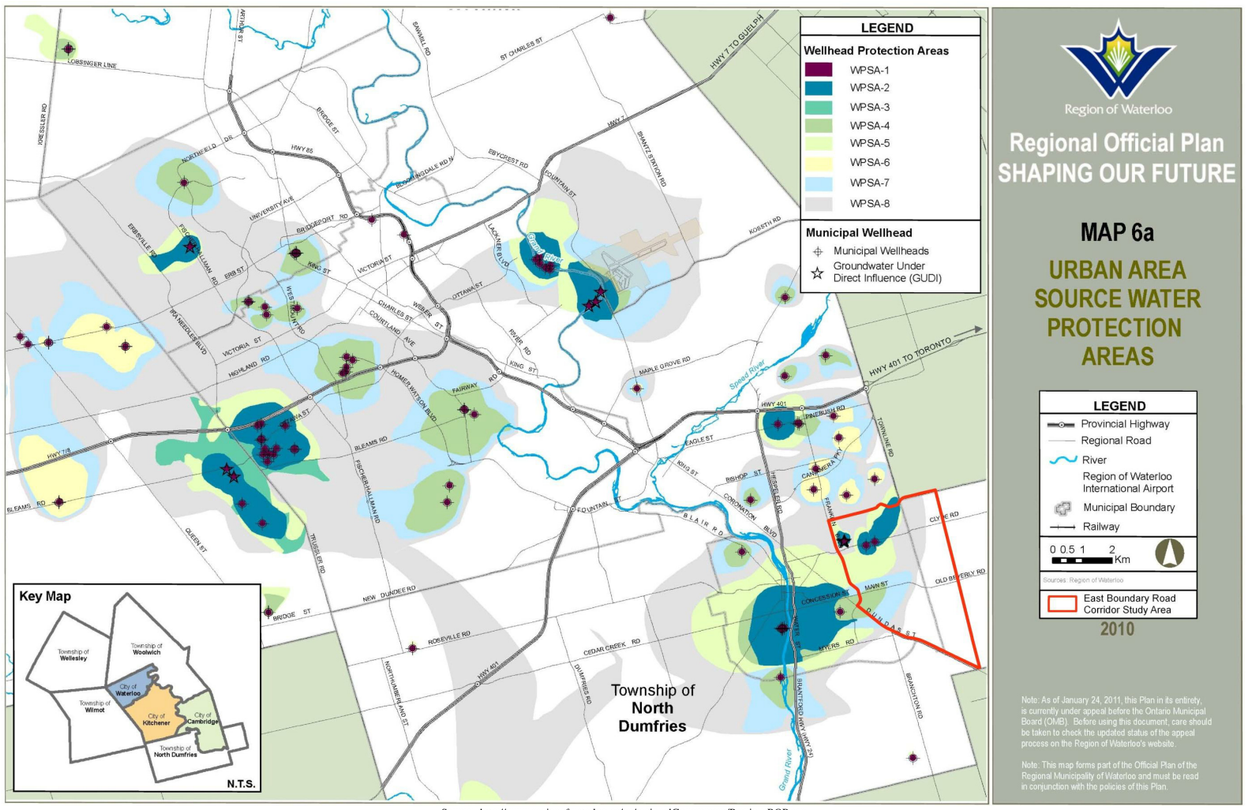
The Region of Waterloo has identified a planned transit corridor along Franklin Boulevard/Regional Road 36 through the study area (refer to **Figure 32**). According to the Official Plan, the transit corridor will be a regional or area municipal road or dedicated right-of-way outside of mixed traffic that will accommodate existing or planned high frequency transit service.

The only proposed road or corridor within the study area is this East Boundary Road Corridor, which is being determined though a Schedule C project under the Municipal Class Environmental Assessment process. The East Boundary Road Corridor was highlighted in the Region of Waterloo 2010 Official Plan (refer to **Figure 33**).

3.10 AESTHETICS

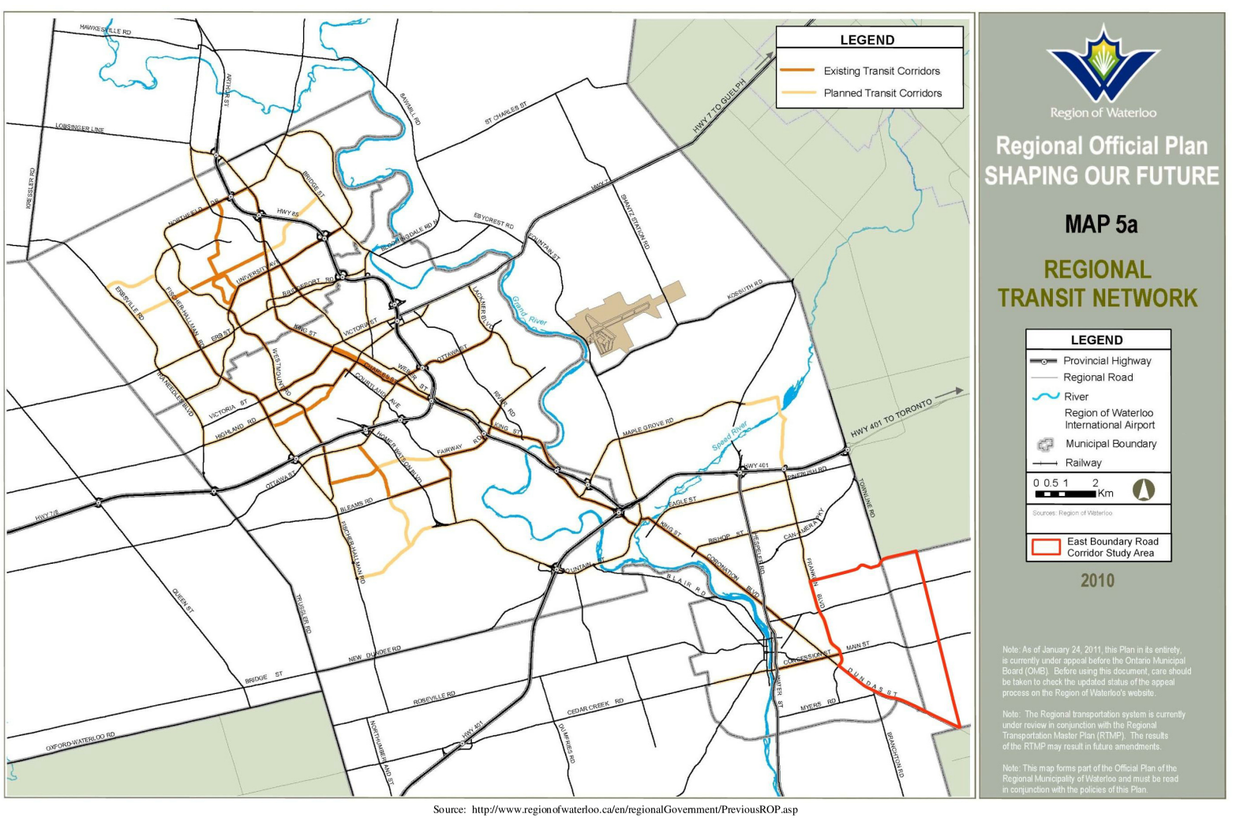
The study area presents a rural community setting, with low to medium density residential, agricultural land use and natural open space, in addition to a pocket of centrally located industrial lands. The gently rolling agricultural fields provide key views and vistas along with the natural open space in the vicinity of Shade's Mill Conservation Area, the lands abutting the major watercourses such as Mill Creek and Moffat Creek, and the Beverly Environmentally Sensitive Landscape. The main roadways through the study area also provide notable views, such as Avenue Road/Gore Road, Clyde Road/Regional Road 27, Main Street East/Old Beverly Road/Regional Road 97, Franklin Boulevard/Regional Road 36, Dundas Street South/Highway 8, and Shellard Side Road, as these roads have helped to shape the surrounding land use and its functions.

Figure 31: Region of Waterloo 2010 Official Plan Source Water Protection Areas



Source: http://www.regionofwaterloo.ca/en/regionalGovernment/PreviousROP.asp

Figure 32: Region of Waterloo 2010 Official Plan Regional Transit Network

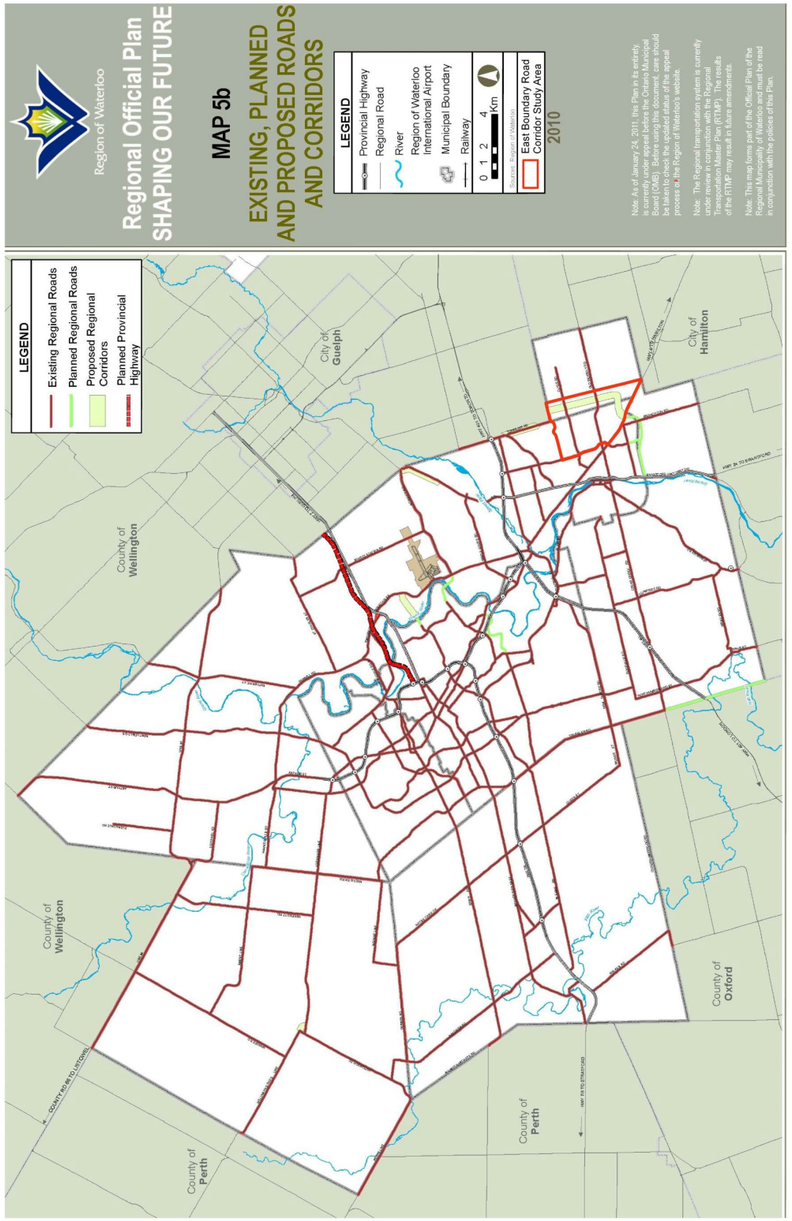


Source: http://www.regionofwaterloo.ca/en/regionalGovernment/PreviousROP.asp

APPENDIX A

Township of North Dumfries Zoning By-law Section 20 Text Compilation For Properties Along Shellard Side Road

Figure 33: Region of Waterloo 2010 Official Plan Existing, Planned and Proposed Roads and Corridors



Source: http://www.regionofwaterloo.ca/en/regionalGovernment/PreviousROP.asp

North Dumfries Zoning By-law Section 20 Text Compilation
For Properties Along Shellard Road

20.1.9 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.9 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) the storage of construction forms, building materials and motor vehicles related to the construction of silos

subject to the following:

b) all uses permitted by this By-law as additional permitted uses shall be conducted entirely within the buildings existing on the lands as shown on the map forming Schedule 'A', Section 20.1.9 of this By-law, together with approved area for parking and access thereto and no additions, extension or enlargements of the said existing buildings shall be permitted nor shall additional buildings be constructed in connection with such additional permitted uses.

20.1.23 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.23 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) private sports and recreational club and uses, buildings or structures accessory thereto.

20.1.32 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.32 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) a kennel

subject to the following:

b) all uses permitted by this By-law as additional permitted uses shall be conducted entirely within the buildings existing on the lands as shown on the map forming Schedule 'A', Section 20.1.32 of this By-law, together with approved area for parking and access thereto and no additions, extension or enlargements of the said existing buildings shall be permitted nor shall additional buildings be constructed in connection with such additional permitted uses.

20.1.34 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.34 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) a school bus garage and uses accessory thereto which shall include the storage, repair and maintenance of school buses;

subject to the following:

b) all uses permitted by this By-law as additional permitted uses shall be conducted entirely within the buildings existing on the lands as shown on the map forming Schedule 'A', Section 20.1.34 of this By-law, together with approved area for parking

and access thereto and no additions, extension or enlargements of the said existing buildings shall be permitted nor shall additional buildings be constructed in connection with such additional permitted uses.

20.1.50 Notwithstanding any other provisions of this By-law, the lands shown as Parcel 'A' on the map forming Schedule 'A', Section 20.1.50 of this By-law may continue to be used for a Residential Building - One Unit until such time as the dwelling unit is removed and the lands shown as Parcel 'A' are development for industrial purposes in accordance with the provisions of Section 16 - Zone 10 (Z.10) of this By-law.

20.1.71 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.71 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) a commercial nursery and greenhouse including the sale of plants and shrubs

subject to the following:

b) all uses permitted by this By-law as additional permitted uses shall be conducted entirely within the buildings existing on the lands as shown on the map forming Schedule 'A', Section 20.1.71 of this By-law, together with approved area for parking and access thereto.

20.1.64 Notwithstanding any other provisions of this By-law:

a) The land identified as 'Part 1' to 'Schedule A' shall have a minimum frontage of 65 m, and a minimum area of 2.4 hectares;
b) The land identified as 'Part 2' to 'Schedule A' shall have a minimum area of 8.0 hectares; and,
c) The land identified as 'Part 2' to 'Schedule A' shall be subject to a Holding Provision (H) until such time as the Council of the Township of North Dumfries is satisfied that an Archaeological Assessment has been completed to the satisfaction of the Region of Waterloo – Planning, Housing and Community Services Department. Satisfaction of this requirement will be outlined in a letter from the Region of Waterloo to the Township of North Dumfries indentifying that an appropriate Archaeological Assessment has been completed to their satisfaction and that development can occur on the subject land in accordance with the findings of the Archaeological Assessment.

20.1.65 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.65 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) a commercial nursery including the sale of plants and shrubs

subject to the following:

b) all uses permitted by this By-law as additional permitted uses shall be conducted entirely within the buildings existing on the lands as shown on the map forming Schedule 'A', Section 20.1.65 of this By-law, together with approved area for parking and access thereto.

20.1.84 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.84 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) a building contractor

subject to the following:

b) all uses permitted by this By-law as additional permitted uses shall be conducted entirely within the buildings existing on the lands as shown on the map forming Schedule 'A', Section 20.1.84 of this By-law, together with approved area for parking and access thereto.

20.1.88 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.88 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) a sandblasting contractor

subject to the following:

b) all uses permitted by this By-law as additional permitted uses shall be conducted entirely within the buildings existing on the lands as shown on the map forming Schedule 'A', Section 20.1.88 of this By-law, together with approved area for parking and access thereto.

20.1.93 Notwithstanding any other provisions of this By-law, the lands illustrated on the map forming Schedule 'A', Section 20.1.93 of this By-law may be used for the following specific uses in addition to those uses permitted in the zone within which the parcel lies:

a) a transmission and communication tower

subject to the following:

b) all uses permitted by this By-law as additional permitted uses shall be conducted entirely within the buildings existing on the lands as shown on the map forming Schedule 'A', Section 20.1.93 of this By-law, together with approved area for parking and access thereto.

20.1.155 Notwithstanding and other provisions of this By-law, the lands illustrated as Part 1 on the map forming Schedule 'A' - Section 20.1.155 of this By-law may have a minimum lot area of .973 hectares and a minimum lot frontage of 19.087 metres and the lands illustrated as Part 2 on the map forming Schedule 'A' - Section 20.1.155 of this By-law may have a minimum lot area of 6.0 hectares and a minimum lot frontage of 208 metres.

20.1.174 Notwithstanding any other provision of this By-law, the lands illustrated as Part 1 on the map forming Schedule 'A' – Section 20.1.174 of this By-law may have a minimum lot area of 1.45 hectares and a minimum lot frontage of 98.3 metres.

The lands illustrated Part 2 on the map forming Schedule 'A' – Section 20.1.174 of this By-law may have a minimum lot areas of 1.50 hectares and a minimum lot frontage of 104.6 metres.

The lands illustrated as Part 3 on the map forming Schedule 'A' – Section 20.1.174 of this

By-law may have a minimum lot area of 1.0 hectares and a minimum lot frontage of 44.2 metres.

20.1.178 Notwithstanding any other provisions of this By-law, the lands illustrated as Part 1 on the map forming Schedule 'A' - Section 20.1.178 of this By-law may have a minimum lot area of 1.00 hectares and a minimum lot frontage of 30.00 meters.

The lands illustrated as Part 2 forming Schedule 'A' -Section - 20.1.178 of this By-law may have a minimum lot area 1.00 hectares and a minimum lot frontage of 30.00 metres.

The lands illustrated as Part 3 forming Schedule 'A'-Section - 20.1.178 of this By-law may have a minimum lot area 1.00 hectares and a minimum lot frontage of 30.00 metres.

The lands illustrated as Part 4 forming Schedule 'A' -Section - 20.1.178 of this By-law may have a minimum lot area 37.09 hectares and a minimum lot frontage of 390.00 metres.

20.1.186 Notwithstanding any other provisions of this By-law, the lands illustrated as Part 1 on the map forming Schedule 'A' - Section 20.1.186 of this By-law may have a minimum lot area of 0.41 hectares and a minimum lot frontage of 50.0 metres.

The lands illustrated as Part 2 on the map forming Schedule 'A' - Section 20.1.186of this By-law may have a minimum lot area of 0.40 hectares and a minimum lot frontage of 42.0 metres.

The lands illustrated as Part 3 on the map forming Schedule 'A' - Section 20.1.186of this By-law may have a minimum lot area of 0.4 hectares and a minimum lot frontage of 37.0 metres.

The lands illustrated as Part 4 on the map forming Schedule 'A' - Section 20.1.186of this By-law may have a minimum lot area of 8.77 hectares.

20.1.188 Notwithstanding any other provisions of this By-law, the lands illustrated as Part 1 on the map forming Schedule 'A' - Section 20.1.188 of this By-law may have a minimum lot area of 0.6 hectares and a minimum lot frontage of 59 metres.

The lands illustrated as Parts 2 and 3 on the map forming Schedule 'A' - Section 20.1.188 of this By-law may have a minimum lot area of 4.8 hectares and a minimum lot frontage of 139.0 metres.

The lands illustrated as Parts 2 and 3 on the map forming Schedule 'A' - Section 20.1.188 of this By-law shall be zoned as Zone 12 - Z.12 (Open Space) and shall be subject to all applicable regulations of Section 18 of By-law Number 689-83 as amended.

Notwithstanding any other provisions of this By-law, the lands illustrated as Part 3 on the map forming Schedule 'A' - Section 20.1.188 of this By-law shall be the limits of the "Building Envelope".

20.1.191 Notwithstanding any other provisions of this By-law, the lands illustrated as Part 1,2 and 3 on the map forming Schedule 'A' - Section 20.1.191 of this By-law may have a minimum lot area of 1 hectare and a minimum lot frontage of 50 metres.

20.1.194 Notwithstanding any other provisions of this By-law, the lands illustrated as Part 1 on the map forming Schedule 'A' - Section 20.1.194 of this By-law may have a minimum lot area of 1.0 hectares and a minimum lot frontage of 55.0 metres.

The lands illustrated as Part 2 on the map forming Schedule 'A' – Section 20.1.194 of this By-law may have a minimum lot area of 1.0 hectares and a minimum lot frontage of 55.0 metres.

The lands illustrated as Part 3 on the map forming Schedule 'A' – Section 20.1.194 of this By-law may have a minimum lot area of 1.0 hectares, a minimum lot frontage of 55.0 metres.

The lands illustrated as Part 4 on the map forming Schedule 'A' – Section 20.1.194 of this By-law may have a minimum lot area of 33.0 hectares.

20.1.195 Notwithstanding any other provisions of this By-law, the lands illustrated as Part 1 on the map forming Schedule 'A' - Section 20.1.195 of this By-law may have a minimum lot area of 1.1 hectares and a minimum lot frontage of 56.0 metres.

The lands illustrated as Part 2 on the map forming Schedule 'A' – Section 20.1.195 of this By-law may have a minimum lot area of 1.0 hectare and a minimum lot frontage of 51.0 metres.

The lands illustrated as Part 3 on the map forming Schedule 'A' – Section 20.1.195 of this By-law may have a minimum lot area of 3.0 hectares.

20.1.211 Notwithstanding any other provisions of this By-law, the lands illustrated as Part 1 on the map forming Schedule 'A' - Section 20.1.211 of this By-law shall have a minimum lot area of 2.2 hectares, a minimum lot frontage of 100.0 metres, and a minimum building setback of 24 metres. The northern side yard setback shall be 45.0 metres as illustrated on Schedule 'A'.

The lands illustrated as Part 2 on the map forming Schedule 'A' – Section 20.1.211 of this By-law shall have a minimum lot area of 1.6 hectares, a minimum lot frontage of 75.0 metres, and a minimum building setback of 24 metres.

The lands illustrated as Part 3 on the map forming Schedule 'A' – Section 20.1.211 of this By-law shall have a minimum lot area of 6.0 hectares.

The hatched area, representing a pond and buffer zone, shall be identified as Zone 12 as illustrated on Schedule 'A'.

20.1.232 Notwithstanding any other provisions of this By-law, the lands illustrated as Part 1 on Schedule 'A' – Section 20.1.232 of this By-law may have a minimum lot area of 0.91 hectares and a minimum lot frontage of 53 metres.

The lands illustrated as Part 2 on Schedule 'A' – Section 20.1.232 of this By-law may have a minimum lot area of 0.68 hectares and a minimum lot frontage of 38 metres.

20.1.255 Notwithstanding any other provisions of this By-law:

a) the lands illustrated as Part 1 on Schedule 'A' – Section 20.1.255 of this By-law may have a minimum lot area of 1.2 hectares and a minimum lot frontage of 65.0 metres

b) The lands illustrated as Part 2 on Schedule 'A' – Section 20.1.255 of this By-law may have a minimum lot area of 7.37 hectares

c) The lands illustrated as Part 3 on Schedule 'A' – Section 20.1.255 of this By-law shall be rezoned to Zone 12A – Z.12A; and

d) The lands illustrated as Part 4 on Schedule 'A' – Section 20.1.255 of this By-law shall be rezoned to Zone 12C – Z.12C.

20.1.274 Notwithstanding any other provisions of the By-law:

a) the lands illustrated as Part 1 on Schedule 'A' – Section 20.1.274 of this By-law may have a minimum lot area of 1.1 hectares ands minimum lot frontage of 35 meters; and

b) The lands illustrated as Part 2 on Schedule 'A' – Section 20.1.274 of this By-law may have a minimum lot area of 1.2 hectares and a minimum lot frontage of 105 meters.

20.1.275 Notwithstanding any other provisions of the By-law:

a) the lands illustrated as Part 1 on Schedule 'A' – Section 20.1.275 of this By-law may have a minimum lot area of 1.0 hectares and a minimum lot frontage of 130.0 metres;

b) The lands illustrated as Part 2 on Schedule 'A' – Section 20.1.275 of this By-law may have a minimum lot area of 1.0 hectares and a minimum lot frontage of 38.0 metres;

c) the lands illustrated as Part 3 on Schedule 'A' – Section 20.1.275 of this By-law may have a minimum lot area of 1.0 hectares and a minimum lot frontage of 90.0 metres; and

d) the lands illustrated as Part 4 on Schedule 'A' – Section 20.1.275 of this By-law may have a minimum lot area of 39.0 hectares and a minimum lot frontage of 350.0 metres.

20.1.284** Notwithstanding any other provisions of this By-law:

d) the lands illustrated as Part 1 on Schedule 'A' – Section 20.1.284 of this By-law may have a minimum lot area of 1.69 hectares and a minimum lot frontage of 101 metres;

e) The lands illustrated as Part 2 on Schedule 'A' – Section 20.1.284 of this By-law may have a minimum lot area of 1.0 hectares and a minimum lot frontage of 72 metres;

f) the lands illustrated as Part 3 on Schedule 'A' – Section 20.1.284 of this By-law may have a minimum lot area of 1.18 hectares and a minimum lot frontage of 120 metres; and

g) the lands illustrated as Part 4 on Schedule 'A' – Section 20.1.284 of this By-law may have a minimum lot area of 25.79 hectares and a minimum lot frontage of 361 metres

** Note: Section 20.1.284 has not been passed by the Township, Public Meeting was held on July 3, 2012

APPENDIX C

PRELIMINARY BUILT HERITAGE ASSESSMENT REPORT

Preliminary Built Heritage Assessment Report

East Boundary Road Corridor Study
in
The City of Cambridge and the Township of North Dumfries



Prepared for:
The Region of Waterloo
Transportation and Environmental Services
Design and Construction
150 Frederick Street, 6th Floor
Kitchener, Ontario M2G 4J3

Prepared by:
URS Canada
75 Commerce Valley Drive
Markham, Ontario L3T 7N9
www.urs.com

Executive Summary

URS carried out a preliminary inventory of Heritage Resources that have been identified within the East Boundary Road Corridor Study Area, either by Designation under the Ontario Heritage Act, or by Listing on Municipal Heritage Inventories, and also identified possible heritage resources based on historical mapping and documentation. This preliminary heritage assessment review will be used as a resource for the future and final Cultural Heritage Resources Assessment that will be completed when the Study Area has been refined and the full Class EA is undertaken.

