

**St. Marys Flamborough Quarry Haul Route Study
Cultural Heritage and Archaeological Report
City of Hamilton and Regional Municipality of Halton, Ontario**

Submitted to
iTRANS Consulting Inc.
100 York Boulevard, Suite 300, Richmond Hill, ON L4B 1J8
Tel: (905) 882-4100 Fax: (905) 882-1557

Prepared by
ARCHAEOLOGIX INC.
14 Oxford Street West, London, Ontario, N6H 1P9
Tel: (519)-642-7836 Fax: (519)-642-7733

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Project Summary

A cultural heritage and archaeological study was conducted for an approximately 20 kilometre stretch of various roads straddling the City of Hamilton and the Regional Municipality of Halton. This study evaluates potential impact on the cultural heritage and archaeological resources of the alternative haul routes to a proposed new aggregate quarry to be located at the northwest corner of Concession Road 11 East and Milborough Line in the Geographic Township of Flamborough East, City of Hamilton. This report was produced as part of a haul route evaluation study coordinated by iTRANS Consulting.

Archaeologix Inc. applied archaeological potential criteria commonly used by the Ministry of Culture to determine areas of archaeological potential along the haul routes. The archaeological potential for precontact Aboriginal sites was deemed to be moderate to high along stretches of road that have not been impacted by prior construction, sloping of the land, or poor drainage. Similarly, the archaeological potential for historic sites was also found to be moderate to high along certain stretches of road. Stage 2 assessment is recommended for those areas regarded to have archaeological potential as assessed in this report.

Twenty four potentially significant sites were also identified in the subject area. The seventeen built heritage sites include houses and barns. The seven cultural landscape units comprise farmsteads, homesteads, two village complexes, one church complex, and one waterscape. When the final haul route has been determined, a more detailed architectural and historical study of relevant sites identified and pertaining to the selected route should be undertaken.

As further archaeological assessment is recommended, the Ontario Ministry of Culture has reviewed the results in this report and issued a letter of concurrence with the findings herein. A letter of clearance was not requested at this time.

St. Marys Flamborough Quarry Haul Route Study Cultural Heritage and Archaeological Report City of Hamilton and Regional Municipality of Halton, Ontario

1.0 INTRODUCTION

St. Marys Cement (Canada) Inc. has proposed to develop a Dolostone Quarry on Part of Lots 1, 2 and 3, Concession 11, Geographic Township of East Flamborough, in the City of Hamilton. The property is located on the north side of 11th Concession, just west of Milborough Line.

In April 2006 Dillon Consulting Limited prepared Terms of Reference for the Quarry Haul Route Evaluation on behalf of the City of Hamilton. Components of the Terms of Reference require that Alternative Haul Routes are identified, the existing baseline conditions of each alternative route are described, and a comparative analysis and evaluation is carried out. iTRANS Consulting Inc. has identified five Alternative Haul Routes (see Appendix A for full description) that are described and analyzed in the following report in the context of Cultural Heritage and Archaeology.

This report documents the consultant team, describes the environment, defines the analysis criteria and indicators, reports the analysis and results, and offers recommendations and mitigating measures.

2.0 DESCRIPTION OF THE CONSULTANT TEAM

The consultant team involved with producing this report is:

Project Coordinator	Jim Wilson, M.A.
Field Investigation	Jeffrey Muir, B.A. Nancy Tausky, M.Phil.
Report Production	Jeffrey Muir, B.A. Nancy Tausky, M.Phil. Hilary Bates Neary, M.L.S., M.A. Jim Wilson, M.A.
Office Assistant	Cassandra Duckworth-Robb

The completion of this report was facilitated by the assistance of the following:

- Tara Erwin, M.A.Sc., P. Eng., iTRANS Consulting Limited, Richmond Hill.

- Matthew McCumber, M. Eng., iTRANS Consulting Limited, Richmond Hill.
- Anne Fisher, Planning Division, Town of Milton.
- Joanne Lopata, Our Lady of Mount Carmel Roman Catholic Church.
- Robert von Bitter, Archaeological Data Coordinator, Ontario Ministry of Culture, Toronto.

3.0 DESCRIPTION OF THE ENVIRONMENT

3.1 Introduction

A cultural heritage and archaeological study was conducted for an approximately 20 kilometre stretch of various roads straddling the City of Hamilton and the Regional Municipality of Halton plus the roughly 28 kilometre stretch of Highway 6 between Highway 401 and Highway 403. While this study is based on a previous Stage 1 archaeological assessment (Archaeologix 2008a) and a previous built heritage and cultural landscape assessment (Archaeologix 2008b), all of the relevant information has been included in this stand alone report and stands independently from these two assessments.

The roads discussed in this study have been selected as alternative haul routes to potentially service a new aggregate quarry, five alternative haul routes having been identified. Each route consists of a number of road segments (labelled as “links” in this report). This study surveyed the lands within approximately 100 metres to each side of the roads that were identified as possibly undergoing improvements to facilitate the quarry related traffic: parts of Centre Road (Link 1), Milborough Line (Link 5), Campbellville Road (Links 11 and 13), Concession Road 11 East (Links 17 and 18), Twiss Road (Link 26), and Reid Sideroad (Link 27). The alternative routes run through the historic village of Campbellville (now part of the Town of Milton in the Regional Municipality of Halton), near the intersection of two railway systems at Guelph Junction, through the historic village of Mountsberg, and close to Freelton (now within the Regional Municipality of Hamilton), and north on Highway 6 through Puslinch Township to the 401.

3.2 Natural Environment

Aside from the Highway 6 stretch, the proposed haulage routes are all on the Flamborough Plain:

An isolated tract of shallow drift on the Niagara cuesta...It is an area of about 150 square miles, bounded on the northwest by the Galt Moraine, and on the south by the silts and sands of glacial

Lake Warren. A few drumlins are found scattered over this limestone plain and swamps are plentiful. The limestone has been swept bare in places...what little overburden there is on the bedrock, apart from the drumlins, is either bouldery glacial till or sand and gravel...Good soil is not plentiful in the little region: the soil is either wet or stony and shallow.

(Chapman and Putnam 1984: 129-130)

The lack of good soil and the generally wet conditions indicate low archaeological potential in many areas as will be seen below.

Highway 6 extends across a number of physiographic areas. Besides the Flamborough Plain, Highway 6 cuts through the Horseshoe Moraines area to the north (Chapman and Putnam 1984: 127-129) and then the Norfolk Sand Plain (Chapman and Putnam 1984: 153-156) and the Niagara Escarpment (Chapman and Putnam 1984: 114-122) to the south. Concerning the Horseshoe Moraines area,

[f]rom the edge of the escarpment in the Town of Caledon the moraines trend somewhat west of the Niagara Escarpment forming a belt of moderately hilly relief.... Associated with the moraines is a system of old spillways with broad gravel terraces and swampy floors. ... Good cross-sections of this landscape may be seen along ... Highway 6 from Guelph to Puslinch, or along Highway 401 across Puslinch Township.

(Chapman and Putnam 1984: 128)

Part of the southern end of Highway 6 crosses the Norfolk Sand Plain where the

sands and silts of this region were deposited as a delta in glacial Lakes Whittlesey and Warren. A great discharge of meltwater from the Grand River area entered the lakes between the ice front and the moraines to the northwest, building the delta from west to east as the glacier withdrew.