Within the Study Area, there are: two properties designated under Part IV of the Act; 16 properties that have been listed by the City of Cambridge or the Township of North Dumfries, and; five properties that have potential to be identified and listed.

URS recommends that:

1. A windscreen survey should be carried out to confirm the status of the Designated and Listed resources identified above
2. Suspected potentially significant resources should be investigated and recorded for further study
3. Due to the preliminary nature of this report, it has not been possible to confirm or identify roadscape or other potential Cultural Heritage Landscapes; these should be addressed in the windscreen survey
4. When planning for the East Boundary Road Corridor proceeds to the design phase, a Heritage Impact Assessment (HIA) should be prepared for each of the properties identified as a Built Heritage Resource or Cultural Heritage Landscape that will be subject to project related impacts

DRAFT

Preliminary Heritage Resources Report
East Boundary Road Corridor Study
Region of Waterloo

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DRAFT

Introduction

The purpose of the East Boundary Road Corridor Study is to identify an alignment for the proposed East Boundary Road Corridor that alleviates traffic along the existing arterial roads, accommodates future growth of the City of Cambridge and Region of Waterloo, complies with Regional and Provincial policies, and minimizes impacts on transportation, the natural environment, cultural environment, and socio-economic environment (including development). The work will be undertaken as a Schedule C project under the Municipal Class Environmental Assessment process. The Study Area is generally bounded by Avenue Road/Gore Road to the north, Franklin Boulevard/Regional Road 36 to the west, Dundas Street South/Highway 8 to the south, and 500 m east of Shellard Side Road to the east. In advance of project initiation, a number of pre-project works, including this Preliminary Heritage Resources Report, are being undertaken to determine if refinements can be made to the Study Area.

This preliminary heritage assessment/ review will be used as a resource for the future and final Cultural Heritage Resources Assessment that will be completed when the Study Area has been refined and the full Class EA is undertaken.

Policy Context

The Waterloo Region is responsible for administration and application of the Ontario Heritage Act within its component municipalities, which respecting the Study Area includes the City of Cambridge and the Township of North Dumfries. Waterloo Region Heritage Planning Advisory Committee (HPAC) co-ordinates the efforts of the Cambridge Municipal Heritage Advisory Committee (MHAC) and the Township of North Dumfries Municipal Heritage Committee, which are responsible for compiling and maintaining local Heritage Registers or Inventories.

The applicable Provincial and Municipal policies respecting Heritage Resources are as follows:

The Ontario Heritage Act RSO 1990, Part IV, 29 (1)(a), hereafter OHA, states that:
The council of a municipality may, by by-law, designate a property within the municipality to be of cultural heritage value or interest if, (a) where criteria for determining whether property is of cultural heritage value or interest have been prescribed by regulation, the property meets the prescribed criteria.

Provincial Policy Statement 2005 states that:

2.6.1 *Significant built heritage resources and significant cultural heritage landscapes shall be conserved.*

2.6.3 *Development and site alteration may be permitted on adjacent lands to protected heritage property where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved. Mitigative measures and/or alternative development approaches may be required in order to conserve the heritage attributes of the protected heritage property affected by the adjacent development or site alteration.*

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The Waterloo Regional Official Plan (ROP)[1]

Identification of Cultural Heritage Resources

3.G.1 The Region and Area Municipalities will ensure that *cultural heritage resources* are *conserved* using the provisions of the Heritage Act, the Planning Act, the Environmental Assessment Act, the Cemeteries Act and the Municipal Act.

3.G.2 The Region will prepare and update a Regional Implementation Guideline for Conserving Regionally Significant Cultural Heritage Resources. In accordance with the Ontario Heritage Act, this guideline will outline the criteria and processes the Region will follow to identify and *conserve cultural heritage resources* of Regional interest including regional roads that have cultural heritage value or interest.

3.G.3 Area Municipalities will identify cultural heritage resources by establishing and maintaining a register of properties that are of cultural heritage value or interest. Area Municipalities will include on their register properties designated under Part IV, V or VI of the Heritage Act, and will consider including, but not be limited to, the following additional cultural heritage resources of cultural heritage value or interest:

(a) properties that have heritage conservation easements or covenants registered against title;
(b) cultural heritage resources of Regional interest; and
(c) cultural heritage resources identified by the Grand River Conservation Authority and the Federal or Provincial governments.

3.G.4 The Region will coordinate and maintain a region-wide inventory of *cultural heritage resources* that are:

(a) listed on registers established and maintained by Area Municipalities;
(b) identified by the Federal or Provincial governments, and the Grand River Conservation Authority;
(c) identified through research by the Region, Area Municipalities, post-secondary institutions or local historical societies;
(d) of Regional interest; or Chapter 3 Liveability in Waterloo Region
(e) owned by the Region.

Cultural Heritage Landscapes

3.G.5 The Region will prepare and update a Regional Implementation Guideline for Cultural Heritage Landscape Conservation. This guideline will outline the framework for identifying *Cultural Heritage Landscapes,* including *Cultural Heritage Landscapes* of Regional interest, and for documenting each individual landscape through a Cultural Heritage Conservation Landscape Plan that includes:

(a) a statement of significance;
(b) a listing of the *cultural heritage resources* and attributes being *conserved* within the *Cultural Heritage Landscape* through the use of existing planning tools, such as Heritage Act designations, listings on the Municipal Register, official plan policies, secondary plans and zoning by-laws; and

[1] Regional Official Plan, as approved, with modifications on Dec. 22, 2010. As of January 24, 2011, this Plan in its entirety, is currently under appeal before the Ontario Municipal Board (OMB).

(c) recommendations for additional conservation measures.

3.G.6 Area Municipalities will designate *Cultural Heritage Landscapes* in their official plans and establish associated policies to *conserve* these areas. The purpose of this designation is to *conserve* groupings of *cultural heritage resources* that together have greater heritage significance than their constituent elements or parts.

3.G.7 The Region will assist Area Municipalities with the preparation of Cultural Heritage Landscape Conservation Plans for *Cultural Heritage Landscapes* of Regional interest.

Recommendations pertaining to the preservation of heritage resources and character will follow the *Standards and Guidelines for the Conservation of Historic Places in Canada* (Parks Canada, 2010), and the Ontario Ministry of Culture's *Eight Guiding Principles in the Conservation of Built Heritage Properties* (2007).

Methodology

The purpose of this preliminary report is to identify heritage resources within the Study Area that have previously been recognized at the local, provincial or national level, and to examine the documentary evidence to locate others with potential that have not yet been evaluated.

This was accomplished by consulting the Township Clerk for North Dumfries and the *City of Cambridge Heritage Properties Inventory* (2010) for municipal lists, the Ontario Heritage Properties Database, and the National Register of Historic Places for other levels of recognition.

Historic mapping, census records, land registry data and other tools were used to assemble a profile of early settlement history. This was cross-referenced with recent aerial photography to locate and identify extant structures in addition to those Listed on the Municipal Registers or Designated under the Act, which may have potential as heritage resources.

All of the data thus collected has been collated in the **Table: Built Heritage Resources (BHRs) and Cultural Heritage Landscapes (CHLs)**, below. Among other local history sources and documents, this information was used to compile the **Historical Overview** to provide context for the resources.

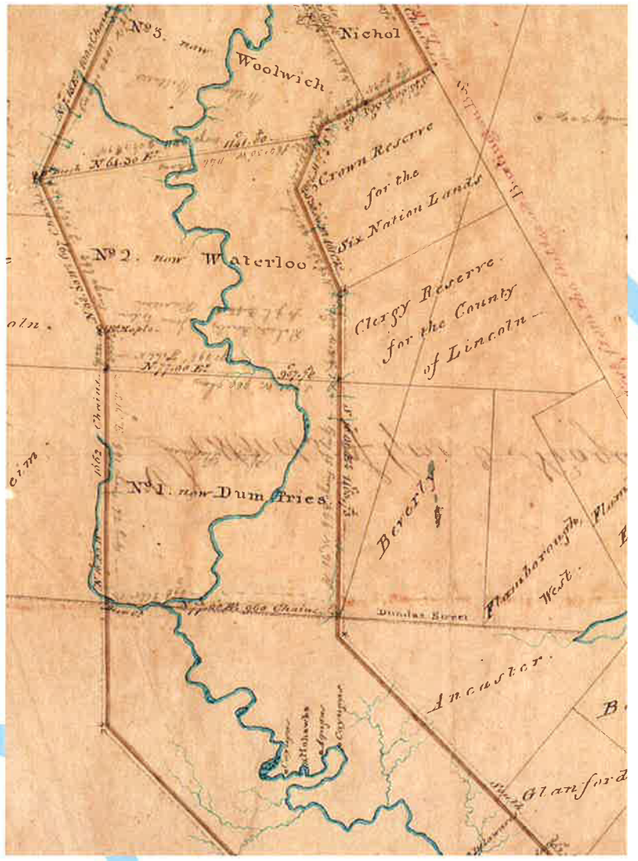
The Study Area

The Study Area includes all properties within the boundaries of Franklin Boulevard on the west, Dundas Street South on the south, Shellard Sideroad on the east, and Avenue Road on the north. These boundaries have been superimposed on historical mapping to illustrate the context of the Study Area over time. See: **The Study Area: Historical Mapping,** Figures 1—3.

Historical Overview

During the aftermath of the Revolutionary War, Sir Frederick Haldimand, the Governor of Quebec, issued the Haldimand Proclamation on October 25, 1784 granting to the Six Nations on behalf of the Crown all of the land for six miles either side of the Grand River from the mouth to the headwaters in compensation for loss of land in the United States, and in recognition of their services during the

conflict.[2] Years of confusion ensued over whether the Six Nations were allowed to lease or sell parts of the grant as they chose, finally resolved in 1798 when six blocks of land of various sizes were parcelled off for sale. Block 1 eventually became Dumfries Township.



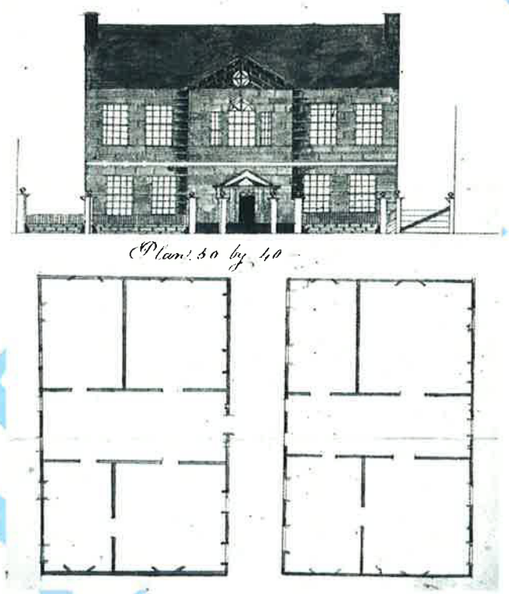
A detail of Thomas Ridout's *"Plan shewing the Lands granted to the Six Nation Indians"*, dated at York on 2nd February 1821. The new township of Dumfries (Block no. 1) is indicated with its metes and bounds information *(Library & Archives Canada, NMC 3114).*

The original purchaser of Block 1 in 1795, Philip Stedman,[3] died in an American jail without ever making a payment on the property. There followed several claims which all turned out to be fraudulent before the deceased Stedman's sister was acknowledged as his heir in 1810.[4] The confusion arose partly due to the lack of clear and consistent means of transferring and registering

[2] *Haldimand Papers*, B222, 1061(Library and Archives Canada)
[3] Grant of Block No. 1 to Philip Stedman, 1795
[4] James Young. *Reminiscences of the Early History of Galt and the Settlement of Dumfries, in the Province of Ontario.* (Toronto: Hunter, Rose & Company, 1880), p.15.

property ownership, and partly because it wasn't clear whether the Six Nations were a sovereign people with the right to hold property in fee simple.

Hon William Dickson (1769-1846) was born in Dumfries, Scotland, and came to Quebec in 1785. He was very well-connected – a cousin of Robert Hamilton (1753-1809), founder of Queenston, who with his business partner Richard Cartwright (1759-1815) had built a commercial empire in Upper Canada, centred in Niagara and Kingston. Dickson worked for them as a forwarding agent on Carleton Island (near Kingston), and later managed his cousin's mills and store on the Twelve Mile Creek (St Catharines). He came to Queenston in 1790. In 1811, at Newark, he had built for him a substantial brick house that included a valuable library of 1,000 books he had brought over from Britain.[5]



Elevation and plans of the William Dickson house in Newark, destroyed during the War of 1812-14, a fine example of the British Classical tradition of design that the Scots brought with them. *(LAC NMC 126556)*

In 1803 Dickson was granted a license to practice law, and in this capacity he carried out the legal work necessary for the Six Nations to sell blocks of land. In payment for these services, he was given 4,000ac. at the mouth of the Grand River. For several years Dickson tried to buy other land on speculation from the Six Nations, including Block 1. Finally, in 1811, Thomas Clark bought Block 1, apparently with his cousin William Dickson as a silent partner.

[5] Harold D. Kalman. *A History of Canadian Architecture, vol. 1* (Toronto: Oxford University Press, 1994), pp. 152-53.

Dickson hoped to sell lots to a "higher class" of immigrants from the United States, but was prevented by prohibitions brought on by the rumbling hostilities. Consequently he focused his attentions on Scotland, specifically Dumfries, Roxburgh and Selkirk, encouraging leading Scots to consider the potential of Upper Canada. Unlike the tenant crofters who were being cleared from the Highlands around this time, these were people of some means and education.

In 1816, when full ownership of Block 1 was registered in Dickson's name he hired Absalom Shade (1793-1862), a builder by trade, as his agent and manager in Dumfries. They travelled to the vicinity that summer to choose a site for establishing mills on the Grand River. They selected the site where the town of Galt grew up around the mills, but its original name was Shade's Mills. The place was densely forested and difficult to access. The Dundas Road was put through in 1795, but it was a crude affair and often impassable. Immigration was slow at first, but gradually increased in the 1820s.[6]

By 1819, when the first bridge over the Grand was built,[7] there was sufficient critical mass that a meeting was held on January 4th to choose Town and Parish officers, a clerk, two assessors, a collector, two wardens, four pathmasters and a pound keeper.[8] The following year there were 10 buildings in Shade's Mills: Shade's house & store, a sawmill (1817), Dumfries Mill (1818), three log houses, a shanty, distillery (1820), the blacksmith's shop and the ruins of an old mill. A tavern opened in 1821.

In 1825 growth at the town site began to accelerate. Scottish immigrants were becoming concentrated in the north of Dumfries, buying their land east of the Grand River. William Dickson moved his family from Queenston to Shade's Mills, where he busied himself providing support for new arrivals to ensure that their ventures in clearing land and making a home were successful. This was not wholly altruistic – prosperous farmers made good business sense for Dickson, who had made his original fortune outfitting and provisioning Loyalists and the military establishment at Niagara.

Elsewhere in the township, Abel Mudge built grist and sawmills on the Nith River in 1824, which grew into the village of Ayr.

John Galt (1789-1839) passed through Shade's Mills in 1827, on his way to oversee the construction of a road on to Guelph. Galt was another of Dickson's connection from his schooldays in Scotland, and was also engaged in settling British immigrants in central Ontario as an agent of the Canada Company. The post office was established at Shade's Mills at about this time and was designated Galt in his honour. Soon after, the village became known as Galt as well.

Roads and transportation in general were problematic. The Dundas Road was nearly impassable through the Beverly swamp, and travellers were frequently harassed by wolves. An endeavour by Absalom Shade indicates how difficult it was to transport goods to markets: he set up a system using flat-bottomed "arks" rafted together to float goods down the Grand River to Lake Erie and through

[6] Dickson biographical details are condensed from the account of James Young, and from
[7] Young, p. 34.
[8] Young, p. 134.

the Welland Canal to Lake Ontario at Port Dalhousie (approximately twice the distance as the Dundas Road). He operated this service from 1831-34.

Robert Dickson, one of William's sons undertook the construction of the Galt Dam in 1836, a project that included a canal, but it never materialized.[9] The concept was later picked up by Absalom Shade with backing from William Dickson, but Dickson backed out and the idea was dropped.

The late 1830s were a time of many improvements in Galt and North Dumfries generally. A committee was struck to establish a subscription and circulating library. The first game of curling took place during the winter of 1836-37, and the following year the Galt Curling Club was founded. It is still active, one of the oldest in the province. The Gore District Mutual Fire Insurance Co. was established with headquarters in Brantford, providing a valuable service to the district. The construction of a macadamized road from Dundas to Waterloo was begun in 1837, finally overcoming the dangers of the Beverly Swamp.

The area was also very politically engaged, and Dumfries' inhabitants took a keen interest in the developments leading up to the Rebellion. When William Lyon Mackenzie came to Galt and made a speech, Tory supporters in the crowd burned him in effigy. When Mackenzie and Samuel Lount fled after the rebellion ended, it was rumoured that Lount was in hiding near Galt for several days.[10] When Lord Durham began his commission into the Rebellion, the first public meeting was in Galt. The Dumfries Reformers were very active in raising petitions in support of Responsible Government.

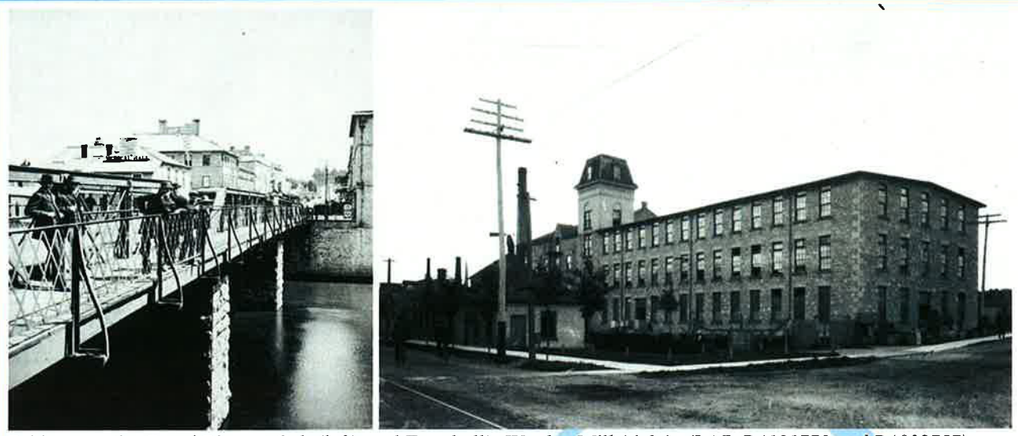
The political division in the township ran deep, but it could be put aside when necessary. In 1839 the Dumfries Agricultural Society was founded, an important institution for disseminating agricultural techniques, improving crops and breeding superior livestock. One of the rules stated emphatically that the discussion of politics was forbidden at DAS meetings and events, on pain of expulsion from the society.[11]

Other signs of growth and progress include the construction of a Township Hall (1839), and the election of the first township officers to the Gore District Council, as well as school commissioners (1842). The first township newspaper, the Dumfries *Courier* was established in 1844, followed by the Galt *Reporter*.

Galt was incorporated as a village under the Municipal Act in 1850, and the township elected five councillors. The population at this time was about 2,000. The community was served by two newspapers, the Tory *Dumfries Reporter*, and the Grit *Galt Reformer*. North and South Dumfries were split in 1852, with the south part of Brant County, the north with Waterloo.

[9] Young, p. 121
[10] Young, p. 162
[11] Young, p. 182.

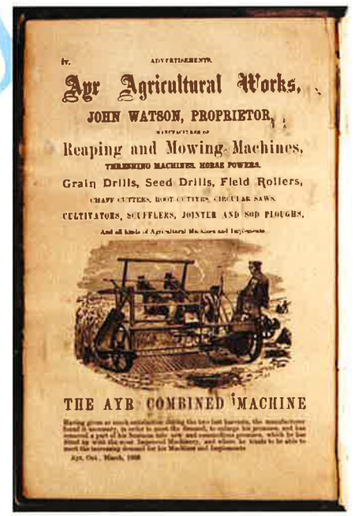
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Bridge over the Grand River at Galt (left), and Trumbull's Woolen Mill (right). *(LAC, PA121773 and PA032757)*

The abundance of water power at Galt and Ayr formed the basis of a number of industries, including mills, foundries and manufacturing. At Ayr, John Watson opened the Ayr Agricultural Works in 1848, manufacturing farming implements at the site of the old Mudge mills. This business grew into an internationally known company, exhibiting its wares and winning awards at the Centennial Exposition in Philadelphia (1876) and at the Paris World's Fair (1878). Galt experienced an economic and industrial boom through the mid-19th century, rapidly developing a wide range of manufactured goods, tanneries, woollen mills, carriage works, breweries – even a paper collar factory.

Galt became known as the "Manchester of Canada."[12] The *Waterloo Gazetteer* described Galt in 1867 as the largest town in the county, and "in regard to its establishments, one of the principal in the Province," with "unlimited water power, and the employment of stone in building which abounds in the neighbourhood gives it a remarkably substantial appearance."[13]



[12] Young, p. 230.
[13] *Province of Ontario Gazetteer & Directory for 1869* (Library and Archives Canada, "Canadian Directories: Who was Where" database, http://www.collectionscanada.gc.ca/databases/canadiandirectories/001075-100.01-e.php), p. 164.

North Dumfries is described as "remarkable for its fertility," "well-watered by the Grand and the Nith Rivers and Cedar Creek. The soil is generally a light sandy loam, the surface rolling and well adapted for wheat and other cereals. Great attention is paid to stock raising, and a number of Durham cattle and Leicester sheep have been imported. The timber is a mixture of pine, oak, beech, maple, elm, cherry, basswood and cedar. Limestone of a superior quality is abundant. There are at present in the Township five flouring mills, two woollen mills and several sawmills."[14]
The part of Beverly Township that has been annexed to North Dumfries and is now part of the Study Area developed in much the same pattern as its neighbour.



Grand Trunk Railway Station at Galt *(LAC, PA 032756).*

[14] W.H. Irwin and George E. Burnham. *Gazetteer & Directory of the County of Waterloo, 1867* (Toronto: Irwin & Burnham, Publishers, 1867), p. 1.



Galt Town Hall, built 1857*(LAC, PA031829)*

The limestone that is noted in *Gazetteer* entries for both Galt and North Dumfries was ideal for the incoming Scottish population, which has a long tradition of stone masonry construction. The unusually high proportion of buildings of all types in stone is due to the coincidence of an abundance of excellent stone with a skilled workforce.



Water Street Looking South, Galt *(LAC PA032759).*

In 1854-55 the Great Western Railway connected Galt with its main line at Harrisburg. Sir Allan McNabb had turned the first sod at a ceremony in Galt, followed by a ball in 1852. In 1880 the Credit Valley Railway was completed through North Dumfries as well. With good rail connections to markets, agriculture and industry in the township continued to prosper through the 1860s, '70s, and into the 1880s. At the same time, however, on-going improvements to the Great Lakes shipping canal system began to lure cargo away from the railway, offering cheaper, reliable transportation of goods all the way to the Lakehead by 1897. The industrial complex at Hamilton Harbour began to outstrip Galt during the latter part of the 19th century, and the heady days of the "Manchester of Canada" drew to a close.

Through the 20th century, the township and its principal urban centre settled into a stable era of agriculture and manufacturing, which changed little until new concepts of municipal administrative efficiency began to emerge in the 1960s. The communities of Galt, Hespeler, Preston and Blair had grown together, and it was deemed more practical to amalgamate them under a single city council. This happened in 1973, and the new municipality was named Cambridge. At the same time the Regional form of government replaced the old County system, and several boundary lines were changed with the result that parts of Beverly Township were annexed to the Township of North Dumfries.

Identification of Heritage Resources

The review of municipal heritage listings revealed that there are a number of properties within the Study Area that have been recognized as heritage resources. These include:

Designations under Part IV of the Ontario Heritage Act

- Alexander Adair House, 961 Dundas Street South, Cambridge, Ontario
- "Wolfe Farm," 795 Franklin Boulevard, Cambridge, Ontario

Listed Buildings, Township of North Dumfries

- Richard Bond House, 2591 Dundas Street South, Township of North Dumfries
- Shellard House, 1337 Shellard Side Road, Township of North Dumfries
- Robert Henderson House, 1481 Shellard Side Road, Township of North Dumfries

Listed Buildings, Cambridge, Ontario

- Turnbull House, 879 Avenue Road, Cambridge, Ontario
- 30 Bluerock Crescent, Cambridge, Ontario
- Allan Henderson House, 400 Clyde Road, Cambridge, Ontario
- 1101 Dundas Street South, Cambridge, Ontario
- 1111 Dundas Street South, Cambridge, Ontario
- 1151 Dundas Street South, Cambridge, Ontario
- John Milroy Sr. House, 1261 Dundas Street South, Cambridge, Ontario
- William McArthur House, 1791 Dundas Street South, Cambridge, Ontario
- Donald Fraser House, 2371 Dundas Street South, Cambridge, Ontario
- 5 Ripplewood Drive, Cambridge, Ontario
- 29 Ripplewood Drive, Cambridge, Ontario
- 105 Ripplewood Drive, Cambridge, Ontario

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One Listed Property in Cambridge, 360 Clyde Road (Lot 6/XII North Dumfries) has been demolished since the list was updated in 2010.

In several cases, cross-referencing data from historical mapping and current aerial photography has revealed extant buildings located on or near where the mapping identifies structures. In these cases, URS recommends that field survey should be carried out to confirm or rule out the potential Heritage Resources as well as to identify others that may have gone undetected, including but not limited to the following:

- 1062 Clyde Road, Township of North Dumfries, Ontario
- 2371 Dundas Street South, Cambridge, Ontario
- 1688 Morrison Road, Township of North Dumfries, Ontario
- Robinson Road, Township of North Dumfries (Lot I in the Gore/IX Beverly)
- 16 54 Shellard Side Road, Township of North Dumfries

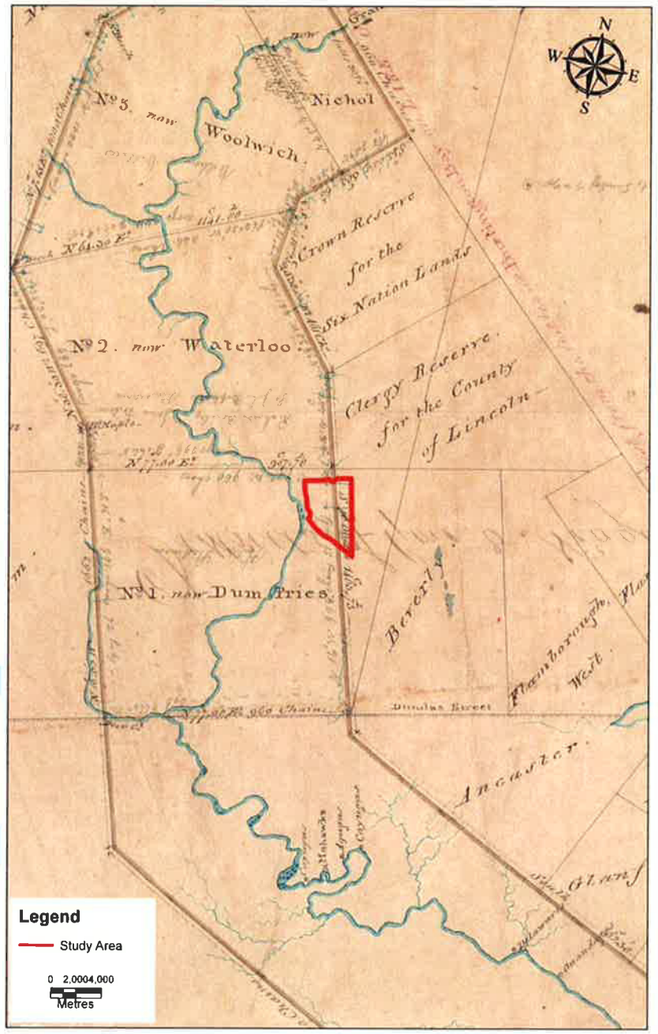
All of these properties have been plotted on the **Map: Built Heritage Resources & Cultural Heritage Landscapes in the Study Area** (p. 19, below). All data gathered on individual properties has been compiled in the **Table: Built Heritage Resources (BHRs) and Cultural Heritage Landscapes (CHLs)** (p. 20, below).

Recommendations

The findings of this preliminary inventory indicate that there is a significant number of heritage resources in the Study Area that require further evaluation, and that it is likely that there are several that have not yet been identified and/or listed in the municipal registers. Consequently, URS makes the following recommendations:

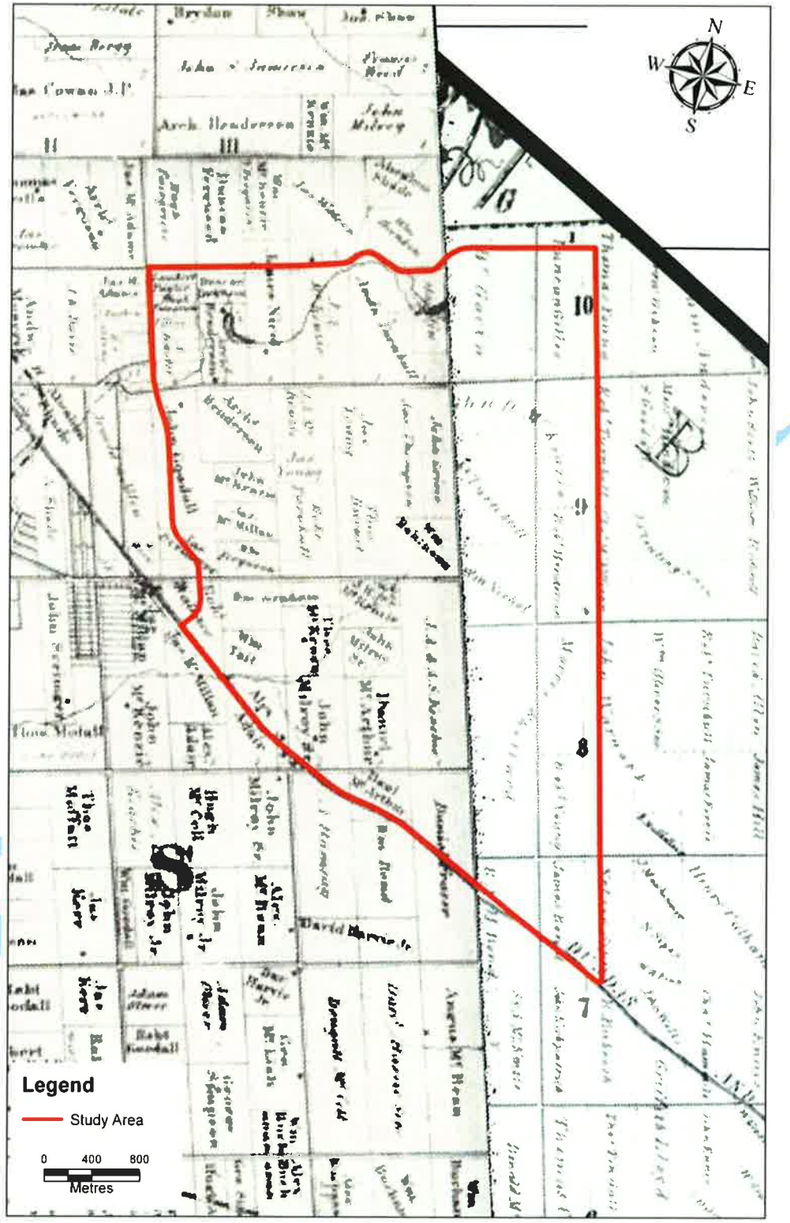
5 A windscreen survey should be carried out to confirm the status of the Designated and Listed resources identified above
6 Suspected potentially significant resources should be investigated and recorded for further study
7 Due to the preliminary nature of this report, it has not been possible to confirm or identify roadscape or other potential Cultural Heritage Landscapes; these should be addressed in the windscreem survey
8 When planning for the East Boundary Road Corridor proceeds to the design phase, a Heritage Impact Assessment (HIA) should be prepared for each of the properties identified as a Built Heritage Resource or Cultural Heritage Landscape

The Study Area: Historical Mapping

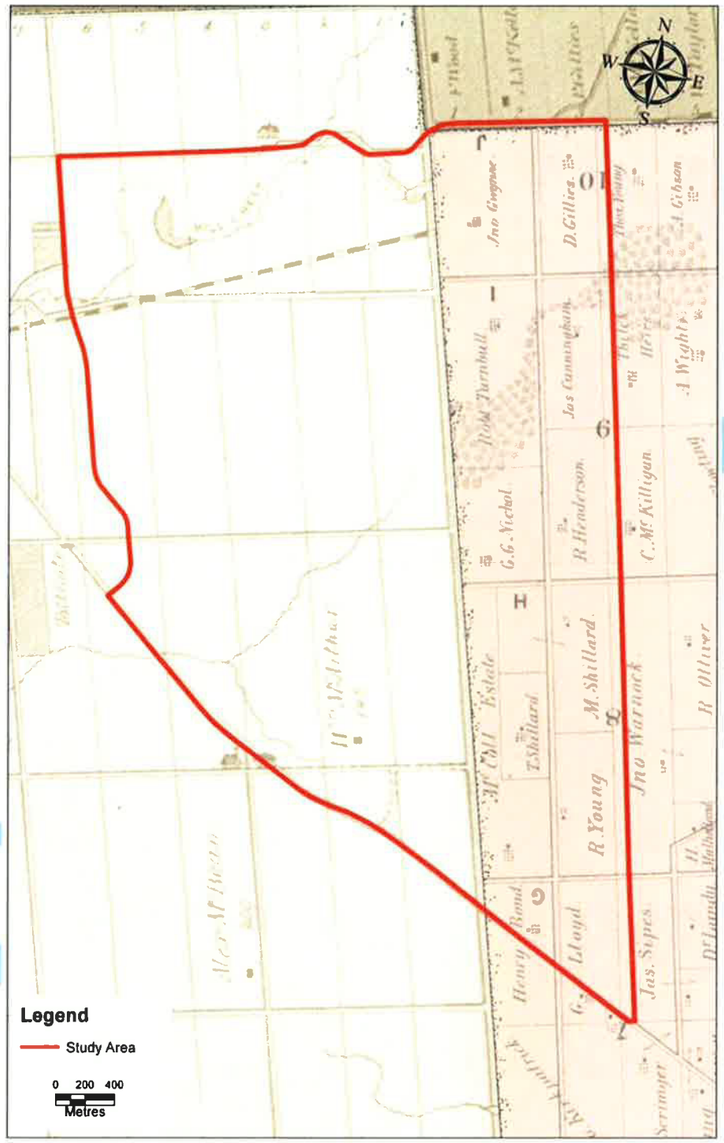


1 Thomas Ridout's *"Plan shewing the Lands granted to the Six Nation Indians"*, dated at York on 2nd February 1821, indicating the situation of the Study Area. *(Library & Archives Canada, NMC 3114).*

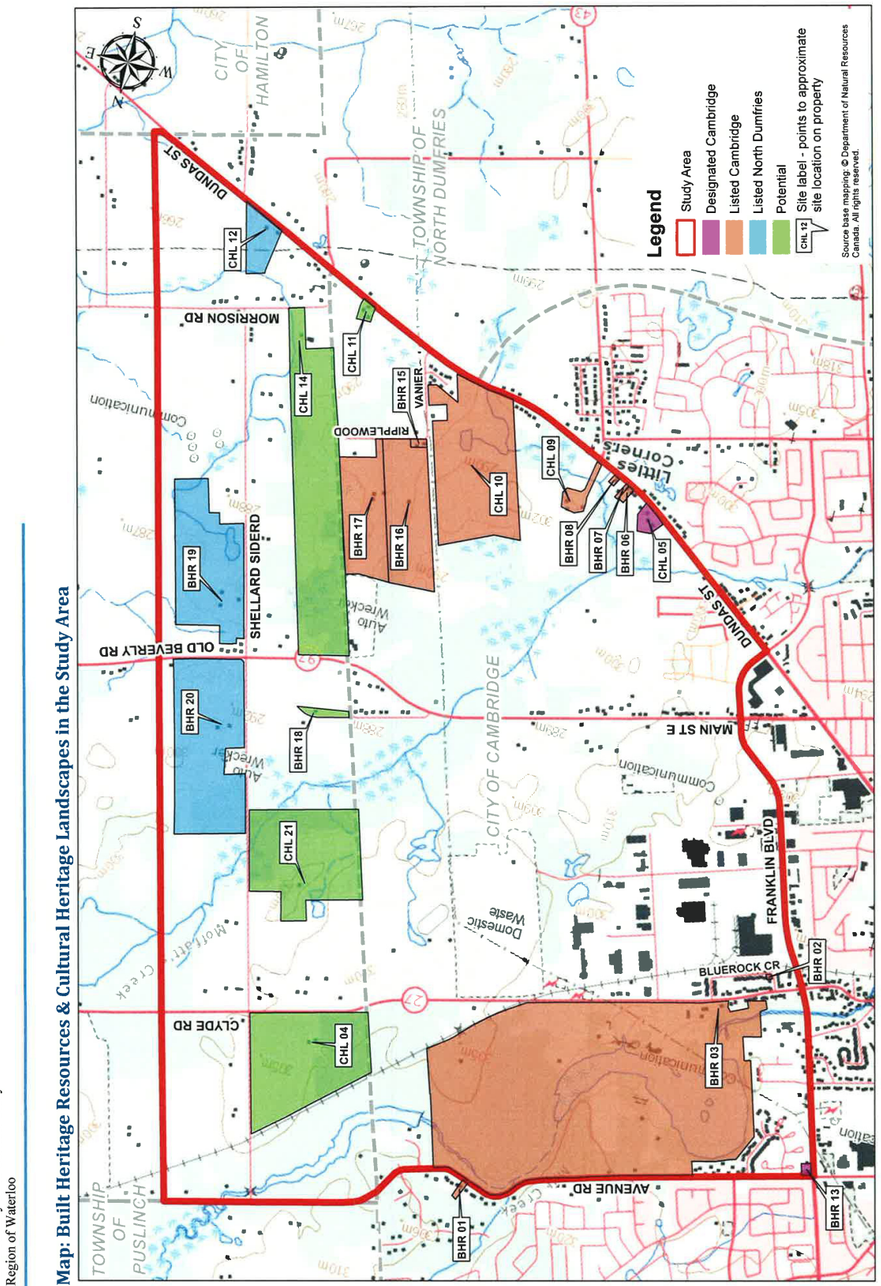
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2 Composite details of *Tremaine's Map of the County of Waterloo, Canada West.* (Toronto: Geo. R. & G.M. Tremaine, 1861), and *Map of the County of Wentworth, Canada West* (Hamilton: Hardy Gregory , Lithographer & Engraver, 1859) indicating the Study Area ca. 1860.



3 Composite details from *Illustrated atlas of the county of Waterloo*. Toronto: H. Parsell & Co., 1881), and *Illustrated historical atlas of the county of Wentworth, Ont.* Toronto: Page & Smith, 1875) indicating the location of the Study Area. It should be noted that the Waterloo labelled properties only when the owned paid a subscription fee, so that only a few names are recorded.



Map: Built Heritage Resources & Cultural Heritage Landscapes in the Study Area

Table: Built Heritage Resources (BHRs) and Cultural Heritage Landscapes (CHLs)

Census citations are written: Schedule A or B page no./line no., ex. B23/12-16
ASI refers to Archaeological Services Inc. *Built Heritage and Cultural Landscape Assessment, South Boundary Transportation corridor, Class Environmental Assessment, Regional Municipality of Waterloo, Ontario.* September 2007 (Revised April 2008).
WRG refers to Waterloo Region Generations. http://generations.regionofwaterloo.ca/index.php

Type/Site no.	Property Description	Resource Description	Heritage Status	Citations/Notes
BHR 01	879 Avenue Road, Cambridge, Ontario Lot 2/XII North Dumfries .	1½ storey stone house with side-gable, low-pitched roof, 3-bay symmetrical façade, stone end chimneys; 6/6 double hung sash windows, flat transom, single panel door; addition on the east side	Listed, "Landmark series" Cambridge	**WRG:** Andrew Turnbull b.1821 Scotland, d1877 North Dumfries **Census** 1851: Andrew Turnbull, 1-storey frame house **Tremaine Map** (1861): land in Lots 1 & 2/XII **Waterloo Gazetteer** (1867): places A.T. in Lot 1/XII **Census** 1891: Jared Turnbull in 2-storey *(sic)* stone house, 10 rooms This house is located on the north side of the road, and therefore outside the Study Area proper
BHR 02	30 Bluerock Crescent, Cambridge, Ontario Lot 5/XI North Dumfries	2-storey Italianate	Listed, "Landmark series" Cambridge	**Tremaine Map** (1861): John Goodall **Waterloo Gazetteer** (1867): Allan and John Goodall, both householders
demolished	360 Clyde Road, Cambridge, Ontario Lot 6/XII North Dumfries	Demolished – the site is now vacant	Listed, "Landmark series" Cambridge	
BHR 03	400 Clyde Road, Cambridge, Ontario Lot 5/XII North Dumfries *The house is located on the Shade's Mills Conservation Area site.*	2-storey stone house with side gable roof and stone end chimneys, random-coursed squared rubble, centre hall plan; 3-bay symmetrical façade with 6/6 double hung sash and single panel door	Listed, "Landmark series" Cambridge	**WRG:** Allan Henderson (1785- d. before 1851), emigrated Scotland 1827 A. Henderson probably built the house ca1840 **Census 1851** (A5-8/16-20): Archibald Henderson, b. 1819 in Scotland, lives with his widowed mother in 2-storey stone house; there is a water-powered sawmill on the property that produced about 300,000ft of lumber in 1851, employing two men, including sawyer Jessie Thornton **Tremaine Map** (1861): shows the house as well as the saw mill
Potential CHL 04	1062 Clyde Road, Township of North Dumfries, Ontario Lot J in the Gore/X, Beverly	Unknown, this farmstead is located approximately on the site of a residence indicated on the Atlas map (1875)	Further investigation warranted	**Census** 1851 (B23/15): Robert Scrimger **Gregory Map** (1859): Dr Gavin **Atlas** (1875) Jno. Gwynne
CHL 05	961 Dundas Street South, Cambridge, Ontario Lot 4/X, Dumfries	1½-storey stone house, side gable roof, centre hall plan, gable over entrance with flat-headed window	Designated, Part IV, "Landmark series" Cambridge	**WRG:** James Milroy b1798 (Scot)-d1869 (Iowa), lived in Galt 1824-56 **Young (197)**: Alex'r Adair advertises farm for sale near Ayr in October 1845 **ASI**: James Milroy bought S½ in 1847, sold largest piece of it, including a house, to Alexander Adair (b.1811 in Scotland, d1871 N. Dumfries) in 1847-53 **Census** 1851 (Village of Galt A71/18-27): James Milroy and family living in 2-storey roughcast house in town; Alexander Adair & family plus two others in a 1-storey frame and log house **Tremaine Map** (1861): house occupied by Alexander Adair **Census** 1891: John Adair & family in a stone house
BHR 06	1101 Dundas Street South, Cambridge, Ontario Lot 4/X, North Dumfries	Brick foursquare with hipped roof, dormers on four sides, full verandah	Listed, "Landmark series" Cambridge	As above, CHL 05
BHR 07	1111 Dundas Street South, Cambridge, Ontario Lot 4/X, North Dumfries	Single-storey frame house with hipped roof, now covered in modern siding	Listed, Cambridge	As above, CHL 05
BHR 08	1151 Dundas Street South, Cambridge, Ontario Lot 4/X North Dumfries	1½-storey frame Ontario cottage, 3-bay façade with centre gable, now covered in modern siding, windows and door all replaced	Listed, Cambridge	As above, CHL 05; this is very likely the house that appears on the Tremaine map (1861) at the east edge of Lot 4/X north side of Dundas Street

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Type/Site no.	Property Description	Resource Description	Heritage Status	Citations/Notes
CHL 09	1261 Dundas Street South, Cambridge, Ontario Lot 3/X Dumfries	1½-storey stone, set well-back from the road	Listed, "Landmark series" Cambridge	**WRG:** Milroy (1797-1869) arrived in Canada 1827 **ASI:** John Milroy bought S½ in 1830; Milroys held it until end of abstract film record **Census** 1851 (A9/24): 1½-storey stone house
CHL 10	1791 Dundas Street South, Cambridge, Ontario Lot 2/X North Dumfries	Yellow brick Italianate house	Listed, Cambridge	**Young (33):** Daniel McArthur arrived at Shade's Mills in 1817 **Census** 1851 (A15/23): Donald *(sic)* McArthur & family (including son William, 24), 1-storey frame house; came to Canada before 1827 **Tremaine Map** (1861): Daniel McArthur in S½ Lot 2/X & N pt 2/IX **Waterloo Gazetteer** (1867): William McArthur in Lot 2/X **Census** 1871: William McArthur listed as head of the house, father Daniel, 70, is also living in the residence **Census** 1891: lists 2-storey brick house
CHL 11	2371 Dundas Street South, Cambridge, Ontario Lot 1/IX North Dumfries	Stone house not visible from the road	Further investigation warranted	**Young (33):** Donald Fraser arrived at Shade's Mills in 1817 **WRG**: Donald Fraser b.1791/2 in Canada **ASI:** Donald Fraser bought it in two parcels 1844 & 1853 **Census** 1851 (A33/19-28): log & frame, 1-storey **Tremaine Map** (1861): Daniel Fraser (?) **Waterloo Gazetteer** (1867): Donald Fraser Jr. in Lot 1/IX **Census** 1891: Donald is gone, no mention of the property
CHL 12	2591 Dundas Street South, Cambridge, Ontario N½ Lot G/VII, Beverly	2 storey stone house with a hipped roof , 3-bay symmetrical façade, single panel door with flat transom and sidelights	"of interest" Township of North Dumfries Municipal Heritage Committee	**ASI**: Granted to John Clement 1807 (absentee); sold to George Ramsey in 1809; John Grieg in 1816; John, Donald, William McKenzie in1824; N½ to Thomas George Chapman 1836; Richard Bond 1844 **Census** 1851 (A9/24-30, B29/10): Richard Bond, b. Scotland ca 1785, emigrated after 1837, log house, N½ 200ac **Gregory Map** (1859): R.S.H. Bond **Atlas** (1875): Henry Bond **Census** 1891: Henry Bond, 2-storey stone house with 8 rooms
BHR 13	795 Franklin Boulevard, Cambridge, Ontario Lot 6/XII North Dumfries	1-storey "Regency," full verandah; windows, doors, shutters all new	Designated, Part IV, Cambridge	**NDMHC**: "former Wolfe Farm" **Tremaine Map** (1861): looks like "Taylor"
Potential CHL 14	1688 Morrison Road, North Dumfries, Ontario Spt Lot H in the Gore/VIII, Beverly	Unknown: this farmstead is located approximately on the site of a residence indicated on the Atlas map (1875)	Further investigation warranted	**Census** 1851: Archibald McColl (165ac in H, Ept), Peter McColl (100ac in H, Wpt), both in log houses (A9/31-34, B29/10, 11) **Gregory Map** (1859): Peter McColl in Wpt, Morris Shellard in Ept **Atlas** (1875): Estate of McColl
BHR 15	5 Ripplewood Drive, Cambridge, Ontario Lot 1/X North Dumfries	Cobblestone house	Listed, Cambridge	**WRG:** James Keachie b. Scotland ca 1797, d. North Dumfries btwn 1842-51 **ASI:** First owner in 1820 is James Keachie **Census** 1851(A15/16): Widow Elizabeth Keachie, farmer, with sons James & Angus Keachie, in a frame 1½-storey house **Tremaine Map** (1861): J.A. and A.S. Keachie **Census** 1891: Alexander Keachie, wife and two adult sons in a frame house **ASI**: Property stayed in the family until at least 1907
BHR 16	29 Ripplewood Drive, Cambridge, Ontario Lot 1/X North Dumfries	"White sided farmhouse"	Listed, Cambridge	As above, BHR 15
BHR 17	105 Ripplewood Drive, Cambridge, Ontario Lot 1/X North Dumfries	"White sided farmhouse"	Listed, Cambridge	As above, BHR 15
Potential BHR 18	Robinson Road, North Dumfries Lot I in the Gore/IX Beverly	Unknown: this farmstead is located approximately on the site of a residence indicated on the Atlas map (1875)	Further investigation warranted	**Census** 1851 (B29/20): Martin Nicol, 100 ac **Gregory Map**: (1859): Martin Nichol **Atlas** (1875): G.G. Nichol **Census** 1891: George G. Nichol , 1½-storey frame house, 6 rooms

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Type/Site no.	Property Description	Resource Description	Heritage Status	Citations/Notes
BHR 19	1337 Shellard Side Road, Township of North Dumfries Npt Lot 1/VIII Beverly/Wentworth	2½-storey stone house with hipped roof, symmetrical 3-bay façade, single panel door has flat transom and sidelights and a semi-circular porch with classical detailing; large 12/12 sash windows on the ground floor; second storey has round-arched central doorway with sidelights opening onto balcony with iron railing, flanked by windows slightly smaller than ground floor; attic storey windows are located in 3-light dormers all four sides, ornamented with pilasters; soffits feature modillions	Listed, North Dumfries	**Census** 1851 (B29/24): Morris Shellard, 100ac **Gregory Map** (1859): Shellard in the N½ Lot 1/VIII and E½ Lot H/VIII, no house indicated **Atlas** (1875): M. Shellard, house on the location **ASI**: dates house 1894 **Census** 1891: Morris Shellard (39), 2-storey stone house with 8 rooms
BHR 20	1481 Shellard Side Road, Township of North Dumfries S½ Lot 1/IX, Beverly/Wentworth	Italianate detailing, 2-storey stone house with hipped roof, rear wing; side hall plan; windows and front entrance have segmental arched windows; single panel door with transom; wooden frieze with paired brackets supporting the eaves	Listed, North Dumfries	**Census** 1851 (B29/23): James Henderson, 100ac S½ Lot 1/IX **Gregory Map** (1859): Robert Henderson **Census** 1871: Robert Henderson, 35 b. Scotland farmer **Atlas** (1875): Robert Henderson **Cornell** (68): between 1881-89 Henderson sold to John Caldwell of the Galt Nursery **Census** 1891: 2-storey stone house is occupied by James Brown & family, arrived from England between 1882-87
Potential CHL 21	16 54 Shellard Side Road, Township of North Dumfries N½ Lot I in the Gore/IX, Beverly/Wentworth	Unknown: this farmstead is located approximately on the site of a residence indicated on the Atlas map (1875)	Further investigation warranted	**Census** 1851 (B29/20): Martin Nicol **Gregory Map** (1859): Robert Turnbull **Atlas** 1875: Robert Turnbull **Census** 1891: Robert Turnbull, 1½-storey frame house, 6 rooms

Ridout Surveyor General, survey Gen. Office York 2nd February 1821. Library & Archives Canada, NMC 3114.