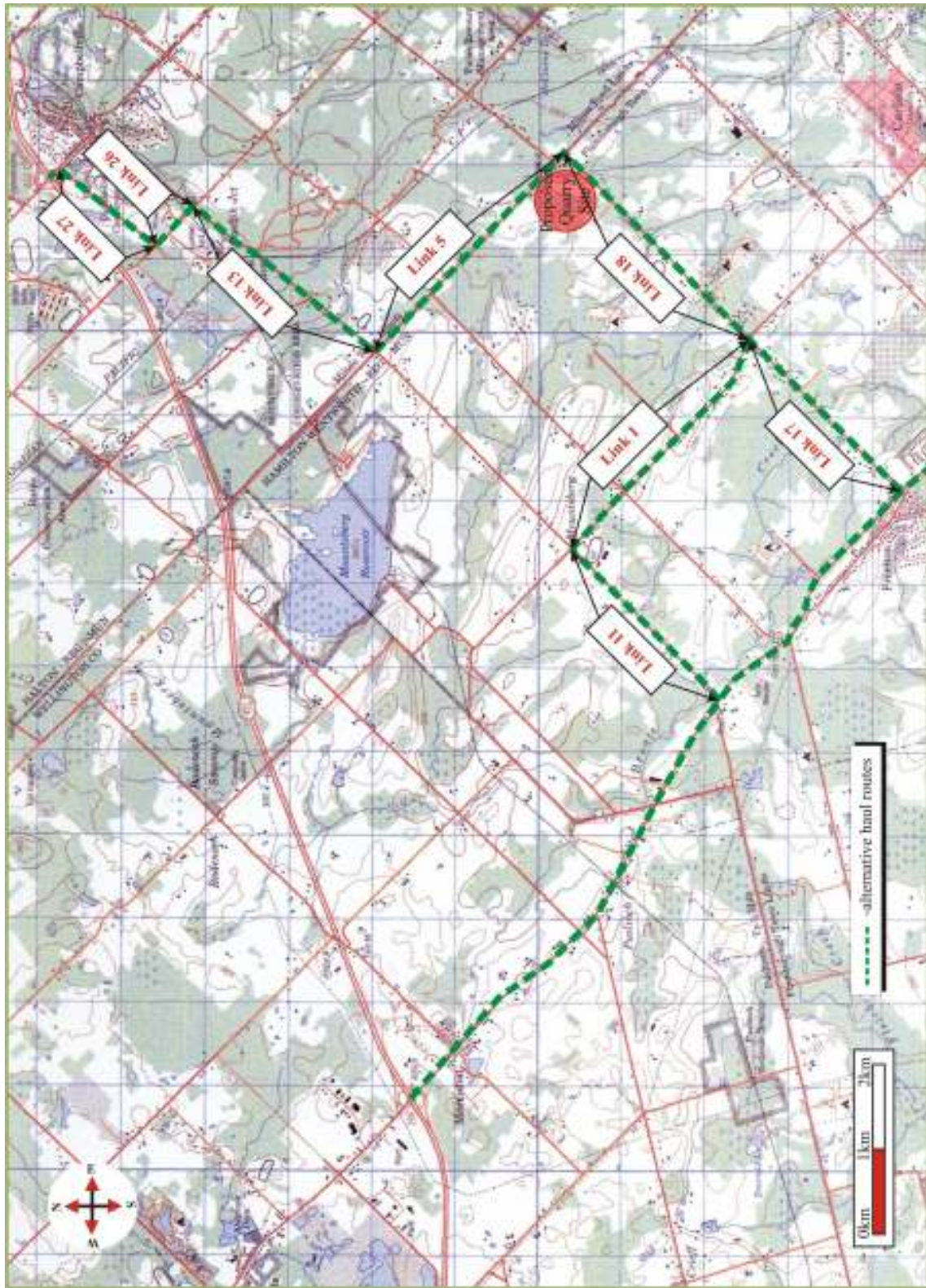
(Chapman and Putnam 1984: 154)

Finally, Highway 6 runs into Highway 403 on the brow of the Niagara Escarpment:

From the Dundas Valley northward to Forks of the Credit the brow of the escarpment increases in elevation from 800 feet to about 1,450 a.s.l in a distance of 50 miles. In this section, also, the escarpment is cut by numerous creeks.

(Chapman and Putnam 1984: 115)

Figure 1. Location of the Study Area



3.3 Existing Landscape

Generally, the roads have soft shoulders and have shallow ditches running on either side but exhibit very little construction disturbance beyond those ditches meaning that any needed road widening would most likely impact undisturbed soil. Many areas are low and wet, greatly reducing their archaeological potential. However, the routes exhibit considerable topographic variation, running across knolls in many cases that could have higher potential. Bronte Creek and numerous small streams run throughout the area meaning that nearby water sources also contribute to higher potential in certain areas. More specific field observations are presented in Section 5.4.

Figure 2. Rocks, Fence, and Trees Delineating Field Boundaries Along Concession Road 11 East



Figure 3. Ditch and Cedar Swamp Along Campbellville Road



Figure 4. Railroad and Phone Lines Along Campbellville Road



The lands included in the study area are still largely rural, comprising cultivated fields and pastureland intermixed with extensive areas of cedar swamp. Signs of the ways in which the earliest settlers impacted the land can still be seen in the boulders lining and separating fields, indicative of the difficult job of clearing the rocky land (Figure 2). More recent effects can be seen in the paved roads, the ditches along the roads, railroad lines, and telephone poles (Figures 3 and 4). Although few nineteenth-century fences were observed along the roads surveyed, several residents had built reproductions of the rail and stump fences erected by the area's pioneers (Figures 5 and 6). Again, more specific field observations are presented in Section 5.4.

Figure 5. Rail Fence At 77 Campbellville Road



Figure 6. Segment of Stump Fence Along Centre Road



3.4 Proposed Modifications to Existing Road Cross-Sections

3.4.1 Introduction

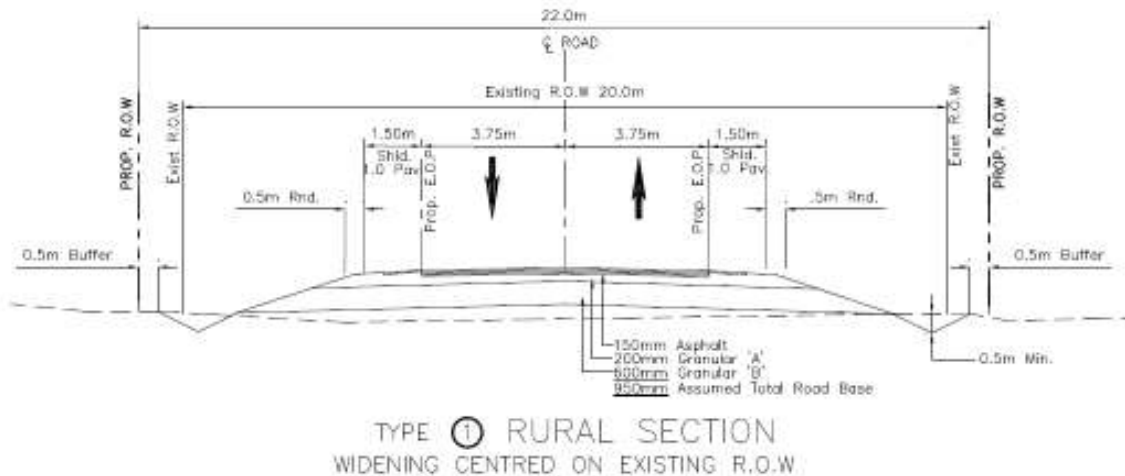
Also important to consider are the proposed road cross-sections that could modify the environment described here. For this study two types of cross-sections are proposed: rural (requires property acquisition) and urban (within the existing right-of-way). For the purpose of the analysis the rural cross-section was applied as it has the most significant impacts due to property acquisition and was therefore deemed more conservative. However, given the challenges that can be associated with land acquisition, the urban design that fits the existing right-of-way was also given consideration. It was concluded that this design would not require land acquisition however it would have a more significant impact on the existing character of the road and has a higher associated cost of construction.

Figures 7 to 10 illustrate the proposed road bed design and show rural and urban alternative cross-sections for both Type 1 and Type 3 sections.

3.4.2 Type 1

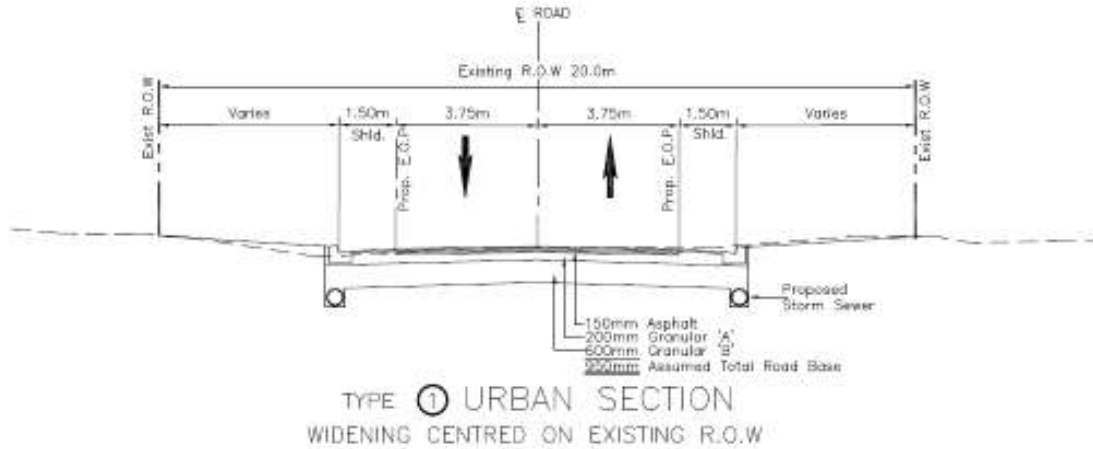
With the rural cross-section the proposed right-of-way is 2.0m greater than the existing 20m right of way. This cross-section allows for 3.75m travel lanes, 1.0m paved shoulder, 0.5m gravel shoulder, 0.5m rounding, and a drainage ditch.