Tremaine, George R., and G.M. Tremaine. *Tremaine's Map of the County of Waterloo, Canada West.* Toronto: Geo. R. & G.M. Tremaine, 1861.

United Provinces of Canada. *Census of 1851*, Library and Archives Canada, Discover the Collection: Census of Canada, http://www.collectionscanada.gc.ca/census/index-e.html.

Waterloo Region Generations. http://generations.regionofwaterloo.ca/index.php, consulted July & August, 2012.

Wilson, Bruce G. "William Dickson," "Robert Hamilton," "Thomas Clark" (with Bruce A. Parker), *Dictionary of Canadian Biography*, online edition. http://www.biographi.ca/index-e.html, consulted 31 July 2012.

Young, James. *Reminiscences of the Early History of Galt and the Settlement of Dumfries, in the Province of Ontario.* Toronto: Hunter, Rose & Company, 1880.

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APPENDIX D

DRAFT ARCHAEOLOGY EXISTING CONDITIONS TECHNICAL REPORT

DRAFT ARCHAEOLOGY EXISTING CONDITIONS TECHNICAL REPORT

East Boundary Road Corridor Study
City of Cambridge and Township of North Dumfries
Regional Municipality of Waterloo

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Project No.: 33016837
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EXECUTIVE SUMMARY

URS Canada Inc. was contracted by the Regional Municipality of Waterloo to conduct an Archaeology Existing Conditions Technical Report for the East Boundary Road Corridor Study Area, located within the eastern edge of the City of Cambridge and western edge of the Township of North Dumfries. The purpose of the East Boundary Road Corridor Study is to identify an alignment for the proposed East Boundary Road Corridor that alleviates traffic along the existing arterial roads, accommodates future growth of the City of Cambridge and Region of Waterloo. The work will be undertaken as a Schedule C project under the Municipal Class Environmental Assessment process. In advance of project initiation, a number of pre-project works, including this Archaeology Existing Conditions Technical Report, are being undertaken to determine if refinements can be made to the Study Area.

The Study Area is currently 1,672 hectares in size and is generally bounded by Avenue Road/Gore Road to the north, Franklin Boulevard/Regional Road 36 to the west, Dundas Street South/Highway 8 to the south, and 500 m east of Shellard Side Road to the east.

This Archaeology Existing Conditions Technical Report documents the geographic, archaeological and land use history of lands identified within the Study Area in order to assess the potential for them to contain archaeological resources. No optional property inspection was undertaken for this assessment. Instead, satellite imagery, aerial photographs, thematic and historic maps and past archaeological reports, including the Regional Municipality of Waterloo Archaeological Facilities Master Plan, were reviewed in order to evaluate the Study Area's archaeological potential.

The results of the archaeology existing conditions assessment indicate that, while some of the lands within the existing Study Area appear to have been disturbed by past development, much of the Study Area has high archaeological potential. This is based on the presence of historic homesteads, the proximity of historic roads, certain physiographic features, a relatively high number of known archaeological sites inside or within 1 kilometre of the Study Area, the fact that most of this area is not disturbed and is indicated as having potential on the Regional Municipality of Waterloo Archaeological Master Plan.

Therefore, URS Canada Inc. makes the following recommendations:

1) Areas within the Study Area requiring confirmation of archaeological potential should be subject to Stage 1 archaeological assessment property inspection prior to selection of the preferred alternative (**Figure 8**).

2) Once an alignment for the proposed East Boundary Road Corridor is identified, a Stage 2 archaeological assessment should be conducted wherever the proposed impacts will occur in areas of archaeological site potential within the Study Area (**Figure 8**).

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East Boundary Road Corridor Study
City of Cambridge and Township of North Dumfries, Regional Municipality of Waterloo

3) The Stage 2 archaeological assessment will be conducted by a licensed consultant archaeologist and will follow the requirements set out in the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

URS CANADA INC.

PROJECT PERSONNEL

Project Director:	Charlton Carscallen, M.A. [P088]
Project Administrator:	Glenn Kearsley, M.A [P123]
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1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

In 2012, URS Canada Inc. was contracted by the Regional Municipality of Waterloo to conduct an assessment of the archaeology existing conditions within the East Boundary Road Corridor Study Area. The Study Area is 1,672 hectares in size and is generally bounded by Avenue Road/Gore Road to the north, Franklin Boulevard/Regional Road 36 to the west, Dundas Street South/Highway 8 to the south, and by survey 500 m east of Shellard Side Road to the east (**Figure 1**).

The purpose of the East Boundary Road Corridor Study is to identify an alignment for the proposed East Boundary Road Corridor that alleviates traffic along the existing arterial roads, accommodates future growth of the City of Cambridge and Region of Waterloo, complies with Regional and Provincial policies, and minimizes impacts on transportation, the natural environment, cultural environment, and socio-economic environment (including development). The work will be undertaken as a Schedule C project under the Municipal Class Environmental Assessment process. In advance of project initiation, a number of pre-project works, including this Archaeology Existing Conditions Technical Report, are being undertaken to determine if refinements can be made to the Study Area.

This Archaeology Existing Conditions Technical Report involves background research to describe the geography, land use history, previous archaeological fieldwork and current condition of the lands within the Study Area in order to evaluate their archaeological potential and to support recommendations for Stage 2 survey for all or parts of these parcels. For this Archaeology Existing Conditions Technical Report, no optional property inspection was conducted. Instead, satellite imagery, aerial photographs, thematic and historic maps and past archaeological reports were analyzed in order to evaluate the archaeological potential of the East Boundary Road Corridor Study Area.

In addition to the above sources, the archaeological master plan for the Regional Municipality of Waterloo was also reviewed by URS Canada. This report, entitled "*The Regional Municipality of Waterloo Archaeological Facilities Master Plan*", was developed in 1989 and covers the City of Cambridge and the Townships of North Dumfries and Beverly. According to the updated master plan, large sections of the Study Area have archaeological potential (Region of Waterloo 2012).

The Archaeology Existing Conditions Technical Report was carried out under the project direction of Charlton Carscallen [professional archaeological licence #P088] and the archaeological licence of Glenn Kearsley [P123] (URS Canada) in accordance with the provisions of the *Ontario Heritage Act (2005*) and with the *Standards and Guidelines for Consultant Archaeologists (2011a),* formulated by the Ministry of Tourism, Culture and Sport (MTCS). This report presents the results of the background research and makes several recommendations.

Archaeology Existing Conditions Technical Report
East Boundary Road Corridor Study
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1.2 HISTORICAL CONTEXT

Pre-Contact Period

A detailed discussion of the pre-contact temporal and cultural affiliations that are represented in the Region of Waterloo is provided in the archaeological master plan for the Region (Region of Waterloo 1989). A brief summary is provided here in order to incorporate some updated archaeological findings that have occurred since that report.

Although the Region of Waterloo was exposed after glacial retreat as early as 13,000 B.C., it was not until 10,400 B.C. to 8,000 B.C. that land access routes opened up allowing the first inhabitants, known as Paleo-Indians, into the area. Paleo-Indians were widely scattered, nomadic groups that occupied the sub-tundra-like environment that prevailed in southwestern Ontario during that time. Past research indicates that these groups likely followed big game (such as Caribou) across the landscape, preferring to camp on high ground, immediately adjacent to water sources, such as glacial lakes or spillways, where smaller game and plant foods would have been harvested.

Due to the relative antiquity of Paleo-Indian sites, all that remains at their occupations are stone tool fragments and their characteristic spear points known as "fluted points". At least two Paleo-Indian sites have been identified in the Region of Waterloo indicating these early inhabitants were in the area. The first is the Steckle site (AiHc-36), a small campsite near the City of Kitchener (Mayer, Pihl and Poulton 1988:1 as cited in the Region of Waterloo 1989). The second is the Alder Creek site (AiHd-75), a small campsite located along the Highway 7/8 corridor between Kitchener and New Hamburg (Timmins 1994).

The subsequent Archaic period (8,000 B.C. to 800 B.C.) is characterized by a warming climate and a temperate forest environment in which was cris-crossed by streams and rivers and surrounded by large fresh water lakes that would have supported many species of fish, shorebirds and mammals. Small hunting and gathering bands (20-50 people) utilized the lake shores during the spring and summer months, then broke into family groups and moved inland for the fall and winter to hunt and trap. During the Archaic Period, tool assemblages consisted of both chipped and ground/polished stone implements indicating a wider variety of activities, such as fishing, woodworking and food preparation/grinding, were now taking place.

Numerous Archaic sites have been identified in the Region of Waterloo including 13 within 1 kilometre of the Study Area, and 3 sites inside the Study Area itself (**Table 2**). These sites are described as either campsites or 'findspots' where isolated Archaic projectile points were found. The three Archaic Period sites within the Study Area include the AiHb-317 site (an Early Archaic findspot dating to 8,000 B.C. – 6,000 B.C. (Fisher 2002)), the AiHb-162 site (a Late Archaic findspot dating to 2,500 B.C. – 800 B.C. (MPA 1990a)) and the GRCA site (AiHb-15) (an "Archaic" campsite (Redmond n.d.)).

The Archaic period was followed by the Woodland period (800 B.C. to A.D. 1650) which is subdivided into three phases. The Early Woodland period (circa 900 – 400

B.C.) is characterized by the introduction of pottery as a means of food production / storage and an increase in regional trade networks. This trading of exotic goods, such as obsidian, silver, copper and sea shells persists into the Middle Woodland period (circa 300 B.C. to A.D. 900) when horticulture was introduced to southern Ontario resulting in a more sedentary lifestyle in seasonal villages, and more elaborate burial ceremonies – including the construction of large, earthen mounds. The Late Woodland period (circa A.D. 900 - 1650) is marked by the establishment of palisaded villages (often containing dozens of longhouse structures), intensified agriculture and an increase in regional warfare.

A total of 5 Early Woodland sites have been identified within 1 kilometer of the Study Area (**Table 2**). All of these were isolated findspots. The Middle Woodland period is represented by three sites that are located within 1 kilometer of the Study Area, and include two campsites and one campsite / burial. Two Late Woodland sites, including a campsite and a findspot have been identified within 1 kilometer while one isolated findspot has been recovered from the Study Area itself (Fisher 2004).

Post-Contact / Historical Overview of the Townships of North Dumfries and North Beverly

The Study Area straddles the border of what were the historic Townships of North Dumfries and North Beverly. During the aftermath of the Revolutionary War, Sir Frederick Haldimand, the Governor of Quebec, issued the Haldimand Proclamation on October 25, 1784 granting to the Six Nations on behalf of the Crown all of the land for six miles either side of the Grand River from the mouth to the headwaters in compensation for loss of land in the United States, and in recognition of their services during the conflict (Johnston 1964: 147-149). Years of confusion ensued over whether the Six Nations were allowed to lease or sell parts of the grant as they chose, finally resolved in 1798 when six blocks of land of various sizes were parcelled off for sale. Block 1 eventually became Dumfries Township (**Figure 5**).

Hon William Dickson (1769-1846) was born in Dumfries, Scotland, and immigrated to Quebec in 1785. In 1790 he settled in Queenston, in the Niagara region. In 1803 Dickson was granted a license to practice law, and in this capacity he carried out the legal work necessary for the Six Nations to sell blocks of land. In payment for these services, he was given 4,000 acres at the mouth of the Grand River. For several years Dickson tried to buy other land on speculation from the Six Nations, including Block 1. Finally, in 1811, Thomas Clark bought Block 1, apparently with his cousin William Dickson as a silent partner (**Figure 5**).

Dickson hoped to sell lots to a "higher class" of immigrants from the United States, but was prevented by prohibitions brought on by the rumbling hostilities. Consequently he focused his attentions on Scotland, specifically Dumfries, Roxburgh and Selkirk, encouraging leading Scots to consider the potential of Upper Canada. Unlike the tenant crofters who were being cleared from the Highlands around this time, these were people of some means and education.

In 1816, when full ownership of Block 1 was registered in Dickson's name he hired Absalom Shade (1793-1862), a builder by trade, as his agent and manager in Dumfries. They travelled to the vicinity that summer to choose a site for establishing mills on the Grand River (Absalom Shade's map, **Figure 7**). They selected the site

where the town of Galt grew up around the mills, but its original name was Shade's Mills. The place was densely forested and difficult to access. The Dundas Road was put through in 1795, but it was a crude affair and often impassable. Immigration was slow at first, but gradually increased in the 1820s (Young 1880:34)

By 1819, when the first bridge over the Grand was built (Young 1880:34), there was sufficient critical mass that a meeting was held on January 4th to choose Town and Parish officers, a clerk, two assessors, a collector, two wardens, four pathmasters and a pound keeper (Young 1880:134). The following year there were 10 buildings in Shade's Mills: Shade's house & store, a sawmill (1817), Dumfries Mill (1818), three log houses, a shanty, distillery (1820), the blacksmith's shop and the ruins of an old mill. A tavern opened in 1821.

By 1825 growth at the town site began to accelerate, with Scottish immigrants becoming concentrated in the north of Dumfries. William Dickson moved his family from Queenston to Shade's Mills, where he busied himself providing support for new arrivals to ensure that their ventures in clearing land and making a home were successful. This was not wholly altruistic – prosperous farmers made good business sense for Dickson, who had made his original fortune outfitting and provisioning Loyalists and the military establishment at Niagara.

John Galt (1789-1839) passed through Shade's Mills in 1827, on his way to oversee the construction of a road on to Guelph. Galt was another of Dickson's connections from his schooldays in Scotland, and was also engaged in settling British immigrants in central Ontario as an agent of the Canada Company. The post office was established at Shade's Mills at about this time and was designated Galt in his honour. Soon after, the village became known as Galt as well.

Roads and transportation in general were problematic. The Dundas Road was nearly impassable through the Beverly swamp, and travellers were frequently harassed by wolves. An endeavour by Absalom Shade indicates how difficult it was to transport goods to markets: he set up a system using flat-bottomed "arks" rafted together to float goods down the Grand River to Lake Erie and through the Welland Canal to Lake Ontario at Port Dalhousie (approximately twice the distance as the Dundas Road). He operated this service from 1831-34. The construction of a macadamized road from Dundas to Waterloo was begun in 1837, finally overcoming the dangers of the Beverly Swamp.

Other signs of growth and progress include the construction of a Township Hall (1839), and the election of the first township officers to the Gore District Council, as well as school commissioners (1842). The first township newspaper, the Dumfries Courier was established in 1844, followed by the Galt Reporter.

Galt was incorporated as a village under the Municipal Act in 1850, and the township elected five councillors. The population at this time was about 2,000. The community was served by two newspapers, the Tory Dumfries Reporter, and the Grit Galt Reformer. North and South Dumfries were split in 1852, with the south part of Brant County, the north with Waterloo.

The abundance of water power at Galt and Ayr formed the basis of a number of industries, including mills, foundries and manufacturing. At Ayr, John Watson

opened the Ayr Agricultural Works in 1848, manufacturing farming implements at the site of the old Mudge mills. This business grew into an internationally known company, exhibiting its wares and winning awards at the Centennial Exposition in Philadelphia (1876) and at the Paris World's Fair (1878). Galt experienced an economic and industrial boom through the mid-19th century, rapidly developing a wide range of manufactured goods, tanneries, woollen mills, carriage works, breweries – even a paper collar factory.

Galt became known as the "Manchester of Canada" (Young 1880:230). The Waterloo Gazetteer described Galt in 1867 as the largest town in the county, and "in regard to its establishments, one of the principal in the Province." "The surrounding area is remarkable for its fertility" with unlimited water power, and the employment of stone in building which abounds in the neighbourhood gives it a remarkably substantial appearance (**Figure 6**) (Province of Ontario 1869:164).

North Dumfries is described as "well-watered by the Grand and the Ninth Rivers and Cedar Creek. The soil is generally a light sandy loam, the surface rolling and well adapted for wheat and other cereals. Great attention is paid to stock raising, and a number of Durham cattle and Leicester sheep have been imported. The timber is a mixture of pine, oak, beech, maple, elm, cherry, basswood and cedar. Limestone of a superior quality is abundant. There are at present in the Township five flouring mills, two woollen mills and several sawmills" (Irwin 1867:1).

The part of Beverly Township that has been annexed to North Dumfries and is now part of the Study Area developed in much the same pattern as its neighbour.

In 1854-55 the Great Western Railway connected Galt with its main line at Harrisburg. Sir Allan McNabb had turned the first sod at a ceremony in Galt, followed by a ball in 1852. In 1880 the Credit Valley Railway was completed through North Dumfries as well.

Study Area Specific Land Use

Both illustrated historic atlases as well as textual documentary sources were consulted when researching the history of the Townships of North Dumfries and North Beverly and compiling the specific land use history for each lot in the Study Area.

Due to the paucity of information in the *Illustrated Atlas of the Township of North Dumfries, Waterloo County (1881)*, additional sources were drawn upon when compiling the land use history for lots in North Dumfries. The *1851 Census of Canada* was cross-referenced with the *Gazetteer & Directory of the County of Waterloo, 1867* to ensure accuracy and gain a broader picture of the land use history of North Dumfries in the 19th Century. **Table 1**, below, illustrates the land use history of each lot in the Study Area for both North Dumfries and North Beverly, according to these 19th Century sources. Historic County Atlases from the 19th Century indicate that the Study Area was largely used for agricultural purposes at that time (**Figures 4 and 6**). Documentary sources collaborate that farming was the profession of the majority of inhabitants from the time of settlement of the area in the early 19th into the 20th Century (Young 1880, Cornell 1889, and Census of Canada 1851 and 1871).

TABLE 1: HISTORIC LAND OWNERS AND FEATURES LOCATED WITHIN THE STUDY AREA

Township	Concession	Lot	Owner/Resident(s)	Illustrated or Recorded Features
North Dumfries	XII (South ½)	1	Andrew Turnbull*	1 storey frame structure*
		2	No information	
		3	John A McKenzie*	2 storey frame structure*
		4	James Nicol*	Log structure*
		5	Archibald Henderson, Miller, & Jessie Thornton*	Saw Mill*
		6	No information	
North Dumfries	XI	1	William Thompson (North part)*	Log structure*
		2	Arthur Burnett (South part) *	Log house*
		3	No information	
		4	Scrimger (South part)*	1 storey frame structure*
		4 & 5	Archibald Henderson, with widowed mother (North part)*	Stone house*
North Dumfries	X	1	Widow Elizabeth Keachie, farmer, & James and Angus Keachie, & John Moffat*	Two 1 ½ storey frame structures (associated with Moffat and Keachie)*
		2	Wm McArthur+, & Jared Swan*	Homestead illustrated+, log house*
		3	John Milroy*	House illustrated+, 1 ½ storey stone structure*
		4	William Tait (North part)*	1 storey frame*
		4	Alex'r (Middle section)*	
		5	No information	
North Dumfries	IX	1	Donald Fraser*	
North Beverly	X	J	Jno. Gwyne+	Homestead and orchard+

		1	D. Gillies+	Homestead and orchard+
North Beverly	IX	I	Rob. Turnbull (North part), & G.G Nichol (South part).+	Both Turnbull and Nichol have a homestead and orchard illustrated on their property. +
		1	Jas. Cunningham (North part), & R. Henderson (South part). +	Both Cunningham and Henderson have a homestead and orchard illustrated on their property. +
North Beverly	VIII	H	McColl Estate (West part), & T. Shillard (East middle part). +	Both McColl and Shillard have a homestead and orchard illustrated on their property. +
		1	M.Shillard (North part), & R.Young (South part). +	Both Shillard and Young have a homestead and orchard illustrated on their property. +
North Beverly	VII	G	Henry Bond (North part). +	Homestead and orchard
		1	G. Lloyd	Nothing mapped in Study Area

* From the 1851 Census, cross-referenced with 1867 directory
+ From the *Illustrated Atlas of the Township of North Dumfries, Waterloo County* (1881) and *Illustrated Atlas of the Township of North Beverly, Wentworth County* (1875) (**Figure 4**).

Historic Features of Interest

A historic family plot is located in Lot 4, Concession X, in the Township of North Dumfries. This plot is known as the Anderson Cemetery and has been identified as a significant resource by the Hamilton branch of the Ontario Genealogical Society (MIS020). The Anderson Cemetery holds the remains of Elizabeth Ann Anderson, born April 18th 1828, died September 2nd 1843, and her sister Elzina or Ilzina Anderson, born 1836 and died June 12th, 1843. They were the two oldest daughters of William T and Annie Anderson (nee McMullen), who first moved to Lot 4 in 1831 (Fisher 2004b:8). The cemetery is currently under the care of the Cambridge Golf and Country Club (Fisher 2004b:9).

1.3 ARCHAEOLOGICAL CONTEXT

Description of the Study Area

As noted, the Study Area is 1,672 hectares in size and is generally bounded by Avenue Road/Gore Road to the north, Franklin Boulevard/Regional Road 36 to the west, Dundas Street South/Highway 8 to the south, and by survey 500 m east of Shellard Road. Overall, the Study Area is comprised of open cultivated fields, low-lying wetlands, floodplains, densely vegetated forests, and fallow (pastoral) lands (**Figures 1-2**). Some commercial / industrial development occupies the western section.

The Study Area is bisected east-west by two main roads including Clyde Road in the north and Main Street/Old Beverly Road in the central section. Numerous small roads intersect with these main roads and provide access to the various commercial, industrial and residential areas in the western section of the Study Area. Shellard Road runs north-south in the eastern section. The Region of Waterloo Waste Management Facility is in the north-central section of the Study Area, at the east end of Savage Drive. The Canadian Pacific Railway line traverses the northern section and a hydro corridor runs north-south through the centre of the Study Area. The Shade's Mill Conservation Area and associated reservoir occupy the northwest corner of the Study Area. Rural farm and residential dwellings are scattered across the remainder of the Study Area.

Determining Archaeological Potential

Based on past archaeological findings in the province, the Ministry of Tourism, Culture and Sport has identified criteria that can be used to evaluate a property's archaeological potential. These criteria are related to various geographic and cultural-historic features which would have influenced land / resource use and settlement by past peoples (MTCS 1997, 2011a), and include such characteristics as:

- previously known archaeological sites within 300 metres of the subject property
- water sources within 300 metres of the subject property, including primary (lakes, rivers, streams, creeks), secondary (springs, marshes, seasonal creeks and streams) and past (glacial shorelines or relic stream channels) water sources
- elevated topography (drumlins, knolls, plateaux)
- areas of well-drained, sandy soils
- distinctive land formations that might have been special or spiritual places (waterfalls, rock outcrops, caves, mounds and promontories and their bases)
- resource areas (animal migratory routes, spawning areas, raw material or plant procurement locations) and early Euro-Canadian industry (fur trade, logging and mining)
- areas of early Euro-Canadian pioneer settlement and / or transportation routes (trails, roads, railways, portage routes, wharf or dock complexes)
- properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations

By determining if one (or any) of these criteria are present, archaeologists are able to estimate whether a property has low, moderate or high potential for containing archaeological remains.

Physiography of the Study Area

The East Boundary Road Corridor Study Area is located in the Waterloo Hills Physiographic Region of Ontario (Chapman and Putnam 1984: 136). This region is composed of sandy hills and kames with outwash sands occupying the hollows in between. Numerous kettle lakes and small swamps are scattered across these hilly areas. Adjoining the hilly region are the extensive alluvial terraces of the Grand River which also contain sand and gravel (Chapman and Putnam 1984: 136). The majority of soils in the Waterloo Hills Physiographic Region are well drained and consist of Grey Brown Luvisolic soils that are classified in four series: Guelph, Harriston, Dumfries and Waterloo (Chapman and Putnam 1984: 136).

The original vegetation in this area consisted of pine and hardwoods such as maple, beech, wild cherry and red oak. Much of this however, has been cleared in favour of mixed field crop and livestock agriculture (Chapman and Putnam 1984: 136-137).