Figure 7. Type 1 Rural Cross-Section



With the urban cross-section the proposed right-of-way fits into the existing 20m right-of-way. The cross-section allows for 3.75m travel lanes, and a 1.5m paved shoulder with curb and gutter.

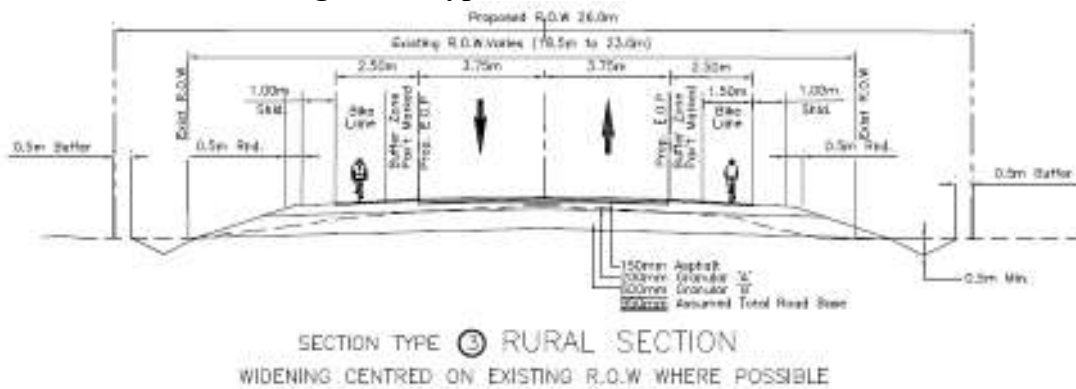
Figure 8. Type 1 Urban Cross-Section



3.4.3 Type 3

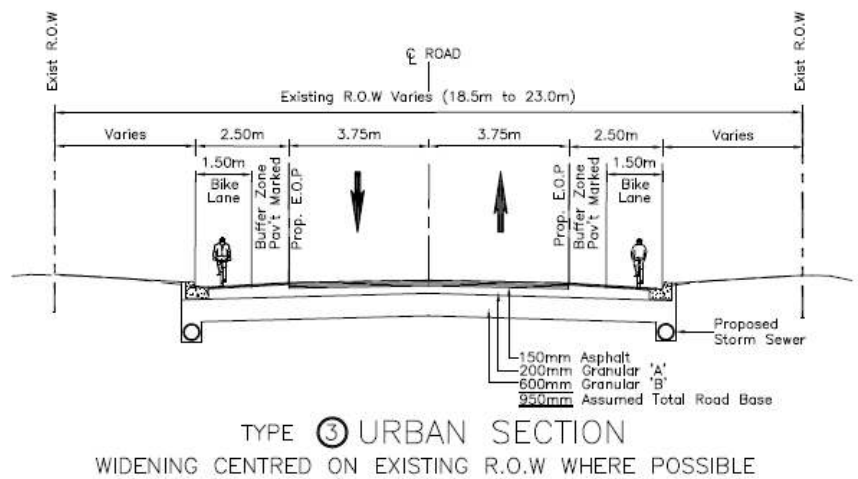
With the rural cross-section the proposed right-of-way is 3m to 7.5m greater than the existing right-of-way depending on the varying existing cross-section. This cross-section allows for 3.75m travel lanes, 1.0m paved buffer, 1.5m paved bike lane, 1.0m gravel shoulder, 0.5m rounding, a drainage ditch and a 0.5m buffer.

Figure 9. Type 3 Rural Cross-Section



With the urban cross-section the proposed right-of-way can be fit into the existing right-of-way that varies from 18.5m to 23m. The cross-section allows for 3.75m travel lanes, a 1.0m paved buffer, a 1.5m paved bike lake, and curb and gutter with a minimum boulevard of 3m.

Figure 10. Type 3 Urban Cross-Section



3.4.4 Final Notes

It is important to note that both Type 1 and Type 3 section designs do not account for any changes in the existing profile and assume that widening is at existing profile grade.

While the urban cross-section fits into the existing right-of-ways, the storm sewer infrastructure and appurtenances increase the construction costs approximately 50 percent over the rural design. It is a trade off between the cost (and challenge) of purchasing land and constructing a more expensive infrastructure.

Applying the rural cross-section that would require land acquisition is a conservative approach for haul route comparative evaluation purposes. The decision on which cross-section to move forward with would be decided at the detailed design stage of an Environmental Assessment when pavement recommendations are finalized. Typically, resolution of the design details would occur during the subsequent Municipal Class EA process.

4.0 ANALYSIS CRITERIA AND INDICATORS

4.1 Assessing Standing Cultural Heritage Resources

The assessments in this study deal with heritage resources as recommended under several pieces of legislation and officially recognized guidelines. In Section I.1.(1), the *Environmental Assessment Act* includes as part of its definition of “environment” both “the social, economic and cultural conditions that influence the life of humans or a community” and “any building, structure, machine, or other device made by humans.” The Ontario *Provincial Policy Statement* (Government of Ontario 2005) prescribes that “*Significant built heritage resources and significant cultural heritage landscapes shall be*

preserved” (2.6.1). Section 2 of the *Ontario Heritage Act* dictates that “Significant built heritage resources and cultural heritage landscapes will be preserved” (2.5.1).

“Built heritage” and “cultural heritage landscapes” are very inclusive terms, thus necessitating comprehensive investigations. Both come under the heading “man-made heritage,” explained in the *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (Government of Ontario 1980) published by the Ontario Ministry of Culture: “When speaking of man-made heritage we are concerned with the works of man and the effects of his activities in the environment rather than with movable human artifacts or those environments that are natural and completely undisturbed by man.”

The *Provincial Policy Statement* defines “built heritage resources” as “*significant* buildings, structures, monuments, installations or remains associated with architectural, cultural, social, political, economic or military history and identified as being important to a community.” These are abbreviated as “BHF” for “Built Heritage Feature” in Section 5.4.

A range of examples is included on the Ministry of Culture website: “At a micro-scale level, there are individual buildings ranging from houses to hydro-electric generating stations, defined open spaces ranging from small cemeteries to waterfront parks, and discrete purpose-built structures ranging from century-old stone bridges to silver mine head frames.” As these examples indicate, the concept of built heritage applies to individual buildings of either a private or public nature (e.g., houses, barns, city halls, churches), industrial and utilitarian artifacts (e.g., bridges, lime kilns, culverts), and landscapes that have been designed to serve a specifically human purpose (e.g., cemeteries, parks, promenades, streetscapes). The process of producing a thorough evaluation of their heritage significance involves the consideration and balancing of numerous factors: the age of the resource, the quality of its design, its mode of construction, the importance of architects or contractors responsible for its erection, the importance of its owners or inhabitants, its role in relation to significant events or movements in the area where it is situated, its state of preservation (i.e., the extent to which its original features and character have been maintained), its condition, its uniqueness or its value as a representative of a distinctive local type, its landmark status, and its visual and/or thematic role within its immediate topological and geographic context.

The *Provincial Policy Statement* defines a “cultural heritage landscape” as “a defined geographical area of heritage significance which has been modified by human activities and is valued by a community.” This is abbreviated as “CLU” for “Cultural Landscape Unit” in Section 5.4.

The Ministry of Culture has defined three types of cultural landscapes: *defined landscapes*, “which have been intentionally designed”; *evolved landscapes*, “which have grown organically”; and *associative landscapes*, “those with powerful religious, artistic,

or cultural associations of the natural element.” Such landscapes may comprise “built” heritage in the sense that they have elements of human design, construction, and manipulation, and they may affect the evaluation of the individual built structures they envelop. The process of evaluating heritage landscapes involves research into many different facets of its prehistoric and historical pasts, comprehensive field surveys to identify relationships between the human occupation of the land and its present form, and interviews to determine facets of the landscape with important associations for its present occupants and the wider communities of which it forms a part.

4.2 Assessing Potential for Precontact Aboriginal Archaeological Sites

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Archaeologix Inc. applied archaeological potential criteria commonly used by the Ministry of Culture (Government of Ontario 1997) to determine areas of archaeological potential along the study corridor. These variables include: distance to various types of water sources, soil texture and drainage, glacial geomorphology, and the general topographic variability of the area.

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils, or topographic variability, may also indicate archaeological potential. Finally, extensive land disturbance can eradicate archaeological potential (Wilson and Horne 1995).

In archaeological potential modeling, a distance to water criterion of 300 metres is generally employed for primary water courses, including lakeshores, rivers and large creeks, while a criterion of 200 metres is applied to secondary water sources, including swamps and small creeks. Excluding the study area along Highway 6, there are a number of small creeks crossing the proposed haul routes, while Bronte Creek runs along the western edge of these haul routes.

Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. The study area has a number of knolls on either side of various routes and in some cases contributing to the landscape over which the road runs. This topography increases archaeological potential for aboriginal sites since these knolls provide excellent visibility to survey the surrounding landscape and an easily defensible location. With respect to soil texture, aboriginal groups preferred well-drained lighter (sandy) soils to heavier soils. The soils of the study area are stony sands and clays; consequently, they decrease the archaeological potential for aboriginal sites.

4.3 Assessing Potential for Historic Archaeological Sites

The criteria used by the Ontario Ministry of Culture to determine potential for historic archaeological sites include the presence of: 1) particular, resource-specific features that would have attracted past subsistence or extractive uses; 2) areas of initial,

non-Aboriginal settlement; 3) early historic transportation routes; and 4) properties designated under the Ontario Heritage Act (Government of Ontario 1997: 14). The research outlined below will indicate that criterion 1 (the numerous water sources in the area) and criterion 3 (the nineteenth century road system still in existence and other historic routes) are important here.

5.0 ANALYSIS

5.1 Data Sources

The Stage 1 Archaeological Overview/Background Study, in compliance with the provincial regulations and standards set out in the “*Archaeological Assessment Technical Guidelines*” (Government of Ontario 1993), and the Built Heritage and Cultural Landscape Assessment, in accordance with guidelines set out in the “*Provincial Policy Statement*” (Government of Ontario 2005), included:

- a review of the land use history, including pertinent historical, environmental, and archaeological data to determine areas of archaeological potential and heritage significance along the route;
- an examination of the National Site Registration Database to determine the presence of known archaeological sites in and around the project area; and
- a visual evaluation of the study corridor.

5.2 Assumptions

While acknowledging that Highway 6 (Links 23, 24, and 25) might be part of the preferred haul route, it was assumed that very little impact would be had upon this road given it is already a major highway and that no major changes would be expected in order to accommodate the extra traffic associated with the aggregate quarry. No other assumptions about the built heritage or archaeological potential of the potential haul routes were made prior to consulting the data sources (listed in Section 5.1) according to the methods outlined in Section 5.3.

5.3 Methodology

The study area was visually surveyed on February 25, 2008 by Jeffrey Muir, B.A., and Nancy Tausky, M.Phil. Weather conditions during the field assessment were overcast and cool. In this survey, potentially significant heritage sites were identified to the extent that they could be seen and evaluated from a roadside viewing point, and each of the identified sites was photographed. It was subsequently determined which of these sites were listed on inventories produced by the Town of Milton and the City of Hamilton, and which were designated under the Ontario Heritage Act. Archaeological potential was also evaluated visually and photographed at the same time. This field visit

was used to develop the assessment of archaeological site potential and to determine the degree to which development and landscape alteration may have affected that potential.

In addition to the visual evaluation of the subject area, background cultural heritage archaeological research was conducted at the Ministry of Culture Office in Toronto, the Sauer Map Library in the Department of Geography at the University of Western Ontario, and the corporate library of Archaeologix Inc. plus a survey of relevant materials available through the internet.

5.4 Results

5.4.1 Cultural Heritage Results

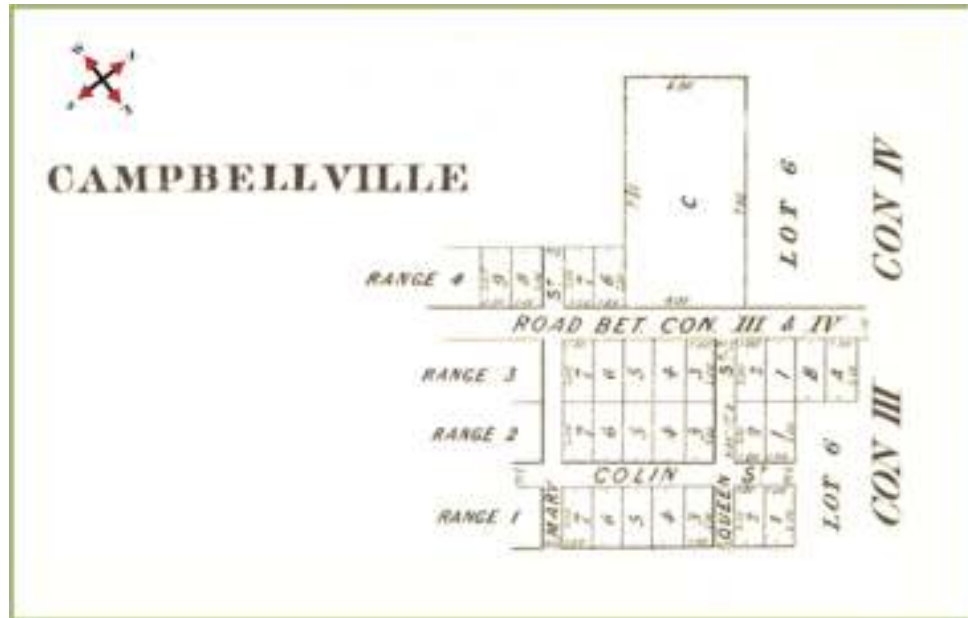
5.4.1.1 Cultural Development of the Study Area

The study area is located within portions of the Geographic Townships of Nassagaweya and Nelson in Halton County and Flamborough East and Flamborough West in Wentworth County. The preferred haul routes run through the historic village of Campbellville and Mountsberg, near the intersection of two railway systems at Guelph Junction, and close to Freelon.

Nassagaweya and Campbellville (Figure 11)

The southern section of Nassagaweya Township was surveyed by Reuben Sherwood in 1819 (Gentilcore and Dorkin 1973: 68). The first settlers arrived soon after, many coming from Scotland and England either directly or following a brief sojourn in the United States. One of these was a Scot, John Campbell, who purchased Lot 6, Concession 3 in 1832. The Sixteen Mile Creek flowed swiftly through this property, and Campbell proceeded to build a bridge and dam over the creek and then erect a sawmill. This important industrial catalyst attracted other enterprises and entrepreneurs. A settler named Davidson had established a blacksmith shop in the hamlet by 1842, and James Menzies and son later practiced that same craft. Charles Knowles built a tannery in 1848, and Robert Meade opened a shoe shop in 1854. The post office was established in the local store in 1852 with James M. McGriffin as postmaster. (Nassagaweya 1949: 19-36, Library and Archives Canada 2007). Campbellville's population grew to 200 in 1857 (Carter 1984:187). The Terra Cotta brick plant opened in 1889 and a wagon shop two years later. Campbellville's first church was St. David's Presbyterian. The congregation worshiped in a frame structure built in 1869, and later in a brick church erected in 1891. Children attended school outside of the village until the first public school was built in 1927 by John M. Ware, a noted local builder (Nassagaweya 1949:64-66).

Figure 11. Map of Campbellville in the *Illustrated Historical Atlas of Halton County*



Road and Railway Development

Road development in Nassagaweya followed the standard Upper Canada/Ontario pattern. As early as 1849, enterprising citizens in Nelson and Nassagaweya townships formed a joint stock company to macadamize the Guelph Line, the road used by stagecoaches traveling between Halton's southern communities and Guelph (Nassagaweya 1949: 46, 72). The money raised was only sufficient to grade a few hills, some in Campbellville. DeRottenburg's 1850 map of the principal communications in Canada West clearly identifies the Guelph Line through these townships as a major north/south traveled route. Nassagaweya Township acquired the use of a stone crusher and steamroller early in the 20th century from nearby Trafalgar Township, and began surfacing roads in stone. One of the first to be done was part of the Guelph line north of Campbellville (Nassagaweya 1949:70).

Counties were empowered to create their own county road systems by the provincial legislature in 1907, and this enabled Halton County to begin spending more on roads under its jurisdiction (Clarke 1955:181). A detailed investigation of road improvements is not within the scope of this study, but a survey of Ontario road maps suggests that, with the exception of the Guelph Line, the other roads in this section of the corridor were still gravel-covered into the 1950s (Government of Ontario 1955).

Just west of Campbellville is the intersection of two railway lines at Guelph Junction. The Credit Valley Railway Company (CVR) was formed in 1871 to build a railroad from Toronto to Orangeville, and the line through Campbellville was completed by 1879 (Ontario Railway History Page 2006). Halton County Council made an agreement with that Company to spend money on county roads in the vicinity of the line

in exchange for the establishment of a station and warehouse at both Hornby and Campbellville (Clarke 1955: 72).