The soil within the Study Area itself is comprised mainly of the Dumfries Series (Class 4) which consist of relatively stone-free, well drained loam soils that are characteristic of areas where steep and complex slopes prevail (Presant and Wicklund 1971: 29). The Study Area also has pockets of well drained sandy loam, and fine-grained sandy loams that are well to imperfectly drained and occupy moderately sloping landscapes (Presant and Wicklund 1971: 25).

Topography ranges from relatively flat to gently rolling with numerous ponds and marsh / wetlands scattered throughout (**Figure 2**). Two main water courses traverse the Study Area and include Mill Creek along the northern edge and Moffet Creek through the central section. Both of these have low-lying floodplains associated with them as they drain into the Grand River approximately 2 kilometers to the west.

Registered Archaeological Sites

In order to compile an inventory of archaeology resources for the Study Area, three sources of information were accessed: the site record forms for registered sites housed at the Ministry of Tourism, Culture and Sport, published and unpublished documentary sources.

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTCS. This database contains archaeological registered sites within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on longitude and latitude. A Borden block is approximately 13 kilometers east to west, and approximately 18.5 kilometers north to south. Each Borden block is referred by a four letter designation and sites located within the block are numbered sequentially as they are found. The East Boundary Road Corridor Study Area is located within the *AiHb* Borden block.

According to the OASD (MTCS 2011b), 56 archaeological sites have been previously registered within 1 kilometre of the Study Area including 14 sites that are actually inside the Study Area itself. All 56 sites are summarized in **Table 2**. As can be seen, both Aboriginal and Euro-Canadian sites have been identified. The presence of these registered sites inside or within a 1 kilometre of the Study Area indicates

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that this area was very attractive for past occupation and indicates that there is potential for both Aboriginal and Euro-Canadian sites within the Study Area.

TABLE 2: REGISTERED ARCHAEOLOGICAL SITES INSIDE OR WITHIN 1KM OF THE STUDY AREA

Borden	Site Name	Cultural Affiliation	Site Type	Researcher	Comments
AiHb-104	n/a	Undetermined	Undetermined	MPA	No further work required
AiHb-105	n/a	Aboriginal	Undetermined	MPA	Small number of chert flakes. No further work required.
AiHb-160	Asp	Aboriginal: Early Woodland / Late Archaic	Findspot	ASI, 1990	1 stemmed projectile point. No further work required.
AiHb-162	n/a	Aboriginal: Late Archaic	Findspot	MPA, 1990a	1 stemmed Lamoka point and 1 chert flake. ***In Study Area***.
AiHb-171	Big Tree	Aboriginal: Middle Archaic	Campsite	D. Knight, 1992a	To be impacted by subdivision development. Appropriate mitigative options recommended.
AiHb-172	Radtke	Aboriginal: Early Woodland	Findspot	D. Knight	
AiHb-174	Dundas	Euro-Canadian	Stone house	D. Knight, 1992b	LACAC has designated this structure. Historic artifacts were found from disturbed soil around site.
AiHb-193	Zeppelin	Aboriginal	Undetermined	Fisher, 2002	No further work required.
AiHb-196	Oak	Aboriginal: Pre-Contact	Campsite	Fisher, 2002	No further work required. ***In Study Area***
AiHb-197	Small	Aboriginal: Pre-Contact	Lithic Scatter	Fisher, 2002	No further work required. ***In Study Area***
AiHb-198	Moffat Knoll	Aboriginal: Pre-Contact	Campsite	Fisher, 2002	No further work required. ***In Study Area***
AiHb-199	Hawk	Aboriginal: Pre-Contact	Lithic Scatter	Fisher, 2003	No further work required. ***In Study Area***
AiHb-200	Daffodill	Aboriginal: Pre-Contact & Euro Canadian	Lithic Scatter & Homestead	Fisher, 2003	No further work required. ***In Study Area***
AiHb-201	Anderson	Euro Canadian	Homestead	Fisher, 1998	LACAC Point of Interest. Burnt down in 1970's. ***In Study Area***
AiHb-226	Gawitrha	Aboriginal: Archaic	Campsite	Fisher, 2001	No further work required
AiHb-27	Townline Road 1	Aboriginal: Undetermined	Findspot	Janusas, 1986a	These roadways were graded at the time of survey and were not named.
AiHb-85	Grandy	Aboriginal: Late Woodland	Findspot	Janusas, 1989a	N/A ***In Study Area***
AiHb-15	GRCA	Aboriginal: Archaic	Campsite	J. Redmond (Reference N/A)	Field is slated for development. Disturbance from sewer main just n of site. ***In Study Area***
AiHb-28	Townline Road 2	Aboriginal: Undetermined	Findspot	Janusas, 1986a	These roadways were graded at the time of survey and were not named.
AiHb-283	N/A	Aboriginal: Early Archaic	Findspot	Fisher, 2002	No further work required. ***In Study Area***
AiHb-29	Townline Road 3	Euro-Canadian	Midden	Janusas, 1986a	Only the perimeter of roadways examined. It is possible further historic evidence such as a structure may be located within the woodlot. Roadways were graded at time of survey but not named.
AiHb-30	Deercrest	Aboriginal: Late Archaic Euro-Canadian	Station, chipping Historic hearth	Janusas, 1986b	Original report suggested a Paleo/Early Woodland multicomponent occupation. Site is

Borden	Site Name	Cultural Affiliation	Site Type	Researcher	Comments
					now considered a Late Archaic single occupation with the presence of an insignificant historic hearth.
AiHb-31	N/A	Aboriginal: Late Archaic	Findspot	Williamson, 1986	Site to be destroyed in 1987.
AiHb-317	N/A	Abroiginal: Late Woodland	Findspot	Fisher, 2004	No further work required. ***In Study Area***
AiHb-32	N/A	Aboriginal: Undetermined	Findspot	Williamson, 1986	Site to be destroyed in 1987.
AiHb-33	N/A	Aboriginal: Woodland, Early Meadowood	Findspot	Williamson, 1986	Site to be destroyed in 1987.
AiHb-337	N/A	Euro-Canadian	Midden & stone structure	Fisher, 2008	Archaeologically significant. Recommended that the limits of AiHb-337 be indicated as a No Impact Zone and be fenced off & avoided during construction activities.
AiHb-34	N/A	Aboriginal: Early Woodland	Findspot	Williamson, 1986	Site to be destroyed in 1987.
AiHb-35	Franklin	Aboriginal: Archaic?	Campsite	Williamson, 1986	Site to be destroyed in 1987.
AiHb-59	Lamplight Village	Euro-Canadian	Homestead	ASI, 1988a	Site to be destroyed by development. Mitigation before development. ***In Study Area***
AiHb-60	Moffat Creek	Aboriginal: Undetermined	Findspot	ASI, 1988b	Site to be destroyed by development.
AiHb-61	N/A	Aboriginal: Late Archaic	Findspot	ASI, 1988b	Site to be destroyed by development.
AiHb-7	Mill Creek	Aboriginal: Late Woodland	Campsite	George MacDonald, 1961	N/A
AiHb-84	Birch	Aboriginal: Undetermined	Findspot	Arch. Res. Assess.	Requires additional surface collection, followed by test excavation. Site lies in field which was ploughed for the first time in over 23 yrs.
AiHb-194	Civiero	Aboriginal: Pre-Contact	Campsite	Fisher, 1998, 2002	No further work required. ***In Study Area***
AiHb-87	N/A	Aboriginal: Undetermined	Campsite	Poulton, 1990b	No further work required
AiHb-88	N/A	Aboriginal: Middle Woodland	Campsite and burial	Poulton, 1990b	No further work required
AiHb-89	N/A	Aboriginal: Late Archaic	Campsite	Arch. Res. Assess.	No further work required
AiHb-90	N/A	Euro-Canadian	Farmstead	Poulton, 1990b	No further work required
AiHb-91	N/A	Aboriginal: Late Archaic	Campsite	Poulton, 1990b	No further work required
AiHb-92	N/A	Aboriginal: Undetermined	Lithic scatter	Poulton, 1990b	No further work required
AiHb-93	N/A	Aboriginal: Middle Woodland	Campsite	Poulton, 1990c	No further work required
AiHb-94	N/A	Aboriginal: Undetermined	Campsite	Poulton, 1990b	No further work required
AiHb-95	N/A	Aboriginal: Undetermined	Campsite	Poulton, 1990c	No further work required
AiHb-106	N/A	Aboriginal: Late Archaic	Findspot	Poulton, 1990?	Municipal Plan Ref. No. 30T-87008
AiHb-107	N/A	Aboriginal: Undetermined	Campsite?	Poulton, 1990?	No further work required
AiHb-108	N/A	Aboriginal: Undetermined	N/A	Poulton, 1990?	No further work required
AiHb-109	N/A	Aboriginal: Undetermined	N/A	Poulton, 1990?	No further work required
AiHb-120	N/A	Aboriginal: Archaic and	Campsite	ASI, 1997	No further work required

Borden	Site Name	Cultural Affiliation	Site Type	Researcher	Comments
		Woodland	(seasonal)		
AiHb-195	Hedgerow	Aboriginal: Pre-Contact	Campsite	Fisher, 1998	No further work required. ***In Study Area***
AiHb-153	Mark Antony	Aboriginal: Middle Archaic	N/A	ASI 1990	No further work required
AiHb-154	Brutus	Aboriginal: Middle Archaic	Findspot	ASI 1990	No further work required
AiHb-155	Britpark I	Aboriginal: Archaic and Middle Woodland	Campsite?	ASI 1990	No further work required
AiHb-157	Caesar	Aboriginal: Archaic	Findspot	ASI 1990	No further work required
AiHb-158	Cleopatra	Aboriginal: Meadowood and Early Woodland	Findspot	ASI 1990	No further work required
AiHb-159	Serpent	Aboriginal: Undetermined	N/A	ASI 1990	No further work required

Previous Archaeological Research

According to the Ontario Archeological Site Database (OASD) there are seventeen reports dealing with land in or within a minimum of 50 meters of the Study Area. Copies of these reports were requested from MTCS in order to gain a thorough understanding of the archaeological history of the Study Area. Of the seventeen reports, eleven were available to access. These eleven reports have been reviewed and are summarized here.

1. A Stage 1 archaeological assessment was conducted on a southern section of the Study Area in 2007 (ASI 2007). While this assessment covered a large area south of Cambridge for the South Boundary Road Corridor Study, approximately 200 hectares overlaps the present East Boundary Road Corridor Study Area (**Figure 3**) in an area north of Dundas Street South from Studiman Road in the east to Branchton Road to the west. According to this Stage 1 assessment, there is moderate to high potential for archaeological sites within these 200 hectares (ASI 2007: 7).

2. In 2009, *Parker Archaeological Consulting* was contracted to conduct a Stage 1 and 2 Archaeological Assessment on part of Lot 1, Concession VIII, in the Township of North Dumfries. This property is located within the Study Area. At the time of assessment, the Study Area was made up of active agricultural fields and a woodlot, which were assessed through pedestrian survey and test pitting, respectively, both at 5 meter intervals. Some late 19th to mid-20th century artifacts were found, but were the result of modern refuse scattering and not deemed to be significant. The assessment concluded that no further work was required in the Study Area (Parker Archaeological Consulting 2009).

3. In 2007, *AMEC Earth & Environmental* conducted a Stage 1 and 2 Archaeological Assessment on part of Lot 1, Concession IX, in the Township of North Dumfries. The Study Area for the assessment lies approximately 100 meters beyond the limits of our Study Area, just west of Dundas St. South, in Lot 1 of Concession IX. At the time of the assessment, the Study Area was

comprised of agricultural fields totaling 36 acres. The Study Area was assessed through pedestrian survey at 5 meter intervals. No artifacts were found and the assessment concluded that no further work was required in the Study Area (AMEC 2007).

4. In 2008, *Detritus Consulting* conducted a Stage 1 and 2 Assessment on part of Lot J, Concession X, in the Township of North Dumfries. This property is located within our Study Area. At the time of assessment the property was a combination of active agricultural fields, residential lawn and garden, and bush. The property was assessed through pedestrian survey and test pitting, both at 5 meter intervals. No artifacts were found, and the assessment concluded that no further work was required in the Study Area (Detritus Consulting 2008).

5. In 2006, *Detritus Consulting* conducted a Stage 1 and 2 Assessment on part of Lot 1, Concession X, in the Township of North Dumfries. This property is located within our Study Area. At the time of assessment the property was comprised of a woodlot, residential lawn, and wetland. The property was assessed through test pitting at 5 meter intervals. No artifacts were found, and the assessment concluded that no further work was required in the Study Area (Detritus Consulting 2006).

6. In 2004, *Fisher Archaeological Consulting* conducted a Stage 1 and 2 Assessment on part of Lot 3 in Concession X, in the Township of North Dumfries. The total area surveyed was 1.2 hectares, and is a golf course comprised of areas of fairway (manicured lawn), rough shrubbery, and fill. This property is located within our Study Area. The property was assessed through test pitting at 5 meter intervals in areas of high potential and 10 meter intervals in areas of moderate potential. No artifacts were found, and the assessment concluded that no further work was required in the Study Area (Fisher 2004b).

7. In 1997, *Material Culture Management Inc.* conducted a Stage 1 and 2 Assessment on part of Lot H in Concession VIII, in the Township of North Dumfries. The total area surveyed was 1.62 hectares. This property is located within our Study Area, and was comprised of residential lawn. The property was assessed through test pitting at 5 meter intervals. The assessment recovered one Onondaga flake fragment, an isolated findspot. Test pitting around the flake fragment was intensified and no other artifacts were recovered. The assessment concluded that no further work was required in the Study Area (Material Culture Management Inc. 1997d).

8. In 1997, *Material Culture Management Inc.* conducted a Stage 1 and 2 Assessment on part of Lot 1 in Concession IX, in the Township of North Dumfries. The total area surveyed was 3 hectares. This property is located within our Study Area, and was comprised of a residence and barn, a manicured lawn, agricultural fields, and a wetland. The high potential portions of the property were assessed by pedestrian survey at 5 meter intervals. The assessment recovered two isolated find spots, both pieces of non-descript ironstone. Intensified searching around both findspots did not result in the recovery of any more artifacts. The assessment concluded that no further work was required in the Study Area (Material Culture Management Inc. 1997c).

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9. In 1997, *Material Culture Management Inc.* conducted a second Stage 1 and 2 Assessment on part of Lot 1 in Concession IX, in the Township of North Dumfries. The total area surveyed was 3 hectares. This property is located within our Study Area, and was comprised of a residence, driveway, pool and outbuildings, residential lawns, and some wooded area. The moderate and high potential portions of the property were assessed by test pitting at 5 meter intervals, while areas of low potential were tested at 10 meter intervals. The assessment recovered three isolated find spots; the first was interior glazed earthenware, the second was an Onondaga tertiary thinning flake, and the third was domestic mammal ribs, wire, and floral ironstone transferware. Intensified searching around all three findspots did not result in the recovery of any more artifacts. The assessment concluded that no further work was required in the Study Area (Material Culture Management Inc. 1997b).

10. In 1997, *Material Culture Management Inc.* conducted a Stage 1 and 2 Assessment on part of Lot 1 in Concession X, in the Township of North Dumfries. The total area surveyed was 8.77 hectares. This property is located within our Study Area, and was comprised of a residence, barn, pool, and other outbuildings, pasture with a garden, and a manicured lawn. The high potential portions of the property were assessed by test pitting at 5 meter intervals, while low potential areas were not tested. No artifacts were recovered, and the assessment concluded that no further work was required in the Study Area (Material Culture Management Inc. 1997a).

11. Lastly, in 1996 *Material Culture Management Inc.* conducted a Stage 1 and 2 Assessment on part of Lot 1 in Concession IX, in the Township of North Dumfries. The total area surveyed was 4 hectares. This property is located within our Study Area, and was comprised of a several buildings; two residences and their outbuildings, two ponds and landscaped lawns, fallow fields and an additional field used as a paddock. While most of the area had been subject to a high degree of disturbance, the high potential portions of the property were assessed by test pit survey at 5 meter intervals. The assessment recovered one isolated find spot, a single Onondaga flake. Intensified searching around the flake findspots did not result in the recovery of any more artifacts. The assessment concluded that no further work was required in the Study Area (Material Culture Management Inc. 1996).

2.0 SUMMARY AND ANALYSIS

The results of the archaeology existing conditions assessment indicate that, while some of the lands within the existing Study Area have been disturbed by past development, much of the Study Area has archaeological potential. This potential includes both Euro-Canadian and Aboriginal resources. Indeed, a review of archaeological assessments in the areas immediately adjacent to and within the Study Area indicates that the Waterloo Region in general and the Study Area in particular have an extremely rich archaeological inventory.

The mapping in the Regional Municipality of Waterloo Archaeological Facilities Master Plan (Region of Waterloo 1989: 28-32) was initially done in 1989 using base maps and some, but not all, of the features indicating archaeological potential now included in the *2011 Standards and Guidelines for Consultant Archaeologists* (MTCS 2011:17-18). Subsequent archaeological research in the province combined with more detailed mapping and satellite imagery indicate that areas once deemed to have no archaeological potential may, in fact, contain additional features of archaeological potential not visible on the original base maps that were used.

It must be noted that in preparing this report a field review was not completed such that areas of previous disturbance cannot be documented at this time. However, a review of the archaeological potential mapping in the Region of Waterloo Archaeological Master Plan (**Figure 8**) confirms the high level of potential for the Study Area. This is also supported by the background research that indicates the presence of historic homesteads, the proximity of historic roads, certain physiographic features, a relatively high number of known archaeological sites inside or within 1 kilometre of the Study Area, and the fact that most of this area is not disturbed.

It must be clarified that there are areas on the Master Plan map that have no colouring to indicate the status of archaeological potential. In some cases it may be that these represent permanently wet areas or locations where there has been previous disturbance. However, in several cases these areas are in proximity to features that are associated with high archaeological potential such as historic travel routes, rivers/streams and previously identified archaeological sites. Consequently, for the purposes of this study, these areas are treated as requiring confirmation of archaeological potential through field review (marked with green cross-hatching in **Figure 8**).

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3.0 RECOMMENDATIONS

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

1) Areas within the Study Area requiring confirmation of archaeological potential (marked in green cross-hatching in **Figure 8**) should be subject to Stage 1 archaeological assessment property inspection prior to selection of the preferred alternative. The property inspection should be conducted by a licensed consultant archaeologist in accordance with Section 1.2 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

2) Once an alignment for the proposed East Boundary Road Corridor is identified, a Stage 2 archaeological assessment should be conducted wherever the proposed impacts will occur in areas of archaeological site potential within the Study Area (**Figure 8**).

3) The Stage 2 archaeological assessment will be conducted by a licensed consultant archaeologist and will follow the requirements set out in the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

The above recommendations are subject to Ministry of Tourism, Culture and Sport approval, and it is an offence to alter any archaeological site without Ministry of Tourism, Culture and Sport concurrence. No grading or other activities that may result in the destruction or disturbance of an archaeological site are permitted until notice of Ministry of Tourism, Culture and Sport approval has been received.

4.0 STANDARD CLAUSES

a) This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licencing in accordance with Part IV 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.

b) 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 a 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 Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

c) 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*.

d) 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.

Documentation related to the archaeological assessment of this project will be curated by URS Canada 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, the Ontario Ministry of Tourism, Culture and Sport any other legitimate interest groups.

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5.0 REFERENCES CITED

AMEC
2007 *Stage 1 and 2, North Dumfries Energy Centre, 2384 Dundasy Street South, Part of Lot 1, Concession IX, Township of North Dumfries, Regional Municipality of Waterloo*. Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

Archaeological Research Associates (ARA)
(30T-87008) Part of Lots 6, R.P. 1385. RMW, Waterloo and MCC, Toronto. Field Notes. Report on File with the Ministry of Tourism, Culture and Sport.

Archaeological Services Inc. (ASI)
1988a *Archaeological Assessment Shades Mills Village 30T-87058, MCCHO.* Report on File with the Ministry of Tourism, Culture and Sport.
1988b *Archaeological Assessment Moffat Creek Village, City of Cambridge, MCC HO.* Report on File with the Ministry of Tourism, Culture and Sport.
1997 *"Stage 3 Archaeological Resource Assessment of the Britpart I and II Sites (AiHb-155, 156), Proposed Myers Road Subdivision (30T-88044), Part of Lots 4 and 5, Concession 9, City of Cambridge, Regional Municiplity of Waterloo, Ontario."* Report on File with the Ministry of Tourism, Culture and Sport.
1990 *"A.R.A. of Proposed Meyers Road Subdivision 30T-88044, Part of Lots 4 & 5, Conc. 9, City of Cambridge, R.M. of Waterloo".* Report on File with the Ministry of Tourism, Culture and Sport.

Canada
1851 & 1871 *Census of Canada, passim.* Library and Archive Canada, "Discover the Collection: Census of Canada," http://www.collectionscanada.gc.ca/census/index-e.html

Chapman, L.J. and F. Putnam
1984 *The Physiography of Southern Ontario.* Ontario Geological Survey, Special Volume 2. Ontario Ministry of Natural Resources, Toronto.

Cornell, John A.
1889 *The Pioneers of Beverly*. Printed by Roy Somerville at the Office of the True Banner, Dundas Ontario.

Detritus Consulting
2007 *Stage 1 and 2, Pearce Property, Part Lot 1 Concession x, North Dumfries Township, Regional Municipality of Waterloo*. Report on File with the Ministry of Tourism, Culture and Sport. CP# 2005- 014, CIF#P017-098-2006

2008 *Stage 1 and 2, Heatherington Property, Part of Lot J, Concession x, Township of North Dumfries, Regional Municipality of Waterloo.* Report on File with the Ministry of Tourism, Culture and Sport CP#2008-021, PIF blacked out.

Fisher, Jacqueline

1998 *Stage 1 and 2 A. A., Part of Lots 4 and 5, Conc. 10, Zeppelin Community, Formerly 30T-93014, City of Cambridge, R.M. of Waterloo, ON.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

2001 *Final Report: Gawitrha Site (AiHb-226), Stage 4: Excavation, Part of Lot 4, Con.9, R.M. of Waterloo, City of Cambridge.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

2002 *Final Report: Green Gate Subdivision (formerly the Zeppelin Subdivision), Part of Lots 4 and 5, Conc. 10, City of Cambridge, R.M. of Waterloo.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

2003 *Final Report: Stage 3, Part of Lots 4 and 5, Conc. 10, City of Cambridge, R.M. of Waterloo.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

2004 *Final Report: Stage 1: Background, Stage 2: Assessment & Stage 3 Testing – Proposed Fabbian Subdivision, Part of Lot 4, Conc. 10, R.M. of Waterloo, City of Cambridge.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

2004b *Stage 1 and 2, Cambridge Golf & Country Club Severances (A,B & C) Part Lot 3, Concession 10, Township of North Dumfries, Regional Municipality of Waterloo.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

2008 *Report on the Moffat Creek Trunk Sanitary Sewer Design Stage 1: Background Research & Stage 2: Assessment.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

Gregory, Hardy

1859 Map of the County of Wentworth, Canada West. Library and Archives Canada. MIKAN No. 3989219. Online, Retrieved August 10, 2012.

Irwin, W.H., and George E. Burnham

1867 *Gazetteer & Directory of the County of Waterloo, 1867.* Toronto: Irwin & Burnham, Publishers

Janusas, Scarlett

1986a *Site Record Forms, R.M. of Waterloo.* Report on File with the Ministry of Tourism, Culture and Sport.

1986b *The Archaeological Excavations and Analysis of the Multi-Component Deercrest Site (AiHb-30) in the City of Cambridge, MCC HO.* Report on File with the Ministry of Tourism, Culture and Sport.

Archaeology Existing Conditions Technical Report
East Boundary Road Corridor Study
City of Cambridge and Township of North Dumfries, Regional Municipality of Waterloo

1989 *An Archaeological Resource Assessment of Subdivision Plan 30T-81021, Pt. of Lot 1, Conc. 12, City of Cambridge, RMW.* Report on File with the Ministry of Tourism, Culture and Sport.

Johnston, Charles M., ed.

1964 *The valley of the Six Nations : a collection of documents on the Indian lands of the Grand River.* Toronto: Champlain Society.

Knight, D.

1992a *Archaeological Mitigation Big Tree Site (AiHb-171) Deercrest Estates Subdivision, City of Cambridge, R.M. of Waterloo (30T-88008, -99011).* Report on File with the Ministry of Tourism, Culture and Sport.

1992b *Archaeological Assessment Test Square Excavations, 80 Dundas Street East, City of Cambridge, R.M. of Waterloo".* Report on File with the Ministry of Tourism, Culture and Sport.

MacDonald, George

1961 LOCATION: ASC Archives Description: MS. No. 158.

Mayer, B., R. Pihl and D. Poulton

1988 Mitigative Excavations at the Steckle Site (AiHc-36), City of Kitchener, Ontario. On file at the Regional Municipality of Waterloo.

Mayer, Poulton & Associates (MPA)

1990a *ARA Survey Draft Plan of Subdivision 30T-91012, City of Cambridge, R.M. of Waterloo.* Report on File with the Ministry of Tourism, Culture and Sport.

1990b *Archaeological Assessment and Mitigations Draft Plan of Subdivision 30T-87008, City of Cambridge, R.M. of Waterloo.* Report on File with the Ministry of Tourism, Culture and Sport.