The Guelph Junction Railway (GJR) was designed by citizens of that city to link Guelph with markets on Lakes Huron and Ontario by building a line to join the Grand Trunk Railway to the CVR. This line opened for business in 1888, by which time the Canadian Pacific Railway had taken over the operation of both the GJH and the CVR lines (Ontario Railway History Page 2006). Through its proximity to Guelph Junction, Campbellville was linked to markets on both the upper and lower Great Lakes.

Routes Through Flamborough

Some of the alternative haul routes use Campbellville Road. Campbellville Road cuts through the east end of the study area, west through Nassagaweya and into East Flamborough where it runs between the 13th and the 12th concessions of that township, traveling through the hamlet of Mountsberg on its way to Highway 6. Route 4 leaves the Campbellville Road at the line between the geographic counties of Halton and Wentworth (now the Milborough Townline), travels southeast until it meets Concession 11 East, and then travels southwest to Highway 6 at Freelton.

Mountsberg and Freelton are located within the northern part of the original Flamborough Township (later divided into East and West in 1854), surveyed in 1797-8 by John Stegmann, with additional work by Augustus Jones and Alexander Aitken (Gentilcore and Dorkin 1973: 56, Page and Smith 1875: xi-xii). The townline dividing the two townships was not a major thoroughfare until the province inaugurated its highway system in the 1920s, took over the road from Wentworth County, graded the steep hill leading north to Clappison's Corners, and created Highway 6 which then linked Port Dover on Lake Erie to Owen Sound on Georgian Bay (West Flamboro Centennial Committee 1950: 197). Business and traffic which had once used the more westerly Brock Road could now move between the "head of the lake" and Guelph through Freelton.

Mountsberg

Mountsberg owes its genesis and name to Josiah Mount, from Leicestershire, England, who settled on the south half of Lot 7, Concession 12, East Flamborough Township, at the crossroads of the present Centre and Mountsberg roads, in 1835. His family of four sons – John, Richard, Matthew and Charles – brought skills and enterprise to their new home (Waterdown and East Flamborough Centennial Committee 1967: 27). The two elder brothers cleared land and farmed, while Matthew established a blacksmith and carriage shop where Charles worked as a carpenter. When a post office was established in the general store in 1863 with M. M. Crocker as postmaster, Mountsberg was the obvious name to give the growing hamlet (Library and Archives Canada 2007). The office closed in 1927 after rural mail delivery was introduced (Carter 1984: 803).

Sawmills were built in the area: one was run by the O'Donnell family on Twelve Mile Creek, which flows east of Centre Road on its way to Bronte on Lake Ontario, and another, which used steam power, was built by John McDougall. Lumber from the mills was used by the village shoemaker, James McCormack, who also crafted doors and window sashes. At times the village boasted a mason, a tailor, and a well-stocked general store that closed in 1931 after the post office left the hamlet. Mountsberg's brick schoolhouse was built north of the crossroads (Figure 12), on the southwest corner of Campbellville and Centre roads, in 1866 (see BHF 13). It closed as a school a century later, but still serves the hamlet as the Mountsberg Community Centre (Waterdown and East Flamborough Centennial Committee 1967: 3, 27-29, 33, 34). Families in Mountsberg could attend the Baptist Church north of the school (see BHF 5), or the Methodist Church on the Mountsberg Road, now relocated to the Westfield Pioneer Village in nearby Rockton, Ontario (Rootsweb 2006). Roman Catholics worshiped in neighbouring Freelton at Our Lady of Mount Carmel Church (see CLU 6). The population of Mountsberg was 21 in 1885 and 80 in 1892 (Carter 1984: 803).

Figure 12. Photograph of Mountsberg School (S.S. No. 6 East Flamborough) in 1909 (Waterdown and East Flamborough Centennial Committee 1967)

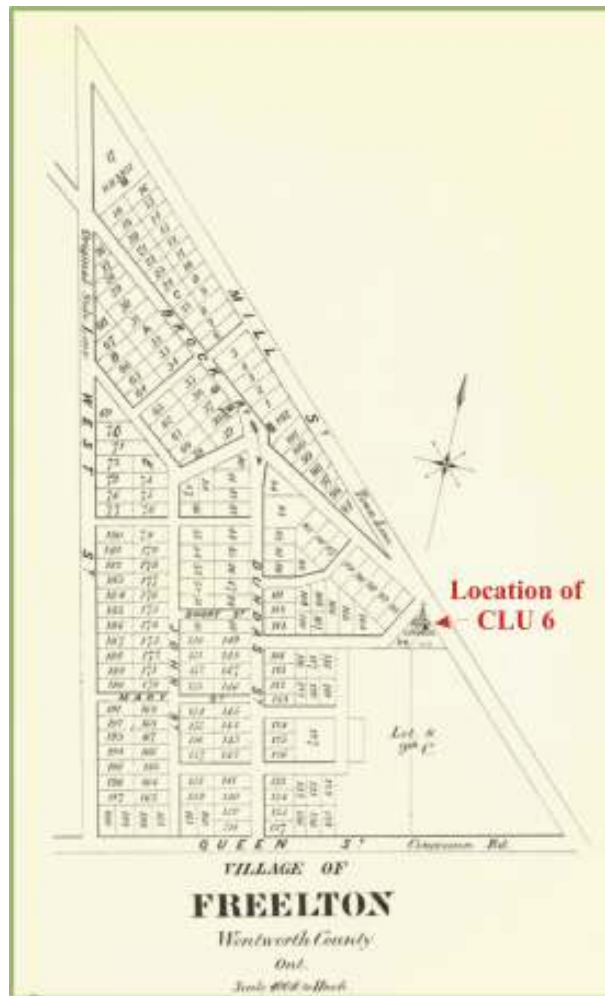


Freelton (Figure 13)

The village of Freelton (now part of the City of Hamilton), roughly triangular in shape, is located on Highway 6 at the Brock Road where the historic townships of East and West Flamborough and Beverley meet. The village was named for Patrick Freel, its first settler, who built a hotel there in 1840 (Mika 1981: 72). His brother-in-law, Thomas Campbell, built another hotel locally 1854, the same year that Freelton's post office was established with James F. Douglas as postmaster (Mika 1981: 72, Library and Archives Canada 2007). Edward Hunt was the village's first shopkeeper, and George Currie its first blacksmith. As the village grew, other enterprises were developed – a gristmill, a carriage works (it made buggies, sleighs, and wagons), carpentry shops, a sawmill, and a watchmaker's shop. The professions were represented in Freelton by doctors, teachers, and a banker at the branch of the Bank of Toronto (Mika 1981: 72; West Flamboro Centennial Committee 1950: 125-127).

Freelton's first school was built just west of the village on William Manary's property. After this log structure burnt, it was replaced by a frame school on Abraham Purnell's land north of the village. When the student population outstripped that space, parents lobbied the County for a larger structure. A new stone school was built in 1864 on land owned by Francis Whitehead, again north of the village, in a corner known as "Beechgrove" (West Flamboro Centennial Committee 1950: 121, Waterdown-East Flamborough Heritage Society 2005: 4).

Figure 13. Map of Freelton in the *Illustrated Historical Atlas of the County of Wentworth*



Freelton also was home to several churches. Baptists from Mountsberg and Freelton first attended church in Dundas, and also met for worship nearer home. This "Brock Road Branch" organized their own church, meeting in homes and in the Mountsberg School until they built a church on the northwest corner of Campbellville and Centre roads in 1852 (Waterdown-East Flamborough Heritage Society 2003). Roman Catholics from Ireland settled in the northern parts of Flamborough and southern parts of

Puslinch in the 1830s and 1840s, giving this area the name of “Little Ireland.” As early as 1855 Miss Freel was giving them a Catholic education, and the following year a Catholic mission church up the Brock Road in Morrision began sending a priest to Freelton for regular ministry. Patrick Freel sold the Diocese of Hamilton an imposing site for a church in 1865, and Our Lady of Mount Carmel was built. Destroyed by fire in 1889, the church was rebuilt in the Gothic style by stonemason James Davidson (Waterdown-East Flamborough Heritage Society 2002, Green *et al.* 2003: 116-117). In 1967, as a Centennial project, a stylistic sympathetic addition, Marion Hall, was erected adjoining the church on its south side (Lopata 2008).