1990c *Field Notes, RMW, Waterloo and Archaeological Resource Assessment of (30T87008) of Part of lots 6, R.P. 1385.* Report on File with the Ministry of Tourism, Culture and Sport.

Material Culture Management Inc.

1996 *Stage 1 and 2, Reunions Property Severance, Part of Lot 1, Concession 9, Township of North Dumfries, Regional Municipality of Waterloo. Project 96-519-01.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

1997a *Stage 1 and 2, Muretic Property Severance, Part of Lot 1, Concession 10, Township of North Dumfries, Regional Municipality of Waterloo. File 97-519-02.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

1997b *Stage 1 and 2, Figueiredo Property Severance, Part of Lot 1, Concession 9, Township of North Dumfries, Regional Municipality of Waterloo. File 97-519-03.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

1997c *Stage 1 and 2, Carter Property Severance, Part of Lot 1, Concession 9, Township of North Dumfries, Regional Municipality of Waterloo. File 97-519-07.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

1997d *Stage 1 and 2, Davidson Property Severance, Part of Lot H, Concession 8, Township of North Dumfries, Regional Municipality of Waterloo. File 97-519-08.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

Ministry of Tourism, Culture and Sport (formerly Ministry of Culture)

1997 *Conserving A Future For Our Past: Archaeology, Land Use Planning & Development in Ontario.* Toronto: Cultural Programs Branch, Archaeology & Heritage Planning Unit.

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

2011b Sites within a One Kilometre Radius of the Project Area Provided from the Ontario Archaeological Sites Database, August 3, 2012.

Page & Smith.

1875 *Illustrated historical atlas of the county of Wentworth, Ont.* Toronto: Page & Smith

Parker Archaeological Consulting

2009 *Stage 1 and 2, Proposed Severance 1077 Shellard Road, Part of Lot 1, Conc.8, Township of North Dumfries (Formerly Beverly Township) Regional Municipality of Waterloo.* Report on File with the Ministry of Tourism, Culture and Sport. PIF blacked out.

Parsell, H.

1881 *Illustrated atlas of the county of Waterloo.* Toronto: H. Parsell & Co.

Presant, E.W. and R.E. Wicklund

1971 *The Soils of Waterloo County*. Report No.44 of the Ontario Soil Survey. Research Branch, Canada Department of Agriculture.

Province of Ontario

1869 *Province of Ontario Gazetteer and Directory for 1869.* Library and Archives Canada "Canadian Directories: Who was Where database" Online, Retrieved August 14: http://www.collectionscanada.gc.ca/databases/canadiandirectories/ 001075-100.01-e.php

Region of Waterloo

2012 Archaeological Potential: East Boundary Road Corridor Provided from the Cultural Heritage Specialist, Region of Waterloo, August 13, 2012.

1989 *The Regional Municipality of Waterloo Archaeological Facilities Master Plan.* Archaeology Division, Planning and Development Department. Region of Waterloo.

Ridout, Thos.

1821 *Plan showing the Lands granted to the Six Nation Indians, situated on each side of the Grand River, or Ouse, commencing on Lake Erie, containing about 674,910 Acres. Thos. Ridout Surveyor General, survey Gen. Office York 2nd February 1821*. Library and Archives Canada, MIKAN No. 4129506 Online, Retrieved August 10, 2012.

Shade, Absalom

1820 *Map Showing the Upper Section of the Grand River and Surrounding Area, drawn by Absalom Shade of Dumfries (Galt), from the Information of Travellers Who have Explored this Part of the Province.* Online as part of the Brock University *Historical Maps of Niagara* Collection. Retrieved August 1, 2012. Available: http://catalogue.library.brocku.ca/search/a?searchtype=Y&searcharg=nmc+map+3113&SORT=D

Timmins, Peter

1994 Alder Creek: A Paleo-Indian Crowfield Phase Manifestation in the Region of Waterloo, Ontario. *Midcontinental Journal of Archaeology, Vol.19, No.2 pp. 170-197.*

Tremaine, G.M

1861 *Map of the County of Waterloo, Canada West.* Library and Archives Canada, MIKAN No. 3993115 Online, Retrieved August 10, 2012.

Williamson, Ronald

1986 *An Archaeological Resource Assessment of Subdivision 30T-76040, City of Cambridge*. Report on File with the Ministry of Tourism, Culture and Sport.

Young, James.

1880 *Reminiscences of the Early History of Galt and the Settlement of Dumfries, in the Province of Ontario.* Toronto: Hunter, Rose & Company

APPENDIX 1: MAPS AND PHOTO PLATES

URS

Archaeology Existing Conditions Technical Report
East Boundary Road Corridor Study
City of Cambridge and Township of North Dumfries, Regional Municipality of Waterloo

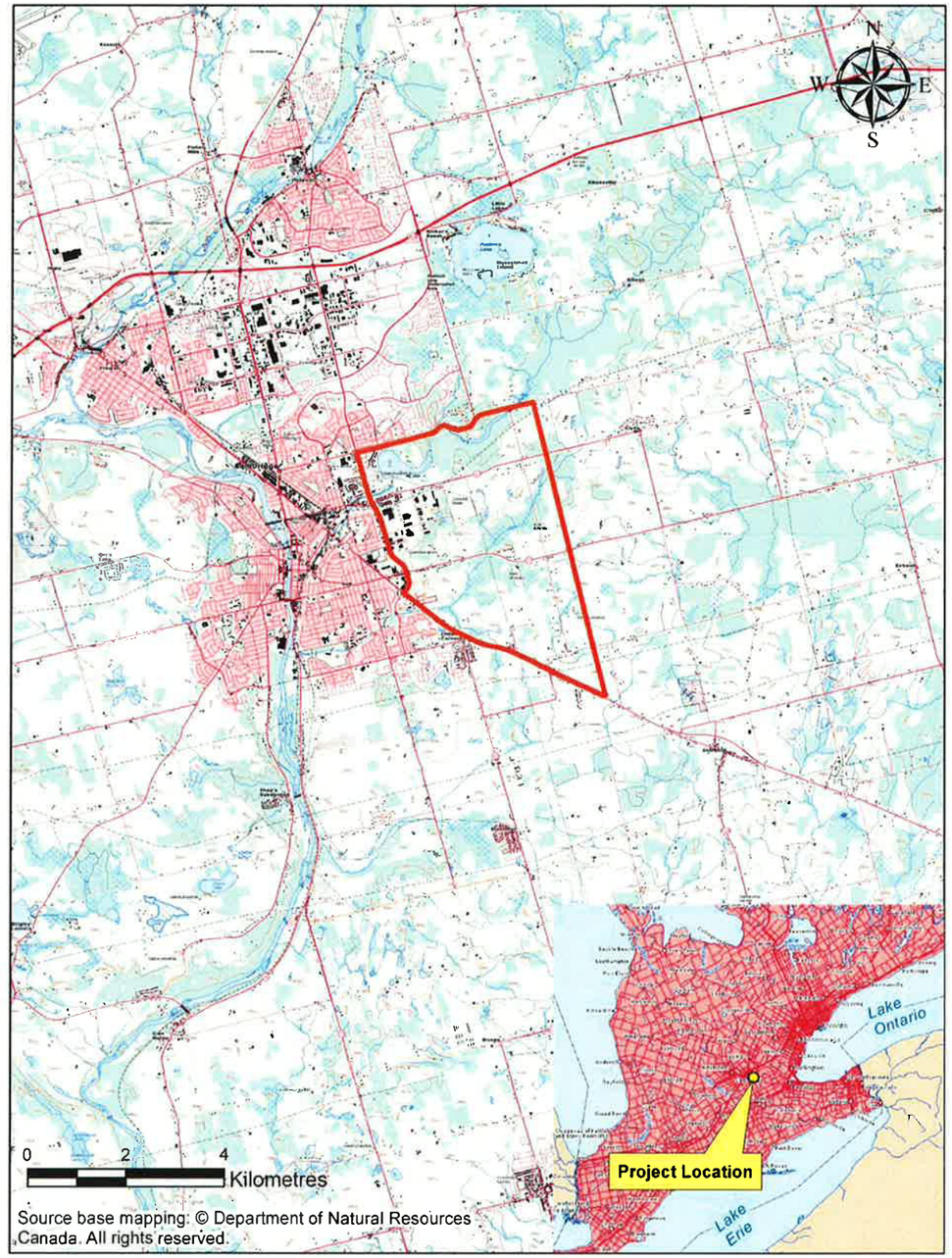


FIGURE 1: LOCATION OF STUDY AREA

FIGURE 2: TOPOGRAPHY OF STUDY AREA

FIGURE 3: LOCATION OF 2007 STAGE 1 ARCHAEOLOGICAL ASSESSMENT THAT OVERLAPS PRESENT STUDY AREA

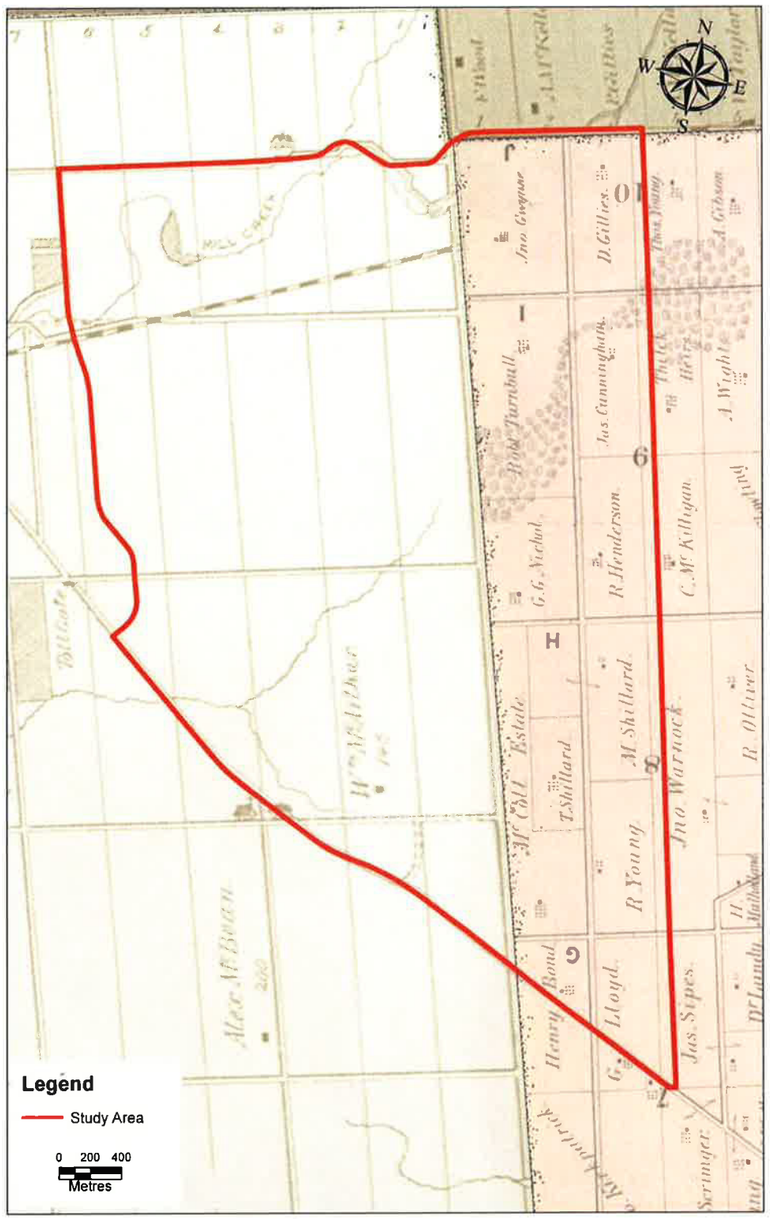


FIGURE 4: STUDY AREA OVERLAID ON THE ILLUSTRATED ATLAS OF THE COUNTY OF WENTWORTH, TOWNSHIP OF NORTH BEVERLY (1875), AND COUNTY OF WATERLOO, TOWNSHIP OF NORTH DUMFRIES (1881)

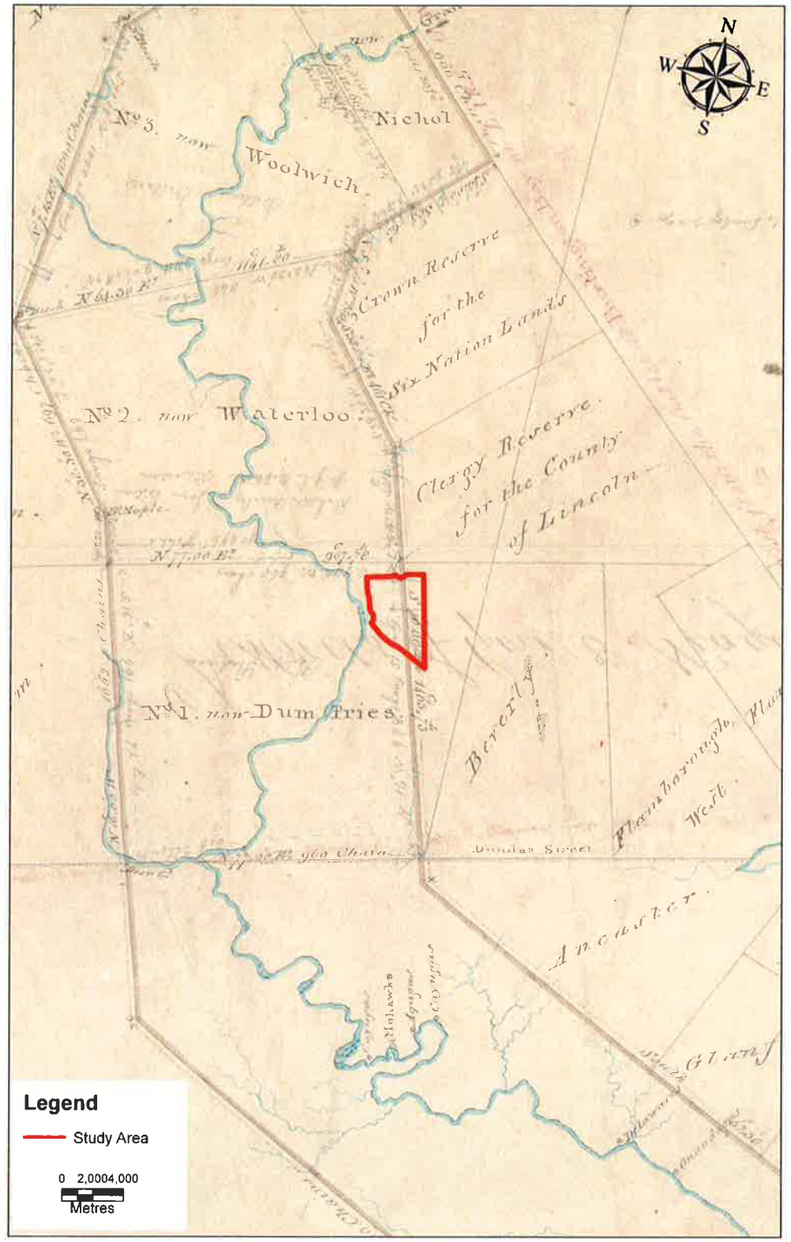


FIGURE 5: STUDY AREA OVERLAID ON PLAN SHOWING LAND GRANTED TO THE SIX NATION INDIANS, 1821 (THOS. RIDOUT)



FIGURE 6: STUDY AREA OVERLAID ON THE TREMAINE MAP OF THE COUNTY OF WATERLOO, 1861, AND HARDY GREGORY'S MAP OF THE COUNTY OF WENTWORTH, 1859

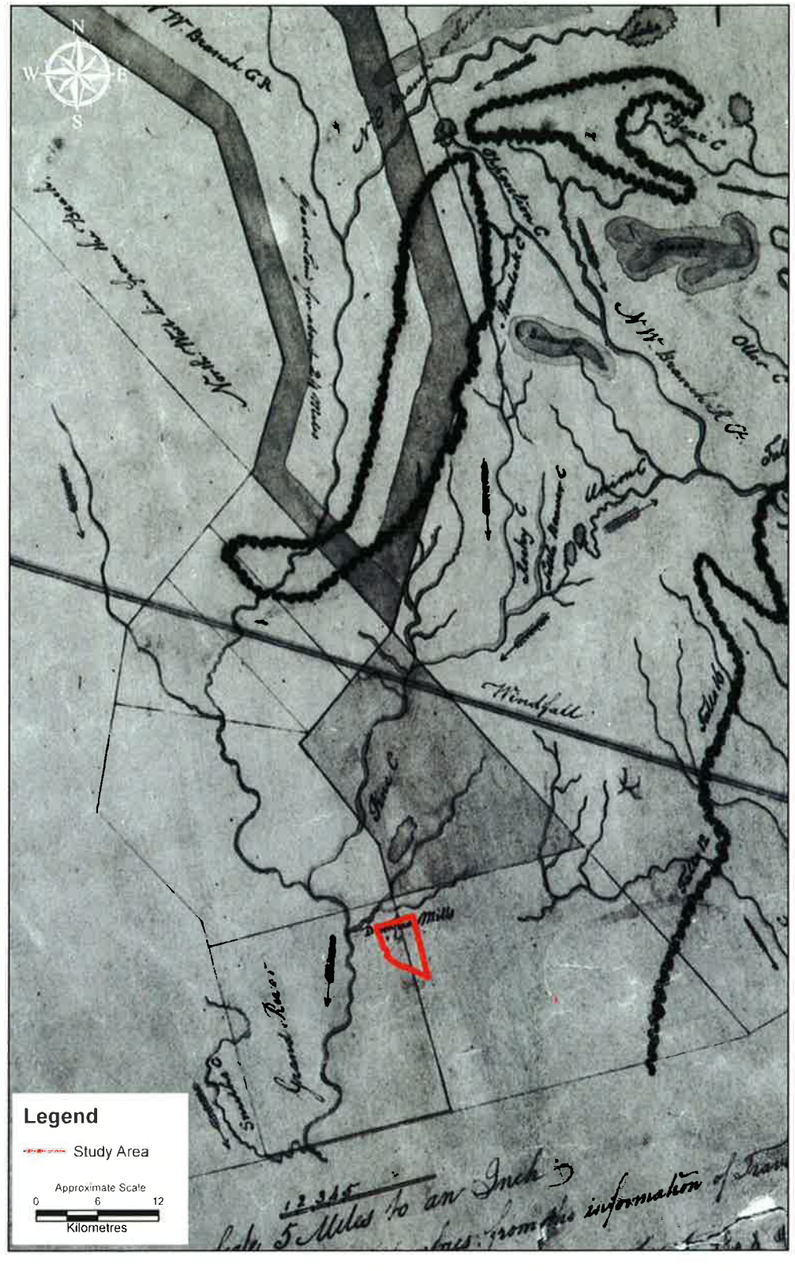


FIGURE 7: STUDY AREA OVERLAID ON 1820 MAP OF DUMFRIES, WATERLOO AND WOOLWICH (ABSALOM SHADE)

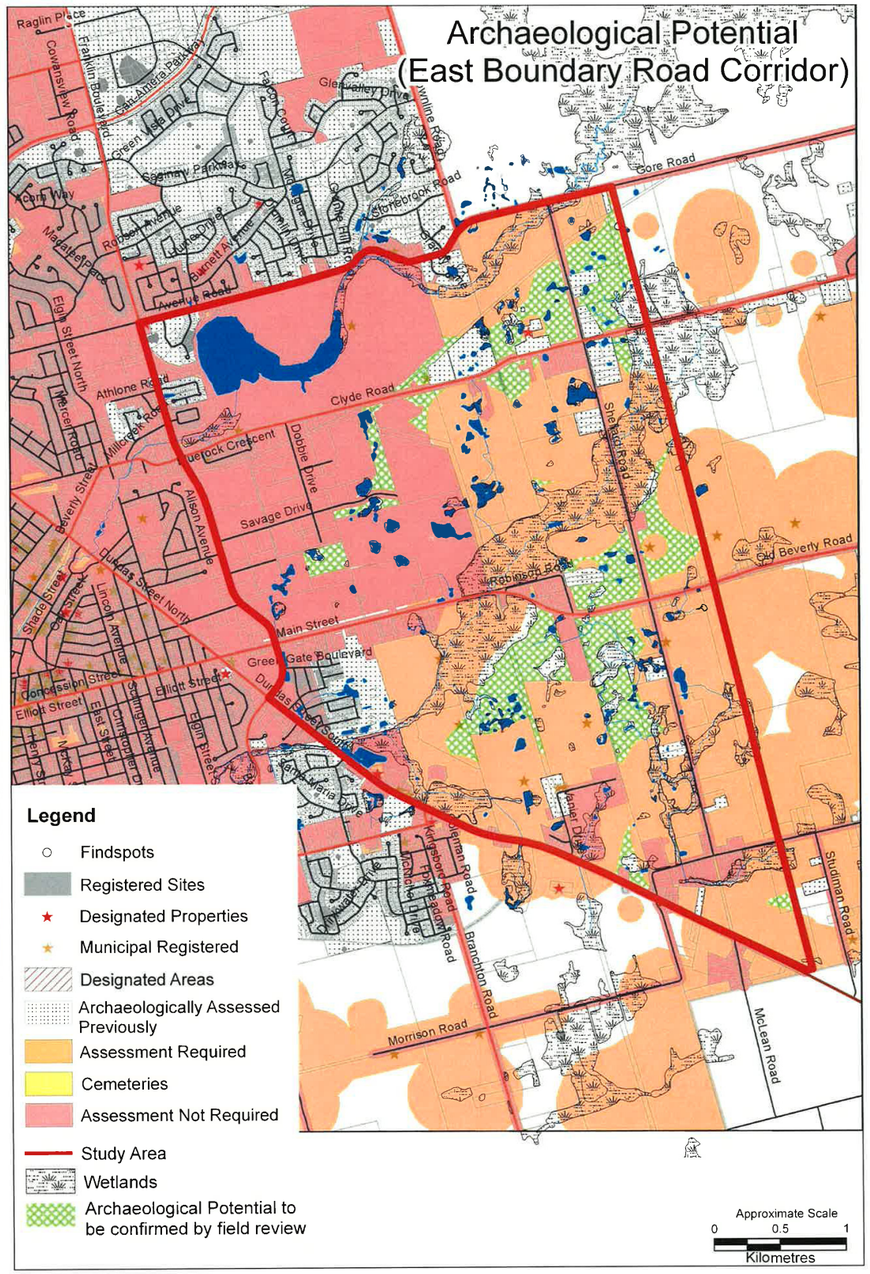


FIGURE 8. UPDATED MAP SHOWING AREAS OF ARCHAEOLOGICAL POTENTIAL (REGION OF WATERLOO 2012).

MTE 25 YEARS 1985-2010 More Than Engineering

APPENDIX E

CONTAMINANT OVERVIEW STUDY

August 7, 2012
MTE File: 36900-100

Mr. Dave Hallman
Consultant Project Manager
MTE Consultants Inc.

Dear Mr. Hallman:

Re: East Boundary Lands
Contaminant Overview Study

INTRODUCTION

The purpose of this Contaminant Overview Study (COS) is to provide preliminary screening of areas of potential environmental contamination within the Study Area for the proposed East Boundary Road Corridor (EBRC Study Area) in the City of Cambridge and the Township of North Dumfries.

The EBRC Study Area encompasses the area of south Cambridge that is bounded to the north by Avenue Road, to the west by Franklin Boulevard, to the south by Dundas Street South and to the east by the lot line dividing Lots 1 and 2 at Concession 7, 8, 9 and 10 in the Township of North Dumfries. The COS includes all properties within the EBRC Study Area as well as properties within a further 250 meter (m) radius of the EBRC Study Area. Refer to **Figure 1** for the COS Study Area.

ENVIROMENTAL SCREENING METHOLOGY

Preliminary screening information on properties that may have contributed to, or have the potential to contribute to environmental contamination within the COS Study Area was obtained from the following sources:

- EcoLog Environmental Risk Information Service (ERIS) Report for the "East Boundary Road Corridor." The report contains a summary of environmental and historical information compiled from government and private sources for all properties within the COS Study Area.
- Historical aerial photographs for the Study Area, provided by the University of Waterloo, National Air Photo Library and the Region of Waterloo.
- Ontario Base Map (OBM), provided by the Ontario Ministry of Natural Resources.
- Visual assessment of properties within the COS Study Area from public roads. No properties were accessed during this COS.

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520 Bingemans Centre Drive
Kitchener, Ontario N2B 3X9
Phone: 519-743-6500
Fax: 519-743-6513
www.mte85.com

Properties located within the COS Study Area were included in the reviewed sources and were contemplated in the preliminary screening exercise. Based on the information presented, properties within the COS Study Area were categorized as having very high, high, moderate, low or very low (Risk Rating A through E, respectively) potential to contribute to environmental contamination in the COS Study Area. It is important to note that only those properties that are located within the COS Study Area have been screened in this assessment (EBRC Study Area + 250 m buffer).

The criteria used to assign a risk rating to each property are summarized below.

Risk Rating A – Very High Potential to Contribute to Environmental Contamination

Properties screened as having a very high potential to contribute to environmental contamination are identified with red shading on **Figure 2.** A very high risk rating was assigned when, based on a collective review of records, a property met one or more of the following criteria:

- Confirmed soil or groundwater contamination at the property based on listings for:
  - Ministry of the Environment (MOE) Orders for remedial work related to soil or groundwater contamination;
  - Certificates of Approval for Remedial Actions (i.e. related to soil vapour or groundwater extraction);
  - Records of Site Condition with a Risk Assessment and Certificate of Property Use;
  - Certificates of Property Use indicating remaining high level contamination in soil or groundwater; and
- Occupancy that suggests the use of large quantities of liquid hazardous materials on site.

It is MTE's experience that properties assigned a Risk Rating A (Very High Potential to Contribute to Environmental Contamination) would require both a Phase I ESA and a Phase II ESA to evaluate environmental conditions at that property.

Risk Rating B - High Potential to Contribute to Environmental Contamination

Properties screened as having a high potential to contribute to environmental contamination are identified with orange shading on **Figure 2.** A high risk rating was assigned when, based on a collective review of records, a property met one or more of the following criteria:

- MOE listings related to waste disposal or waste receiver sites;
- Certificates of Approval related to high potentially contaminating activities (i.e. private sewage works, heavy manufacturing, paint spray booths);
- National Pollutant Release Inventory listings for releases of substances to land;
- Greater than 15 years of liquid industrial and hazardous waste generation;
- Environmental offences related to contamination of soil or groundwater;
- Bulk fuel handling and storage facilities (private or retail);
- Evidence of automobile wrecking and recycling facilities;
- Spill event(s) of reported volume greater than 100 L to soil; and
- Visual inspection from public roadway indicated current use is a potentially contaminating activity with a high risk for soil and groundwater contamination.

It is MTE's experience that properties assigned a Risk Rating B (High Potential to Contribute to Environmental Contamination) would require both a Phase I ESA and a Phase II ESA to evaluate environmental conditions at that property.

Risk Rating C - Medium Potential to Contribute to Environmental Contamination

Properties screened as having a medium potential to contribute to environmental contamination are identified with yellow shading on **Figure 2**. A medium risk rating was assigned when, based on a collective review of records, a property met one or more of the following criteria:

- Certificates of Approval for Industrial Air related to moderate potentially contaminating activities;
- Listed in PCB-related databases (PCB Storage Site/Transfer Station);
- Listing of a Record of Site Condition for the Property, with a Risk Assessment;
- Between 10 and 15 years of liquid industrial and hazardous waste generation;
- Mixing, bulking, and application of pesticides (operator use);
- One-time spill events of reported volume less than 100 L to soil; and
- Visual inspection from public roadway indicated current use is a potentially contaminating activity with a moderate risk for soil and groundwater contamination.

It is MTE's experience that properties assigned a Risk Rating C (Medium Potential to Contribute to Environmental Contamination) would require a Phase I ESA and a Phase II ESA would likely be recommended to evaluate environmental conditions at that property.

Risk Rating D - Low Potential to Contribute to Environmental Contamination

Properties screened as having a low potential to contribute to environmental contamination are identified with blue shading on **Figure 2**. A low risk rating was assigned when, based on a collective review of records, a property met one or more of the following criteria:

- Listings of active or abandoned aggregate operations;
- Certificates of Approval for Industrial Air not related to potentially contaminating activities (i.e. permitting noise or comfort heating);
- Environmental offences related to noise or odours;
- Less than 10 years of liquid industrial and hazardous waste generation;
- Propane handling and storage facilities;
- Occupancy that suggests the use of little to no quantities of hazardous materials on site;
- Storage and handling of pesticides (vendors only); and
- Spill events of reported quantity less than 10 liters (L) to media other than soil or groundwater (storm sewer, surface water body or paved surfaces).

It is MTE's experience that properties assigned a Risk Rating D (Low Potential to Contribute to Environmental Contamination) would require a Phase I ESA, however a Phase II ESA may not be recommended in all cases to evaluate environmental conditions at that property.

Risk Rating E - Very Low Potential to Contribute to Environmental Contamination

Properties screened as having a very low potential to contribute to environmental contamination are identified as having no shading on **Figure 2**. A very low risk rating was assigned when, based on a collective review of records, there was no indication of potential environmental contamination related to the property.

It is MTE's experience that properties assigned a Risk Rating E (Very Low Potential to Contribute to Environmental Contamination) may not require a Phase I ESA to evaluate environmental conditions at that property, unless otherwise required for financial or regulatory requirements.

SCREENING LEVEL ASSESMENT SUMMARY

A graphical summary of the properties with risk ratings A through E (inclusive) within the COS Study Area, based on MTE's review of the above noted sources is provided on **Figure 2** and a tabular summary of the risk rating assigned, including a commentary on the rationale for each assigned risk rating is provided in **Table 1**. Properties with risk rating E (Very Low Potential to Contribute to Environmental Contamination) are not summarized in the table.

The table below summarizes the absolute number of properties assigned a low, medium, high or very high risk rating located within the COS Study Area. These numbers include only those properties that are listed within one of the previously listed public or private databases, or were added based on visual inspection from a public roadway (no properties were accessed during this COS).

Summary of Properties with Environmental Risk Rating A through D
East Boundary Corridor - Region of Waterloo, Ontario

# Properties screened as having low potential to contribute to environmental contamination	23
# Properties screened as having medium potential to contribute to environmental contamination	7
# Properties screened as having high potential to contribute to environmental contamination	65
# Properties screened as having very high potential to contribute to environmental contamination	5

FUTURE WORK FOR CONSIDERATION

Ecolog ERIS reports do not provide a complete picture of the potential for environmental impact at each property, but are deemed suitable for this preliminary exercise. Further investigation, such as a Phase I Environmental Site Assessment (in accordance with Canadian Standards Association document # Z768-01) should be undertaken in identified areas to provide a more complete picture of the relative environmental risk associated with each proposed alignment.

LIMITATIONS

Services performed by **MTE Consultants Inc.** (MTE) were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Environmental Engineering & Consulting profession. No other warranty or representation expressed or implied as to the accuracy of the information, conclusions or recommendations is included or intended in this report.

This report was completed for the sole use of the Region of Waterloo and it is intended to provide a preliminary assessment of the environmental conditions of properties with the potential to contribute to environmental contamination in the COS Study Area, as defined herein. As such, this report may not deal with all issues potentially applicable to the COS Study Area and may omit issues, which are or may be of interest to the reader. All findings and conclusions presented in this report are based on site conditions as they existed during the time period of the investigation. In addition, MTE has relied on information provided by EcoLog Environmental Risk Information Services (ERIS), and must be considered in its entirety as being accurate and representative. This report is not intended to be exhaustive in scope and is based solely on a review of historical information and data obtained by MTE as described in this report.

MTE has assumed that the information provided is factual and accurate. However it is important to note that many of the databases that were reviewed as part of the COS are based on voluntary submissions. Other databases reflect information that has been submitted to an agency as a condition of approval or regulation. It cannot be inferred that properties that are not listed in the databases have a low potential for contributing to environmental contamination.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such third parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by any third party as a result of decisions made or actions taken, based upon this report. MTE disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. Others with interest in the COS Study should undertake their own investigations and studies to determine how or if the condition affects them or their plans.

It should be recognized that the passage of time may affect the views, conclusions and recommendations (if any) provided in this report because environmental conditions of a property can change. Except as otherwise may be requested, MTE disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to MTE after the time during which MTE conducted the COS.

Respectfully Submitted,
MTE CONSULTANTS INC.

Carol Mitchell, P. Eng., QP_{ESA}
Senior Environmental Engineer

Patrick Dowling, B.A., C. Tech.
Environmental Scientist

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ATTACHMENTS

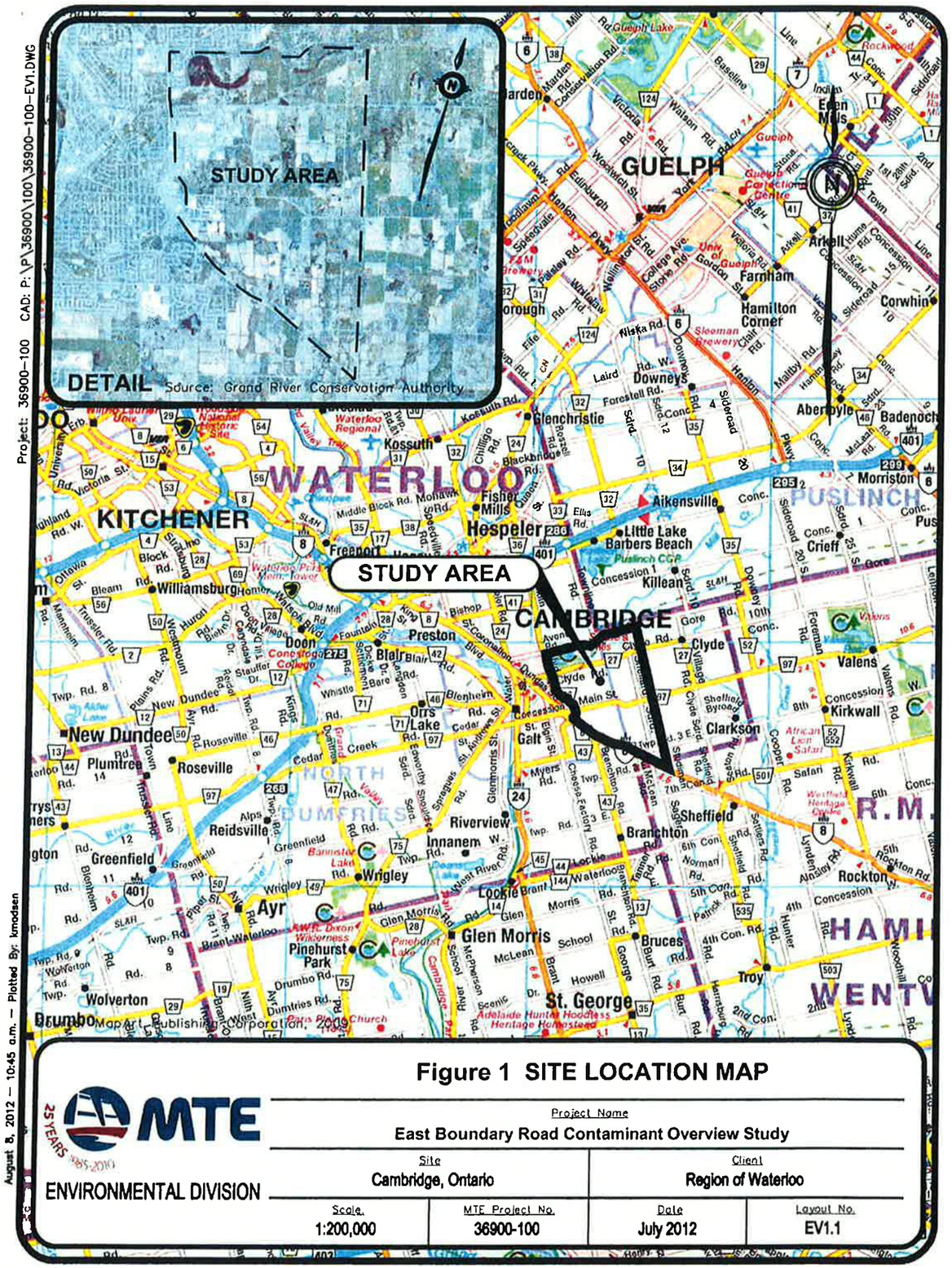


Figure 1 SITE LOCATION MAP

MTE 25 YEARS 1985-2010 More Than Engineering

ENVIRONMENTAL DIVISION

Project Name			
East Boundary Road Contaminant Overview Study			
Site: Cambridge, Ontario		Client: Region of Waterloo	
Scale: 1:200,000	MTE Project No.: 36900-100	Date: July 2012	Layout No.: EV1.1

Project: 36900-100 CAD: P:\P\36900\100\36900-100-EV1.DWG August 8, 2012 - 10:45 a.m. - Plotted By: kmadsen

Table 1 - Environmental Risk Rating Summary
East Boundary Road Corridor
Region of Waterloo, Ontario

Address #	Street	Company	Enviromental Risk Rating (A/B/C/D/E)	Rationale
405	Dobbie Drive	Fuchs Lubricants Canada	A	Scott's Manufacturing Directory - Petroleum and Gas Manufacturing/Refinery
				Registered Waste Generator - 1986-2012 - Inorganics, Organics, Solvents, Petroleum Hydrocarbons, Amines, Acids and Alkaline
				Certificate of Approval for Industrial Air for Oil/Solvent/Additives Mixing System (MOE # 8-2228-98)
				Registered Waste Receiver- Reclaim/Transfer Station - 1986-2008 - Oils, Resins, Pesticides
				Environmental Registry - Approvals for Industrial Air
				Ontario Spills - 1 L of lube oil to ground
				Ontario Spills - 100 mL of engine oil to asphalt
				Ontario Spills - 5 L of oil to asphalt
135	Dundas Street South	Allen-Bradley Canada/Rockwell Automation Canada	A	Certificates of Approval for Industrial Sewage Works and Industrial Wastewater - Solvent in groundwater remediation system (MOE # various)
				Orders - Order for Remedial Work
				Certificates of Approval for Industrial Air for various processes (MOE # various)
				Environmental Compliance Approvals listing for Industrial Sewage
				Environmental Registry - Approval for Waste Disposal Site
				Environmental Registry - Approvals for Sewage Works
				Ontario Spills - 6200 L of TCE contaminated groundwater to storm sewer
				Ontario Spills - TCE contaminated water to storm sewer
				Orders - Order for Unapproved Sewage Works
				Registered Waste Generator - 1986-2012 - Phosphates, Solvents, PCBs, Petroleum Hydrocarbons, Resins, Acids/Alkaline, Inorganics/Organics
				Scott's Manufacturing Directory - Electrical Component and Machinery Manufacturing
				Environmental Registry - Approvals for Industrial Air
				Inventory of PCB Sites
				National PCB Inventory - PCB Storage Site
				Ontario Spills - 80 L of oil in elevator shaft to ground
				Environmental Activity and Sector Registry - Registered Heating System (MOE # R-003-4457166147)
1071	Dundas Street South	Ultramar Canada	A	Certificate of Approval for Mobile Soil Vacuum Extraction System (MOE # various)
				Fuel Storage Tank Listing - Installation 1989 - Gasoline - 110,000L
				Listed In the Retail Fuel Storage Tanks database
				TSSA Expired Facilities database listing for liquid fuel storage tanks and piping
1265	Dundas Street South	Bosdale Farms Inc.	A	Certificate of Property Use - Foundry Sand Contamination with Risk Management Measures
				Record of Site Condition with Risk Assessment and Certificate of Property Use
401	Franklin Boulevard	Long Manufacturing/Dana Canada	A	Certificates of Approval for Industrial Sewage Works and Industrial Wastewater - Solvent in groundwater remediation system (MOE # 4-0086-99)
				Certificates of Approval for Industrial Air - Automotive Heat Exchanger Manufacturing (MOE # 2547-8DPS92)
				Environmental Registry - Approval for Sewage Works
				Ontario Spills - 900 L of "draw coat" to ground
				Ontario Spills - unknown amount of diesel from leaking tanks.
				Registered Waste Generator - 1986-2012 - Acids, Alkaline, Organics, Inorganics, Solvents, Petroleum Hydrocarbons, Detergents/Soaps
				Scott's Manufacturing Directory - Boiler Manufacturing
				Environmental Registry - Approval for Industrial Air

Table 1 - Environmental Risk Rating Summary
East Boundary Road Corridor
Region of Waterloo, Ontario

Address #	Street	Company	Enviromental Risk Rating (A/B/C/D/E)	Rationale
210	Avenue Road	Cello Products Ltd.	B	Registered Waste Generator - 1986-2012 - Inorganics, PCBs, Petroleum Hydrocarbons,
				Scott's Manufacturing Directory - Metal Products Manufacturing
				Certificate of Approval for Industrial Air - Electric Induction Fans (MOE # 8-2084-99)
				Environmental Registry - Approval for Industrial Air
				Inventory of PCB Sites
				National PCB Inventory - PCB Storage Site
				Registered Waste Receiver- Transfer Station/PCB Storage Site - 1986-2008 - PCBs
227	Avenue Road	Krebsz Electroplating Ltd./Industrial Processing Benson Chemicals Ltd. Union Gas Ltd.	B	Registered Waste Generator - 1986-2012 - Alkaline, Solvents, Petroleum Hydrocarbons, Inorganics
				Ontario Spills - 1800 L of Hydrochloric Acid to ground
				Ontario Spills - Unknown quantity of yellow substance to ground.
				Certificate of Approval for Industrial Air - Automatic Zinc Line (MOE # 8-2016-99)
				National Pollutant Release Inventory - Releases to Land of Zinc (2002-2010)
				Scott's Manufacturing Directory - Metal Treatment
				Environmental Registry - Approvals for Industrial Air
16	Branchton Road	Cleanpac/Stat Medical	B	Medical Equipment Manufacturing
400	Clyde Road	Grand River Conservation Authority	B	Fuel Storage Tank Listing - Installation 1981 - Gasoline/Diesel - 20,000L
				Listing for a Waste Disposal Site - Junkyard (1960's)
				Private and Retail Fuel Storage Tanks
				Registered Waste Generator - 1986-2012 - Petroleum Hydrocarbons, Acids, alkalines, Solvents, PCBs, Organics, Inorganics, Pesticides
				Registered Waste Receiver- 1986-2008 - Alkaline Wastes (Other Metals)
				TSSA Expired Facilities database listing for liquid fuel storage tanks and piping
				National PCB Inventory - PCB Storage Site
				Ontario Spills - 45 L of Transformer oil to ground (PCB testing)
				Ontario Spills - 4 L of transformer oil to ground
501	Clyde Road	Applied Automation Canada Inc.	B	Ontario Spills - Unknown volume of furnace oil to ground.
				Scott's Manufacturing Directory - Metalworking Machinery Manufacturing
515	Clyde Road	Elite Bending Inc	B	Scott's Manufacturing Directory - Metalworking Machinery Manufacturing
525	Clyde Road	Cambridge Rigging Central/Parcon/CFJ Paving	B	Private and Retail Fuel Storage Tanks
				Registered Waste Generator - 1986-2008 - Petroleum Hydrocarbons,
				TSSA Expired Facilities database listing for propane tank
561	Clyde Road	Elgin Auto	B	Auto Repair Facility
395	Dobbie Drive	Taylor Forge Canada/Sentinel 88/ Allan Pipe Fab Inc R D Manufacturing	B	Registered Waste Generator - 1986-2012 - Petroleum Hydrocarbons, Organics
				Scott's Manufacturing Directory - Specialty Machinery Manufacturing
				Certificate of Approval for Air for Paint Spray Booth (1198-7B7LPP)
				Scott's Manufacturing Directory - Metal Manufacturing
				Environmental Registry - Approval for Industrial Air
425	Dobbie Drive	Crombie Machines Inc. Delft Blue Veal Corp.	B	Scott's Manufacturing Directory - Valve/Pipe/Instrument Manufacturing
				Scott's Manufacturing Directory - Animal Slaughter House/Packing Plant
				Registered Waste Generator - 1992-1998 - Petroleum Hydrocarbons
450	Dobbie Drive	Cambridge Towel Corporation Fashion Screen Print, Strone Construction	B	Scott's Manufacturing Directory - Textile Manufacturing
				Registered Waste Generator - 1992-2012 - Organics, Petroleum Hydrocarbons, Inorganics
				Environmental Registry - Approvals for Industrial Air
				Certificate of Approval for Industrial Air - Comfort Heating (MOE # 2555-5ZLKL6)
				Scott's Manufacturing Directory - Screen Printing/Automotive Trimmings and Apparel
445	Dobbie Drive	Pippa Footwear/Canstar Sports Coscan International Bauer Inc.	B	Registered Waste Generator - 1986-2001 - Organics, Solvents, Inorganics, Petroleum Hydrocarbons, Acids
				Ontario Spills - 22.5 L of Diesel to ground
				Scott's Manufacturing Directory - Sporting Goods Manufacturing
447	Dobbie Drive	No-Sag Spring Corp. Gremark Ind. Inc. Donald Choi Canada Ltd./Harris Hub Company of Canada Distinctive Packaging	B	Certificate of Approval for Industrial Air - Paint Operations (MOE # 8-2143-92)
				Certificate of Approval for Industrial Air - Paint Spray Booths (MOE #8-2404-95-966)
				Registered Waste Generator - 1988-2001 - Alkaline, Organics, Solvents, Petroleum Hydrocarbons
				Scott's Manufacturing Directory - Paperboard Mill/Boxboard Manufacturing
				Ontario Spills - 25 L of Mineral Oil to ground.
				Scott's Manufacturing Directory - Wood Furniture Manufacturing
454	Dobbie Drive	Combined Metal Industries Inc./ABC Metal Recycling Corp.	B	Listing for Automobile Wrecking and Supplies (Scrap Metals)
				Ontario Spills - Fire.
				Registered Waste Generator - 2007-2012 - Petroleum Hydrocarbons
455	Dobbie Drive	Keene/Widelite Ltd./Canlyte Inc.	B	Certificate of Approval for Industrial Air - Metal Light Fixture Manufacturing (MOE # various)
				Registered Waste Generator - 1986-2010 - Alkaline, Acids, Inorganics, Organics, Petroleum Hydrocarbons, Solvents, Amines, Phosphates, PCBs
				Scott's Manufacturing Directory - Battery, Electrical Equipment and Component Manufacturing
				Environmental Registry - Approvals for Industrial Air
				Inventory of PCB Sites/National PCB Inventory - PCB Storage Site
				Registered Waste Receiver- Transfer Station - 1986-2008 - PCBs
458	Dobbie Drive	Custom Aluminum Foundry	B	Certificate of Approval for Industrial Air - Basic Comprehensive for aluminum foundry (MOE # 1542-7T9QCG)
				Scott's Manufacturing Directory - Ferrous and Non-Ferrous Foundries/Metal Product Manufacturing
				Environmental Registry - Approvals for Industrial Air
				Registered Waste Generator - 2002-2012 - Solvents, Petroleum Hydrocarbons,

Table 1 - Environmental Risk Rating Summary
East Boundary Road Corridor
Region of Waterloo, Ontario

Address #	Street	Company	Enviromental Risk Rating (A/B/C/D/E)	Rationale
460	Dobbie Drive	Quantex Chemical Ltd. T.C. Lawrence and Sons Ltd. Skyway Protein Ltd.	B	Certificate of Approval for Industrial Air - Combustion Equipment, Oil Recovery Odour Control Certificate of Approval for Industrial Air - Metal Foundry (MOE #1478-4LKJ27) Certificate of Approval for Industrial Air - Rendering Plant (MOE # 5273-4PKPRU) Scott's Manufacturing Directory - Non-Ferrous Foundries, Tool Manufacturing, Equipment Manufacturing Environmental Registry - Approvals for Industrial Air Registered Waste Generator - 1988-1998 - Inorganics, Petroleum Hydrocarbons
465	Dobbie Drive	Mirion Technologies Inc./I&ST Canada Inc./Reuter Stokes Canada	B	Registered Waste Generator - 1986-2012 - Solvents, Petroleum Hydrocarbons, Alkaline, Inorganics, Organics, Certificates of Approval for Industrial Air - Electrical Components Manufacturer (MOE # various) Scott's Manufacturing Directory - Medical Devices and Boiler/Heat Exchanger Manufacturing Environmental Registry - Approval for Industrial Air
470	Dobbie Drive	Combined Metal Products	B	Metal Manufacturing
140	Dundas Street South	Hasty Lube Inc.	B	Listed in the Retail Fuel Storage Tanks database
250	Dundas Street South	Trucking Firm Lawn Man and Plantscape The Pine Group/Daystar Group	B	Ontario Spills - 300 L of diesel to ground Pesticide Register - Operator Scott's Manufacturing Directory - Printing Services
330	Dundas Street South	EM Coleman Transport	B	Fuels Storage Tanks/Trucking Company
1280	Dundas Street South	Trucking Firm	B	Ontario Spills - 140 L of diesel to ground
1551	Dundas Street South	Al's Stone Service	B	Fuels Storage Tanks/Trucking Company Registered Waste Generator - 1999-2012 - Petroleum Hydrocarbons Ontario Spills - 12 L of tar to roadway
-	Franklin Boulevard at Clyde Road	Motor Vehicle Accident	B	Ontario Spills - 205 L of Hydraulic Fluid to ground Ontario Spills - 90 L of diesel to ground Ontario Spills - unknown amount of motor oil from accident Ontario Spills - unknown quantity of fuel to ground
200	Franklin Boulevard	Patel Dry Cleaning Centres Loblaw Properties Ltd. South Cambridge Shopping Centre Home Hardware/Zehrs Markets/Kmart Canada	B	Registered Waste Generator - 1986-2001 - Solvents TSSA Expired Facilities database listing for gasoline station, liquid fuel storage tanks and piping Certificate of Approval for Industrial Air (MOE # 5350-7X7LSD) Pesticide Register - Vendor
345	Franklin Boulevard	UPI Energy Ltd./Ed Taylor Fuels Ltd./ Dave Moore Fuels Ltd.	B	TSSA Expired Facilities database listing for Dway tanks, gasoline service station and fuel tanks Fuel Storage Tank Listing - Installation 1991 - Gasoline/Diesel - 90,000L to 113,000L Listed in the Retail Fuel Storage Tanks database Private and Retail Fuel Storage Tanks Registered Waste Generator - 2003-2008 - Petroleum Hydrocarbons
364	Franklin Boulevard	Franklin Auto Body	B	Certificate of Approval for Industrial Air (MOE # 8533-6UQRKR) Environmental Registry - Approval for Industrial Air Registered Waste Generator - 1988-1996 - Alkaline Metals
365	Franklin Boulevard	Buon Vino Manufacturing	B	Scott's Manufacturing Directory - Machinery Manufacturing/Other Basic Chemical Manufacturing Registered Waste Generator - 2000-2010 - Petroleum Hydrocarbons
374	Franklin Boulevard	Preciman Tool Inc.	B	Registered Waste Generator - 1994-2012 - Petroleum Hydrocarbons Scott's Manufacturing Directory - Metalworking Machinery Manufacturing
378	Franklin Boulevard	Goldstar Plastics Inc. Sealtest Ontario	B	Certificate of Approval for Industrial Air for paint spray booth (MOE # 2412-4WS5VN)) Scott's Manufacturing Directory - Dairy Products Environmental Registry - Approval for Industrial Air
385	Franklin Boulevard	Dezurik Canada/SPX Valves and Controls General Signal Ltd.	B	Registered Waste Generator - 1986-2012 - Petroleum Hydrocarbons, Inorganics, PCBs, Solvents, Acids, Alkaline, Organics Certificate of Approval for Industrial Air - Paint Spray Booth (MOE # 4231-4KEK7Y) Scott's Manufacturing Directory - Metal Valve Manufacturing Environmental Registry - Approval for Industrial Air Inventory of PCB Sites/National PCB Inventory - PCB Storage Site
395	Franklin Boulevard	Hetworth Corp./Colourline Display and Screening Maran Coating Removal R. Beckman Cellulose Inc. Colourline Display and Screenprinting	B	Registered Waste Generator - 1997-2012 - Inorganics, Acids, Solvents, Spent Pickle Liquor Certificate of Approval for Industrial Air - Heat Cleaning Oven (MOE # 8-22-88-96) Scott's Manufacturing Directory - Organic and Inorganic Chemical, Paint Manufacturing Environmental Registry - Approval for Industrial Air Scott's Manufacturing Directory - Plastic Film and Sheet Manufacturing Scott's Manufacturing Directory - Sign and Display Manufacturing
430	Franklin Boulevard	NR Murphy Limited	B	Certificates of Approval for Industrial Air - Paint Spray Booth (MOE #5361-4KVS79) Registered Waste Generator - 1992-2012 - Inorganics, Solvents, Petroleum Hydrocarbons, Scott's Manufacturing Directory - HVAC Equipment Manufacturing/Metal Manufacturing Ontario Spills - 60 L of Diesel to ground
450	Franklin Boulevard	Cango Inc.	B	Fuel Storage Tank Listing - Installation 1990 - Gasoline - 36,000L - 58,000L Listed in the Retail Fuel Storage Tanks database Private and Retail Fuel Storage Tanks