Figure 14. Photograph of Our Lady of Mount Carmel Roman Catholic Church, Freelton, Ontario (Green *et al.* 2003)



Two Methodist Churches were established in Freelton. The Wesleyan Methodists worshiped at Beechgrove on land donated by the civic-minded Francis Whitehead in 1859, and the New Connection Methodists built a church in the village in 1863. The two congregations united in 1872, worshipping in the Beechgrove church, and ultimately joining the United Church of Canada (West Flamboro Centennial Committee 1950: 135). The Jehovah’s Witnesses established a church in Freelton in the twentieth century (Mika 1981: 72).

Freelton also boasted a fair. First organized in 1888, this was held in various village locations – on the grounds of the Catholic Church, in MacFarlane’s Hall, and then in a renovated stone mill. It boasted displays of farm produce, exhibitions of livestock, local crafts, sideshows, horse races and foot races. Local agriculturalists also organized a Farmer’s Institute, which lasted until the province posted an agricultural representative in each county (West Flamboro Centennial Committee 1950: 125-127). Freelton’s population was 150 in 1857, 310 in 1976 (Carter 1984: 422), and 1013 in the 2006 census (Industry Canada 2006).

5.4.1.2 Cultural Impact on the Landscape

Most of the noteworthy cultural sites involved buildings, or in one case a waterscape, significant because of its associations with past industry. Twenty-three potentially significant sites were identified in the area. The seventeen built heritage sites include houses and barns. The six cultural landscape units comprise farmsteads, homesteads, one village complex, one church complex, and one waterscape.

As shown in Table 2, only two sites were identified in the Geographic Township of Nassagaweya, now part of the Town of Milton in the Regional Municipality of Halton. Most of the identified sites were in the Geographic Township of Flamborough East, now in the City of Hamilton, along Campbellville Road, Centre Road, and Concession Road 11 East. Also identified was an important Cultural Landscape Unit: the grounds and buildings associated with Our Lady of Mount Carmel Roman Catholic Church in the village of Freelton, located in the geographic Township of Flamborough West, also now part of the City of Hamilton.

Section 5.4.1.3 organizes the built heritage and cultural landscape inventory by numbered BHF or CLU as tied into Figures 15 and 16.

Figure 15. Built Heritage Features in the Geographic Townships of Flamborough West and Flamborough East





Figure 16. Built Heritage Features in the Geographic Township of Nassagaweya




5.4.1.3 Cultural Impact on Landscape

Built Heritage Features

1044 Campbellville Road	
	
Built Heritage Feature:	BHF 1
Address:	1044 Campbellville Road
Feature Type:	House
Date or Period of Construction:	<i>circa</i> 1860-1890
Facing Material:	Red brick
Description:	A one-and-one-half-storey house with a steep, multi-gabled roof, two high chimneys, and windows with segmental or pointed arches. The two front gables are ornamented with decorative bargeboards in contrasting styles. The northeast wing also features projecting bay windows on the ground floor, each with a hip roof and bracketed eaves. The differing styles of bargeboards, along with the mixture of Gothic Revival and Italianate detailing, suggests that the house may have been built in stages. The front verandah has been partially enclosed.
Architectural Style:	Gothic Revival, with some Italianate influence
Historical Associations:	Settlement of Nassagaweya Township; regional rural architecture

1053 Campbellville Road	
	
Built Heritage Feature:	BHF 2
Address:	1053 Campbellville Road
Feature Type:	House
Date or Period of Construction:	<i>circa</i> 1860-1880
Facing Material:	Brick
Description:	A one-and-one-half-storey house with a steep, multi-gabled roof and gable windows with pointed arches.
Architectural Style:	Gothic Revival influence
Historical Associations:	Settlement of Nassagaweya Township; regional rural architecture

137 Campbellville Road	
	
Built Heritage Feature:	BHF 3
Address:	137 Campbellville Road
Feature Type:	House
Date or Period of Construction:	<i>circa</i> 1840-1870
Facing Material:	Stone
Description:	An unusually substantial one-and-one-half-storey fieldstone house with a shallow gable roof, the ridge parallel to the symmetrical façade. A cross gable over the centre door is likely a later addition.
Architectural Style:	Late Georgian
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; nineteenth-century Ontario stonework
Other Comments:	Listed in the City of Hamilton heritage inventory, <i>Hamilton's Heritage</i> , vol. 2.

178 Campbellville Road



Built Heritage Feature:	BHF 4
Address:	178 Campbellville Road
Feature Type:	House
Date or Period of Construction:	<i>circa</i> 1870 to 1890
Facing Material:	Original facing material obscured by modern siding
Description:	A one-and-one-half-storey house with a shallow gable roof, the ridge parallel to the symmetrical façade, and a dormer gable over the centre door. The front gable is adorned with a pointed window and decorative bargeboard.
Architectural Style:	Vernacular, exhibiting both Georgian and Gothic Revival influence
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture
Other Comments:	The front storm porch was not part of the original house.

241 Campbellville Road



Built Heritage Feature:	BHF 5
Address:	241 Campbellville Road
Feature Type:	Mountsberg Baptist Church
Date or Period of Construction:	1922
Facing Material:	Red brick
Description:	The brick building sits on a cement block foundation, the façade in its gable end. The main door is centred, below an oculus in the gable; round-headed windows light the front and both sides of the building; each section of the sash window is outlined by a narrow strip of coloured glass, and all windows are surmounted by a concrete keystone and brick voussoirs. The shallow gable roof has pronounced returned eaves. Shallow buttresses support the corners and sides of the building.
Architectural Style:	Classical Revival
Historical Associations:	Settlement of East Flamborough Township; Ontario church architecture; the Baptist Church
Other Comments:	See CLU 3.

Mountsberg Baptist Cemetery




Built Heritage Feature:	BHF 6
Address:	241 Campbellville Road
Feature Type:	Mountsberg Baptist Cemetery
Date or Periods of Construction:	1852-present
Description:	The cemetery dates from the opening of the first church on this site in 1852, and a wide variety of markers indicate the many periods of its history.
Historical Associations:	Settlement of East Flamborough Township; Mountsberg area families; Cemetery history and design; the Baptist Church in Ontario
Other Comments:	See CLU 3.

245 Campbellville Road



Built Heritage Feature:	BHF 7
Address:	245 Campbellville Road
Feature Type:	House; Mountsberg Baptist Church Rectory
Date or Periods of Construction:	<i>circa 1870 to 1888; probably reclad in 1922</i>
Facing Material:	Red brick
Description:	A one-and-one-half-storey house with intersecting gable roofs. The three-bay façade is symmetrical, with a centre door and segmental-arched windows to each side in the --centre gable. The brick and the brickwork of the rectory match that of the 1922 church, although the shape and style of the house are earlier.
Architectural Style:	Nineteenth-century vernacular farmhouse type
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; Ontario church history
Other Comments:	See CLU 3.

1913 Centre Road	
	
Built Heritage Feature:	BHF 8
Address:	1913 Centre Road
Feature Type:	House
Date or Periods of Construction:	Probably late nineteenth century
Facing Material:	Red brick
Description:	A one-and-one-half-storey house with a gable roof, its main ridgeline parallel to the façade, a projecting gable wing, and a dormer gable over the front door. Most windows are surmounted by segmental arches, echoed in the brick voussoirs; the window in the dormer gable is round-headed. While the shape of the house suggests a nineteenth-century origin, the house has obviously undergone some extensive alterations: the verandah is new, the windows are adorned with faux muntin bars, and the building may have been reclad.
Architectural Style:	Vernacular farmhouse style, with Gothic Revival influence
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture
Other Comments:	The house is set back a considerable distance from the road. The small board-and-batten barn north of the house is also worthy of note.

1916 Centre Road



Built Heritage Feature:	BHF 9
Address:	1916 Centre Road
Feature Type:	House: the Hall Parry Home
Date or Periods of Construction:	<i>circa</i> 1835-1860
Facing Material:	Cut stone
Description:	A one-and-one-half-storey house with a shallow gable roof, a pronounced cornice, and returned eaves. The ridgeline is parallel to the symmetrical three-bay façade. Stone voussoirs support the walls above the windows and door. A transom surmounts the broad front door. There are internal chimneys at both ends of the house.
Architectural Style:	Greek Revival
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; Ontario stone architecture; the Hall and Parry families.
Other Comments:	Designated under Part IV of the <i>Ontario Heritage Act</i>

2037 Centre Road



Built Heritage Feature:	BHF 10
Address:	2037 Centre Road
Feature Type:	House:
Date or Periods of Construction:	Possibly mid-nineteenth century
Facing Material:	Stucco
Description:	A two-storey hipped roof house, with a three bay façade and a centre door. The windows have square heads. A bay window protrudes from the south side of the house. The verandah across the front appears to date from a later period than the rest of the house.
Architectural Style:	Georgian influence
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; the development of Mountsberg
Other Comments:	Although close to the road, the house is largely secluded behind a thick hedge.

2056 Centre Road




Built Heritage Feature:	BHF 11
Address:	2056 Centre Road
Feature Type:	House
Date or Periods of Construction:	<i>circa</i> 1890-1910
Facing Material:	Rusticated cement block
Description:	A two-storey L-shaped house with a hipped roof and broad, bracketed eaves. The windows of the projecting wing comprise a large glass bottom section and a narrower transom probably designed to hold stained glass. The two-storey porch within the ell is a later addition, though it may have replaced an earlier porch in that position.
Architectural Style:	Late Italianate
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; Mountsberg village
Other Comments:	There is also a gambrel-roofed barn on the property.

2125 Centre Road



Built Heritage Feature:	BHF 12
Address:	2125 Centre Road
Feature Type:	House
Date or Periods of Construction:	Early twentieth century
Facing Material:	Brick
Description:	A rectangular house faced with bricks that achieve a textured, multi-coloured appearance through the intermixture of black bricks and bricks in various hues of the dominant brownish red colour. The façade features three bays, with a centre door, paired windows in the adjoining bays of the lower floor and single windows on the second storey; the house is two bays deep. The windows have segmental arches, those on the first floor surmounted by brick voussoirs. The house has a hipped roof, with broad eaves and a hipped roof dormer, the latter likely a later addition to the building.
Architectural Style:	Four-square, showing Georgian Revival influence
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; development of the village of Mountsberg

Southwest corner of Centre Road and Campbellville Road	
	
Built Heritage Feature:	BHF 13
Location:	Southwest corner of Centre Road and Campbellville Road
Feature Type:	Former schoolhouse
Date or Construction:	1866; later addition
Facing Material:	Buff-coloured brick
Description:	<p>A one-storey building with a shallow gable roof and with the façade in the gable end facing Centre Road. In addition to the returned eaves, the oculus, and the large round-headed window that can still be discerned in the façade, the front of the building also contained the traditional two doors (for boys and girls, respectively) found on period schoolhouses. The three broad windows along each side occupy approximately the space of the original windows, though the windows themselves have been replaced. The building now serves as the Mountsberg Community Centre; a sign in front proudly announces the fact that the old schoolhouse is still serving the community. It is regrettable, though, that the cement block addition now fronting the building largely obscures the handsome schoolhouse façade.</p>
Architectural Style:	Classical Revival
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; the Mountsberg community; education in Ontario; schoolhouse architecture
Other Comments:	See CLU 3.

232 Concession Road 11 East



Built Heritage Feature:	BHF 14
Address:	232 Concession Road 11 East
Feature Type:	House
Date or Periods of Construction:	<i>circa</i> 1880—1900
Facing Material:	Now faced with a highly textured stucco treatment
Description:	A one-and-one-half-storey L-shaped house two intersecting gable wings featuring relatively high-pitched roofs. A back wing faced with modern siding appears to be an addition to the original house, which itself has seen significant alterations.
Architectural Style:	Vernacular
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture
Other Comments:	Listed in the City of Hamilton heritage inventory, <i>Hamilton's Heritage</i> , vol. 2.

247 Concession Road 11 East



Built Heritage Feature:	BHF 15
Address:	247 Concession Road 11 East
Feature Type:	House
Date or Periods of Construction:	<i>circa</i> 1850-1870
Facing Material:	Original facing material now obscured by a modern siding
Description:	A one-and-one-half-storey with a shallow gable roof, the ridge parallel to the asymmetrical three-bay façade. The house has a back wing of indeterminate vintage and a recently constructed verandah.
Architectural Style:	Vernacular, influenced by the Georgian tradition
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture
Other Comments:	The current siding obscures both the original facing material and any significant period details.

257 Concession Road 11 East





Built Heritage Feature:	BHF 16
Address:	257 Concession Road 11 East
Feature Type:	House
Date or Periods of Construction:	<i>circa</i> 1850-1870
Facing Material:	Stucco
Description:	A two-storey house with a gable roof, the ridge parallel to the symmetrical façade.
Architectural Style:	Vernacular; late Georgian influence
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; nineteenth-century Ontario stonework
Other Comments:	Significant alterations include the exterior brick and cement-block chimneys and, possibly, the front second-storey windows, which are unusually low and close to the eaves.



385 Concession Road 11 East




Built Heritage Feature:	BHF 17
Address:	385 Concession Road 11 East
Feature Type:	House
Date or Periods of Construction:	<i>circa</i> 1840-1860
Facing Material:	Stone
Description:	A one-and-one-half-storey fieldstone house with a gable roof, the ridge parallel to the symmetrical, three-bay façade. The windows appear to have their original 6/6 composition; the front entranceway features a simple classical architrave, with no transom or sidelights. Later additions include a back wing, a side carport, and the verandah now shading the front façade.
Architectural Style:	Late Georgian
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; nineteenth-century Ontario stonework
Other Comments:	A particularly notable structure

Cultural Landscape Units

77 Campbellville Road, Homestead	77 Campbellville Road, House
	
Cultural Landscape Unit:	CLU 1
Address:	77 Campbellville Rd.
Feature Type:	Homestead, comprising two significant houses
Date or Periods of Construction:	<i>circa 1840-1860; circa 1860 to 1880</i>
Descriptions:	<p>The earlier dwelling on the property is a substantial log house built of squared timbers; it initially adopted an essentially Georgian form, with a gable roof and a symmetrical three-bay façade featuring a centre door. The door has been closed in, though its original position is marked on the wall, and a shed-roofed dormer has been added to light a loft. The second, somewhat later, house on the property is one and one-half storeys high; it also has a three-bay façade and a gable roof, this one with a steeper incline and a cross gable over the centre door. The ground-floor windows are surmounted by a signmental arch; the gable window with a simple pedimental design. The original facing material is obscured with modern siding, and the façade has been further altered with front and side additions, with a contemporary porch, and with modern “gingerbread” trim in the gable.</p>
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; log buildings
Other Comments:	The log building is highly significant within its local context, and the combination of buildings is important in showing the evolution of styles on a single property.



1873 Centre Road, Farmstead	1873 Centre Road, Barn
	
Cultural Landscape Unit:	CLU 2
Address:	1873 Centre Road
Feature Type:	Farmstead, including a house and barn
Date or Periods of Construction:	Following c. 1860
Description:	<p>A substantial stone house, one and one-half storeys high in front, but situated on a hill so as to allow an additional storey in the rear. The house has a shallow gable roof, with a cross gable over the centre door and prominently returned eaves at the gable ends. Stone voussoirs support the walls above the windows and door; a transom lights the front entranceway. Georgian influence is evident in the symmetrical three-bay façade and in the fine proportions of the façade. Both the board-and-batten siding of the barn and its high foundation are characteristic of barns in the area.</p>
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; nineteenth-century Ontario stonework; Ontario agriculture
Other Comments:	This farmstead exemplifies well a layout frequently found in the area, with the barn situated at some distance to the side of the house.




West Side of Centre Road	
	
Cultural Landscape Unit:	CLU 3
Location:	Extending along the west side of Centre Road from the schoolhouse (BHF 13) across Campbellville Road to include the Mountsberg Baptist Church, Cemetery, and Rectory (BHF 5, 6, and 7).
Feature Type:	Historical Settlement; streetscape
Date or Periods of Construction:	1852-1922
Description:	CLU 5 contains four sites that have also been identified as built heritage features along with the spaces between them. Together, they comprise the central community buildings of the historic village of Mountsberg and, as well, cater to a community that still has an active sense of identity today.
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture; Ontario church history and architecture; Ontario school history and architecture; the history and community of Mountsberg
Other Comments:	See BHF 5, 6, 7, and 13.

Concession Road 11 East at Twelve Mile Creek



Cultural Landscape Unit:	CLU 4
Address:	Concession Road 11 East at Twelve Mile Creek
Landscape Feature Type:	Waterscape
Description of Feature:	The creek winds in a characteristically meandering way in the vicinity of the road, flowing under the road through a moulded concrete slab-on-abutments bridge.
Historical Associations:	Settlement of East Flamborough Township; regional industry
Other Comments:	The creek once powered mills that played a significant role in the economy of the Mountsberg area.