Table 1 - Environmental Risk Rating Summary
East Boundary Road Corridor
Region of Waterloo, Ontario

Address #	Street	Company	Enviromental Risk Rating (A/B/C/D/E)	Rationale
456	Franklin Boulevard	Rollmaster Conveyors/BES Tool and Die Ltd./Standard Industrial Tech. Inc Ainsworth Inc.NBS General/Lionsshare Solutions Inc./GEW Group	B	Registered Waste Generator - 1989-2012 - Solvents, Petroleum Hydrocarbons, Organics, Amines Certificate of Approval for Industrial Air - Basic Comprehensive for Diesel Engine rebuilding operation (MOE # 9313-6MVRRL) Listed in National Environmental Emergencies System database - spill of cutting oil caused by flooding. Scott's Manufacturing Directory - Machinery Manufacturing, Repair and Maintenance Scott's Manufacturing Directory - Material Handling Equipment Environmental Registry - Approval for Industrial Air
460	Franklin Boulevard	Delta II Auto Service Centre	B	Listed in the Retail Fuel Storage Tanks database
466	Franklin Boulevard	Arc Industries Ltd.	B	Certificate of Approval for Industrial Air - Lacquer spraying exhaust (MOE # 8-2026-88) Registered Waste Generator - 1988-2009 - Solvents, Organics Scott's Manufacturing Directory - Wood Product Manufacturing
470	Franklin Boulevard	Hall Engineering, Cambridge Pro Fab	B	Registered Waste Generator - 1986-2012 - Petroleum Hydrocarbons, Acids, Inorganics, Solvents Scott's Manufacturing Directory - Metal Manufacturing
501	Franklin Boulevard	Frigidaire Canada/Markin Tubing/Franklin Manufacturing Nemcor Inc. Serpac Containers/WCI Manufacturing	B	Registered Waste Generator - 1986-2010 - Alkaline, Organics, Solvents, Inorganics, PCBs, Petroleum Hydrocarbons Scott's Manufacturing Directory - Textile Mills Ontario Spills - 135 L of Naphtha from drum in trailer to ground. Ontario Spills - 300 L of fuel to ground Private and Retail Fuel Storage Tanks TSSA Expired Facilities database listing for private fuel facility, liquid fuel tanks and piping Inventory of PCB Sites National PCB Inventory - PCB Storage Site Registered Waste Receiver- Transfer Station/PCB Storage Site - 1987-2008 - PCBs Scott's Manufacturing Directory - Boxboard Manufacturing
666	Franklin Boulevard	Hydro One Networks Inc.	B	Registered Waste Generator - 1992-2012 - Inorganics, PCBs, Petroleum Hydrocarbons Environmental Registry - Approval for Industrial Air Certificate of approval for Air (Noise) - (MOE # 2989-83KREW) Ontario Spills - <1 L of Transformer oil to ground.
700	Franklin Boulevard	Enervac Corp./Duke Electric/Ontario Hydro	B	Registered Waste Generator - 1986-2012 - Petroleum Hydrocarbons, Organics Scott's Manufacturing Directory - Metal Valve, Motor and Generator Manufacturing Registered Waste Generator - 1994-2001 - Solvents, Petroleum Hydrocarbons
800	Franklin Boulevard	2052287 Ontario Ltd. Beaver Gas	B	Fuel Storage Tank Listing - Installation 1985 - Gasoline - 110,000L - 200,000L Listed in the Retail Fuel Storage Tanks database Ontario Spills - 15 m2 of parking lot covered with gasoline Private and Retail Fuel Storage Tanks TSSA Expired Facilities database listing for full serve gasoline station TSSA Expired Facilities database listing for gasoline station, liquid fuel storage tank and piping Certificate of Approval for Industrial air - exhaust fan (MOE # 8-2330-95) Scott's Manufacturing Directory - Wood Cabinet Manufacturing Ontario Spills - unknown quantity of motor oil to ground
496	Franklin Boulevard	Franklin Auto Masters	B	Auto Repair Facility
600	Main Street	Hayak Auto Body	B	Auto Body Facility (also includes 642 Main Street)
635	Main Street	Vincent Lawn and Garden	B	Equipment Maintenance.
1050	Main Street	Wozniuk Brothers Steel and Metal Main Street East Junkyard	B	Listing for Automobile Wrecking and Supplies (Scrap Metals) Listing for Waste Disposal Site - Junkyard (1960s-1990s)
1235	Main Street	-	B	Ontario Spills - 200 L of Diesel to roadway
2155	Main Street	Cambridge Metal Recycling Corp./A&P Auto Wrecking Regional Road 97 Junkyard ABC Metal Recycling/Millenium Iron and Metal	B	Listing for Automobile Wrecking and Supplies (Scrap Metals) Listing for Waste Disposal Site - Junkyard (1970s) Certificate of Approval Application for Industrial Air - Waste Oil Furnace (MOE # 8-2062-95) Environmental Registry - Approval for Waste Disposal Site (MOE # IA9E1190) Listed in National Environmental Emergencies System database - explosion and fire, unknown source. Ontario Spills - 50 cars on fire at auto wreckers Ontario Spills - 60 cars/tires on fire at auto wreckers Registered Waste Generator - 1996-2012 - Petroleum Hydrocarbons Waste Disposal Sites Inventory (A650232) - Transfer Station Application Ontario Spills - Cutting Fluid from pile to ground. Ontario Spills - smoke from fire at auto wreckers
66	Moorefield Street	Cambridge Stampings Babcock and Wilcox Canada	B	Registered Waste Generator - 1990-2008 - Alkaline, Phosphates, Petroleum Hydrocarbons Registered Waste Generator - 2009-2012 - Acids, Organics, Petroleum hydrocarbons, Resins, PCBs, Solvents, Scott's Manufacturing Directory - Auto Parts Manufacturing
75	Moorefield Street	Barraday Inc.	B	Certificates of Approval for Industrial Air - Textile/Resin Coating (MOE # 0670-4L4S97) Registered Waste Generator - 1992-2012 - Alkaline, Organics, Inorganics, Solvents, Resins, Petroleum Hydrocarbons, Amines, PCBs, Acids, Scott's Manufacturing Directory - Textile Mill Environmental Registry - Approval for Industrial Air
1678	Morrison Road	Morrison Meat Packers/Cambridge Meat Packers	B	Certificates of Approval for Industrial Sewage Works - Abattoir facility (MOE # various) Environmental Registry - Approval for Sewage Works Ontario Spills - 18,000L of process water to ground Ontario Spills - 400 L of wastewater to ditch Scott's Manufacturing Directory - Meat Packing Plants
1718	Morrison Road	Cambridge Garden Centre and Landscaping	B	Registered Waste Generator - 1995-2012 - Petroleum Hydrocarbons Certificate of Approval for Industrial Air - Topsoil screening (MOE #8463-4P5PAB) Environmental Registry - Approval for Industrial Air Pesticide Register - Vendor

Table 1 - Environmental Risk Rating Summary
East Boundary Road Corridor
Region of Waterloo, Ontario

Address #	Street	Company	Enviromental Risk Rating (A/B/C/D/E)	Rationale
140	Orion Place	Cambridge Brass Inc./Masco Canada Inc.	B	Certificate of Approval for Industrial Air - Basic Comprehensive for brass foundry (MOE # 1089-88HM3L)
				Registered Waste Generator - 1986-2012 - Inorganics, Petroleum Hydrocarbons, Organics, PCBs, Acids, Alkaline, Solvents, Pesticides
				Scott's Manufacturing Directory - Metal Valve Manufacturing
				Environmental Registry - Approvals for Industrial Air
				Inventory of PCB Sites
				National PCB Inventory - PCB Storage Site
				Registered Waste Receiver- Transfer Station/PCB Storage Site - 1986-2008 - PCBs
160	Orion Place	Courtice Steel Inc./Gerdau Ameristeel Cambridge Inc./MultiServe/ Harsco Metals/Heckett Canada	B	Registered Waste Generator - 1986-2012 - Inorganics, Organics, Solvents, Petroleum Hydrocarbons, Acids and Alkaline, Steel Making Residues
				Certificates of Approval for Industrial Air for Metal Steel Mill (MOE # various)
				Certificate of Approval for Industrial Sewage Works (MOE # 7610-8GSRHF)
				Ontario Spills - 450 L of glycol /water to ground
				Scott's Manufacturing Directory - Iron and Steel Mill/Manufacturing
				Certificates of Approval for Industrial Air for Utilization of Landfill Gas (MOE # 8-2011-87-977)
				Environmental Registry - Approvals for Industrial Air
				Ontario Spills - 5 gallons of lubricating oil to ground.
				Listed in Compliance and Convictions database for Excessive Noise (2 listings)
3081	Old Beverly Road	Elliot Coach Lines	B	Transportation Company Yard - fueling/minor maintenance of vehicles
55	Savage Drive	Babcock and Wilcox Canada	B	Registered Waste Generator - 1990-2012 - Acids, Alkaline, Organics, Inorganics, Petroleum Hydrocarbons, Solvents, Resins, PCBs
75	Savage Drive	Ingersoll Rand Canada	B	Registered Waste Generator - 1986-2001 - Organics, Solvents, Inorganics, Petroleum Hydrocarbons
		Bimedia - MTC Animal Health		Scott's Manufacturing Directory - Machinery and Equipment Manufacturing
		Babcock and Wilcox Canada		Pesticide Register - Vendor
				Registered Waste Generator - 2005-2012 - Acids, Organics, Solvents, Petroleum Hydrocarbons
100	Savage Drive	Tigercat Industries Ltd./Waterbury Farrel Technologies Inc./	B	Registered Waste Generator - 1986-2012 - Petroleum Hydrocarbons, Solvents, Inorganics, PCBs
		MacDonald Environmental System		Scott's Manufacturing Directory - HVAC Equipment Manufacturing
		Wean United Ltd./Manufacturers MetalFab Inc.		Ontario Spills - 1000 L hydraulic oil to ground
				Scott's Manufacturing Directory - Machinery Manufacturing
				Scott's Manufacturing Directory - Metal Manufacturing
				Environmental Registry - Approvals for Industrial Air
				Ontario Spills - 40 L Diesel to ground
111	Savage Drive	Valleycroft Textiles Limited/Penman Inc./Dominion Fashion Group/	B	Registered Waste Generator - 1986-2004 - Petroleum Hydrocarbons, PCBs, Organics, Inorganics, Solvents, Polymeric Resins, Detergents/Soaps, Amines, Acids
		Cambridge Door Ltd.		Scott's Manufacturing Directory - Wood Window/Door Manufacturing
		Dominion Textile/Prottext Athletics Inc./John Forsyth Co.		Certificate of Approval for Industrial Air - Garment dye dryers (MOE # various)
				Ontario Spills - Barrels Leaking to ground and creek
				Scott's Manufacturing Directory - Textile Mills/Manufacturing
				Environmental Registry - Approvals for Industrial Air
				Inventory of PCB Sites
				National PCB Inventory - PCB Storage Site
				Ontario Spills - 200 L drum of fabric softener to ground
				Registered Waste Receiver- Transfer Station/PCB Storage Site - 1986-2008 - PCBs
				Ontario Spills - Adhesive to catchbasin
				Registered Waste Generator - 2004-2009 - Organics, Solvents, Petroleum Hydrocarbons, Polymeric Resins, Alkaline
131	Savage Drive	Petro Engineered Products Ltd.	B	Scott's Manufacturing Directory - Machinery Manufacturing/Textile Mill
		410754 Ontario Ltd.		Registered Waste Generator - 2002-2012 - Petroleum Hydrocarbons
141	Savage Drive	Galt Display Rack Company	B	Certificate of Approval for Industrial Air for paint spray booth (MOE # 5534-5KBPLK)
				Registered Waste Generator - 2001-2012 - Organics, Solvents
				Environmental Registry - Approvals for Industrial Air
				Scott's Manufacturing Directory - Display rack Manufacturing
151	Savage Drive	Software A.G. of Canada/Deanel Dorp./Northern Optotronics Inc.	B	Registered Waste Generator - 1986-2012 - Petroleum Hydrocarbons, Organics, Solvents, Inorganics
		Special Ops Group		Scott's Manufacturing Directory - Textile Manufacturing
201	Savage Drive	Regional Municipality of Waterloo - Cambridge Landfill	B	Certificate of Approval for Municipal and Private Sewage - SWM Facility for landfill site (MOE # 6228-573QXZ)
		Dawson Contract Services Ltd.		Certificate of Approval for Waste Management System (MOE # 1936-5FNRLY)
				Fuel Storage Tank Listing - Installation 1990 - Diesel - 45,000L
				Listed in Landfill Inventory Management database - Closed Landfill.
				Listing for Waste Disposal Site - closed Cambridge landfill (MOE #140104) - 1970-1990s
				Registered Waste Generator - 1986 - 2012 - Inorganics, Organics, Solvents, Petroleum Hydrocarbons, Pesticides, Herbicides, Acids and Alkaline
				TSSA Expired Facilities database listing for liquid fuel storage tanks and piping
				Waste Disposal Sites - 1991 Historical Approval Inventory - Class A3 (Potential Human Impact - Municipal/Domestic Waste)
				Waste Disposal Sites Inventory (A140104) - Active Landfill
				Waste Disposal Sites Inventory (A140303) - Active Transfer Facility
				Registered Waste Receiver- Transfer Station - 1997-2009 - Organics, Inorganics, Landfill Leachates, Solvents, Petroleum Hydrocarbons, Pesticides
1513	Shellard Road	Moffats Creek Junkyard	B	Listing for a Waste Disposal Site - Junkyard (1970's - 1980's)

Table 1 - Environmental Risk Rating Summary
East Boundary Road Corridor
Region of Waterloo, Ontario

Address #	Street	Company	Enviromental Risk Rating (A/B/C/D/E)	Rationale
20	Braga Drive	S & S Dookie Trucking Ltd.	C	Certificate of Approval for Waste Management System (MOE 4255-4VXKRU)
435	Dobbie Drive	Grober Inc/Delft Blue Veal Corp.	C	Registered Waste Generator - 2002-2012 - Organic, Inorganics, Solvents, Petroleum Hydrocarbons
				Listed in Compliance and Convictions database for Dly odourous manure spill
				Ontario Spills - 300 L of blood to ground
2532	Dundas Street South	Bulldog Power Sports	C	Recreational Equipment Maintenance.
615	Franklin Boulevard	Reid Homes	C	Record of Site Condition with Risk Assessment, No Certificate of Property Use
		R.J. Moore Hardwoods Inc./Allwood Lumber services Inc.		Scott's Manufacturing Directory - Sawmill/Wood Manufacturing
				Registered Waste Generator - 2006 - Organics, Petroleum Hydrocarbons, Amines
-	Lot Pt. 46, PL1135	(Property north of Savage Drive, East of Franklin)	C	Record of Site Condition with Risk Assessment, No Certificate of Property Use
486	Main Street	Grand Valley Fortifiers	C	Certificate of Approval for Industrial Air - baghouse (MOE #8-2168-85-006)
				Pesticide Register - Vendor
				Registered Waste Generator - 2012 - Petroleum Hydrocarbons
				Scott's Manufacturing Directory - Animal Food Manufacturing/Pharmaceuticals Manufacturing
710	Myers Road	Winzen Burlington Developments Limited	C	Record of Site Condition with Risk Assessment, No Certificate of Property Use
-	Avenue Road and Townline Road	Motor Vehicle Accident	D	Ontario Spills - 6 L of motor oil to ground
265	Avenue Road	Better Bee Supplies	D	Pesticide Register - Vendor
398	Avenue Road	Great Waters of Canada Inc.	D	Scott's Manufacturing Directory - Beverage Manufacturing
272	Clyde Road	Grayco	D	Listing in the Chemical Register - Other Chemical Products Industrial
389	Clyde Road	The Intercorp Group	D	Scott's Manufacturing Directory - Printing Services
160	Dundas Street South	Fast Eddies Restaurants	D	Certificate of Approval for Industrial air - exhaust fan (MOE # 8-2144-90)
384	Franklin Boulevard	Bolt and Nut Supply	D	Registered Waste Generator - 2006 - Solvents
416	Franklin Boulevard	Soyaworld	D	Registered Waste Generator - 2009-2010 - Solvents, Petroleum Hydrocarbons, Acids, alkalines, Petroleum Hydrocarbons
		Cambridge Fine Foods		Scott's Manufacturing Directory - Frozen Food and Meat Rendering Plant
657	Franklin Boulevard	Cambridge Hydro	D	Ontario Spills - 5 L of Transformer oil to ground
	Lot 3 Con 8 North Dumfries	-	D	Listing for an abandoned aggregate operation
	Lot 4 Con 10	-	D	Listing for an abandoned aggregate operation
	Lot Pt. 1 & 2, Con 8 North Dumfries	Lakeview Sand and Gravel	D	Listing for an active aggregate operation
490	Main Street	Cambridge Fire Department	D	Certificate of Approval for Industrial Air (MOE # 6538-7GVNXU)
				Registered Waste Generator - 2009-2012 - Petroleum Hydrocarbons
615	Main Street	Budget Impressions of Cambridge/Cambridge Printing	D	Scott's Manufacturing Directory - Printing Services
1125	Main Street	JD Embroidery	D	Scott's Manufacturing Directory - All other Textile Mills
1661	Morrison Road	Andex Kitchens and Custom Woodworking	D	Registered Waste Generator - 2010 - Organics
1738	Morrison Road	Caron Roofing	D	Registered Waste Generator - 2000-2001 - Petroleum Hydrocarbons
105	Ripplewood Road	1655512 Ont. Ltd.	D	Registered Waste Generator - 2006 - Solvents
162	Savage Drive	Grober Nutrition/Delft Blue Veal	D	Scott's Manufacturing Directory - Meat Packing/Animal Food Manufacturing
				Registered Waste Generator - 2007-2012 - Petroleum Hydrocarbons, Organics, Alkaline
1151	Shellard Road	JD Embroidery	D	Scott's Manufacturing Directory - Other Textile Product Mills
1337	Shellard Road	Lot 1 Con 8 North Dumfries	D	Listing for an abandoned aggregate operation
1708	Shellard Road	-	D	Ontario Spills - 6x 20 L pails of used motor oil found dumped on side of road.
East of	Vanier Drive	Lot 1 Con 9 North Dumfries	D	Listing for an abandoned aggregate operation

EV1.2

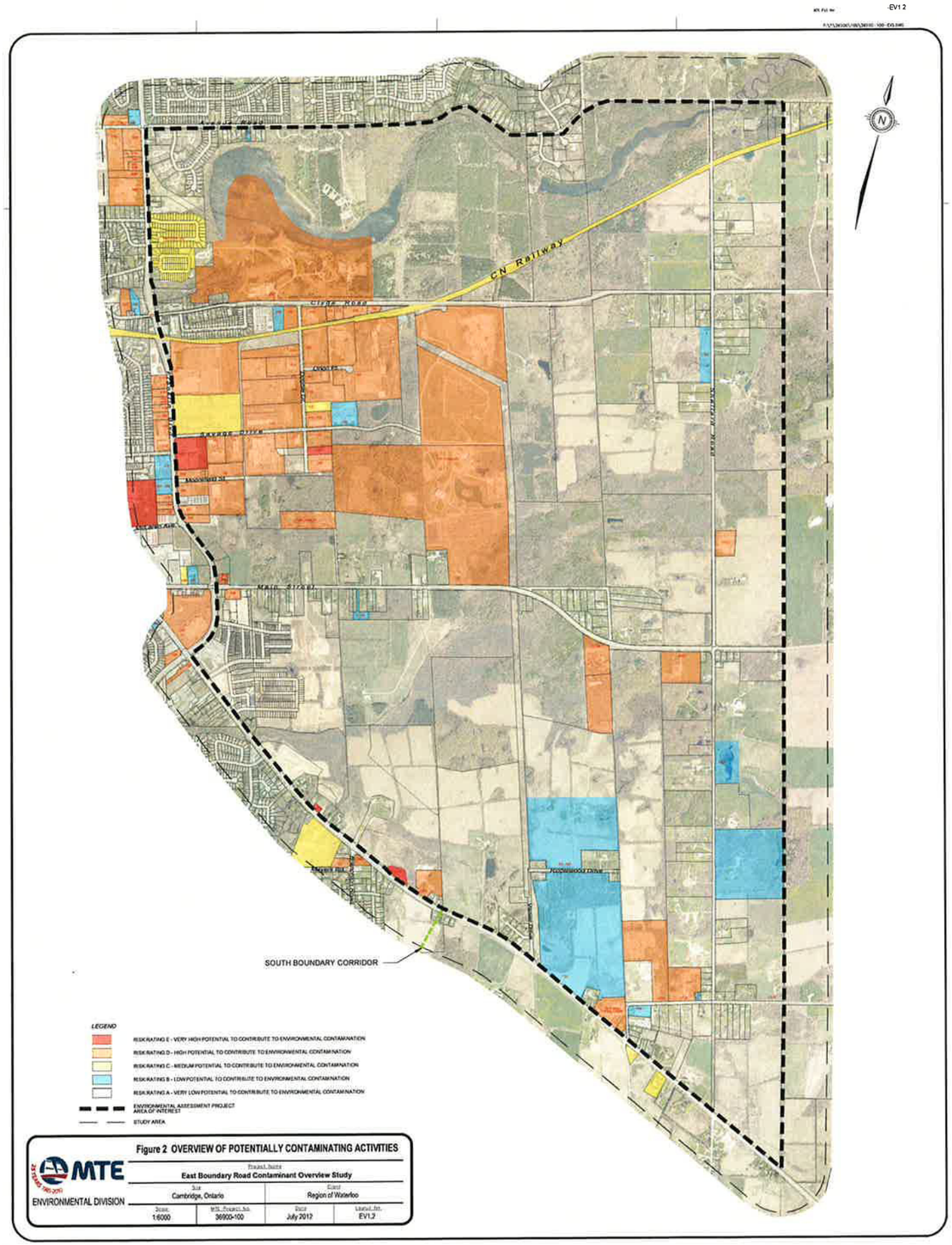


Figure 2 OVERVIEW OF POTENTIALLY CONTAMINATING ACTIVITIES

MTE CONSULTANTS
ENVIRONMENTAL DIVISION

Project Name	
East Boundary Road Contaminant Overview Study	
Site: Cambridge, Ontario	Client: Region of Waterloo
Scale: 1:6000	MTE Project No.: 36900-100
Date: July 2012	Layout No.: EV1.2