353 Concession Road 11 East, Farmstead	353 Concession Road 11 East, Barn
	
Cultural Landscape Unit:	CLU 5
Address:	353 Concession Road 11 East
Landscape Feature Type:	Farmstead, comprising a house and barn
Description of House:	A one-and-one-half-storey house, faced with stucco, featuring a gable roof with the ridge parallel to the unusually wide three-bay façade. The main block of the house likely dates from between 1840 and 1865. The upper windows on the façade are later additions, disrupting the near symmetry of the original design.
Architectural Style of House:	Vernacular, exhibiting Georgian influence
Description of Barn:	A board-and-batten structure with a cut stone foundation
Historical Associations:	Settlement of East Flamborough Township; regional rural architecture
Other Comments:	Both the board-and-batten barn and the spacing of barn and house are characteristic of the area.

79 Freelton Road, Church	
	 
Cultural Landscape Unit:	CLU 6
Address:	79 Freelton Road
Feature Type:	Church complex
Date or Periods of Construction:	<i>circa</i> 1850 ff.
Description:	The complex contains several important sites: Our Lady of Mount Carmel Roman Catholic Church and the adjoining Marion Hall; its rectory; a barn that has, historically, been attached to the property; and a cemetery. The fine stone Gothic Revival church, with its adjacent tower, rose window, pointed arches, and stepped buttresses, was erected soon after a fire in 1889 destroyed an earlier, smaller, stone church built <i>circa</i> 1865. On the south side of the church sits the stone Marion Hall, built in the 1960s. Already in use before the first church was built, the cemetery predates both the earlier church and the rectory; its earliest tombstones date from the 1850s. It is still in use.
Historical Associations:	Development of Freelton and of West Flamborough Township; stone building in Ontario; Ontario church architecture; Ontario domestic architecture; barns in Ontario; Ontario cemeteries; the Catholic Church in Ontario

Morrison	
Cultural Landscape Unit:	CLU 7
Address:	Morrison
Feature Type:	Village
Date or Periods of Construction:	19th Century
Description:	The village of Morrison contains several fine nineteenth-century buildings very close to the road.
Historical Associations:	Development of Morrison
Other Comments:	Morrison was not extensively investigated but has been included for sake of completeness; it is assumed that it will not be affected substantially as it is already facing Highway 6 (see Section 5.2).

5.4.1.4 Summary

To summarize, Table 1 provides a listing of all structures individually inventoried in Section 5.4.1.3. This therefore excludes CLU 3 (Mountsberg which is broken into individually numbered BHF's already listed), CLU 4 (a waterscape), CLU 6 (Freelton), and CLU 7 (Morrison).

Table 1. Listing of Built Structures

BHF	Structure
1	House
2	House
3	House
4	House
5	Church
6	Cemetery
7	Rectory
8	House
9	House
10	House
11	House
12	House
13	House
14	House
15	House
16	House
17	House
CLU 1a	House
CLU 1b	House
CLU 2a	House
CLU 2b	Barn
CLU 5a	House
CLU 5b	Barn

In order to evaluate the heritage value of each alternative haul route, it is useful to know upon which links the BHF's and CLUs border. This summary is provided in Table 2. Some BHF's are counted under more than one link number because they are at the corner of two links (e.g. Built Heritage Feature 15 is at the corner of Link 1 and Link 17) and is included in both links as a result.

Table 2. BHF and CLU by Link Number

Link Number	Built Heritage Feature (BHF)	Cultural Landscape Unit (CLU)
1	8, 9, 10, 11, 12, 13, 15, 16	2, 3
5	1	N/A
11	3, 4, 5, 6, 7	1, 3
13	1, 2	N/A
17	14, 15	N/A
18	16, 17	4, 5
23	N/A	7 (Morrison)
24	N/A	6 (Freelton)
25	N/A	N/A
26	N/A	N/A
27	N/A	N/A

Table 3. Total Number of BHF's and CLUs By Route Number

Route	Link Number	BHF's	# of BHF's	CLUs	# of CLUs
1	17,18,23,24,25	14,15,16,17	4	4,5,6,7	4
2	1,11,18,23,24,25	3,4,5,6,7,8,9,10,11,12,13,15,16,17	14	1,2,3,4,5,6,7	7
3	5,13,23,24,25,26,27	1,2	2	6,7	2
4	5,13,17,18,23,24,25,26,27	1,2,14,15,16,17	6	4,5,6,7	4
5	1,5,11,13,18,23,24,25,26,27	1,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17	16	1,2,3,4,5,6,7	7

Table 4. Equivalency Table of CLUs

CLU	BHF equivalent
1	two houses - homestead
2	one house, one barn - farmstead
3	5,6,7,12,13 - Mountsberg
4	none - waterscape
5	one house, one barn - farmstead
6	Freelton
7	Morrison

From the data presented in Table 2 a preliminary list of all Built Heritage Features and Cultural Landscape Units by route, excluding repeated BHF's or CLUs, has been constructed in Table 3. However, CLU 3 is a redundant grouping of some built heritage features (see Table 4) and so these totals are not fully ready for the evaluation criteria tables yet (see Table 5). Table 4 outlines which Built Heritage Features make up CLU 3

and what communities, structures, and landscape features are classified as Cultural Landscape Units among the seven CLUs that have been defined.

By adding together the number of Built Heritage Features and number of structures that are included in Cultural Landscape Units (but have not been assigned a BHF number), the resulting number of structures data has been used in the Evaluation Criteria table. The number of CLUs includes all CLU identified, even if they are included among the number of structures data. While CLU 6 (Freelton) and CLU 7 (Morriston) had been identified in the inventory, they are not included in the numbers presented here since they are along Highway 6 (this assumed exclusion is discussed in Section 5.2). The data highlighted in yellow are used in the Evaluation Criteria table. The final number of structures and final number of cultural landscape units are summarized in Table 5.

Table 5. Alternative Haul Routes Including Number of Built Heritage Structures and Additional Cultural Landscape Units.

Route	# of BHF's	# of CLU structures	# of structures	# of CLUs
1	4	2	6	2
2	14	6	20	5
3	2	0	2	0
4	6	2	8	2
5	16	6	22	5

Table 6. Number of Daily Quarry Trucks in One Direction on Each Link for Each Alternative Haul Route

Link	Route 1	Route 2	Route 3	Route 4	Route 5
23	485	485	30	55	55
24	485	85	30	55	60
25	85	85	30	60	60
17	570	-	-	115	-
18	570	570	-	115	115
1	-	570	-	-	115
11	-	570	-	-	115
13	-	-	570	455	455
5	-	-	570	455	455
26	-	-	570	455	455
27	-	-	570	455	455

Finally, each built heritage feature along the haul routes will be exposed to quarry truck traffic; however, the degree of the exposure varies by alternative. In order to account for this, a truck exposure index was calculated for comparative evaluation. For example, the number of trucks that would travel along Highway 6 in Alternative 1 is very different from the number of trucks that would re-enter the study area and travel Highway 6 via Highway 401 in Alternative 3. The built heritage truck exposure index was calculated using the number of built heritage and cultural features potentially affected by truck traffic on each link and the daily number of one-directional quarry trucks on the

matching link. Table 6 shows the daily number of quarry trucks that are estimated to travel each link in one direction for each Alternative Haul Route.

To achieve a truck exposure index the following equation was applied:

$$\text{Truck Exposure Index} = \sum_{\text{Link}} \text{No. Built Heritage Features} \times \text{No. Quarry Trucks}$$

The resulting truck exposure indices are shown in Table 7.

Table 7. Built Heritage Truck Exposure Index for Each Alternative Haul Route

Route	Truck Exposure Index
Alternative 1	3,420
Alternative 2	11,400
Alternative 3	1,140
Alternative 4	1,600
Alternative 5	3,210

5.4.2 Archaeological Results

5.4.2.1 Previously Known Archaeological Resources

Table 8. Cultural Chronology for the City of Hamilton and the Regional Municipality of Halton

Period	Characteristic Elements	Time Period	Comments
Early Palaeo-Indian	Fluted Projectiles	9000 - 8400 B.C.	spruce parkland/caribou hunters
Late Palaeo-Indian	Hi-Lo Projectiles	8400 - 8000B.C.	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 - 6000 B.C.	slow population growth
Middle Archaic	Brewerton-like points	6000 - 2500 B.C.	environment similar to present
Late Archaic	Lamoka (narrow points)	2000 - 1800 B.C.	increasing site size
	Broadpoints	1800 - 1500 B.C.	large chipped lithic tools
	Small Points	1500 - 1100B.C.	introduction of bow hunting
Terminal Archaic	Hind Points	1100 - 950 B.C.	emergence of true cemeteries
Early Woodland	Meadowood Points	950 - 400 B.C.	introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	400 B.C. - A.D. 550	increased sedentism
	Princess Point	A.D. 550 - 900	introduction of corn
Late Woodland	Early Ontario Iroquoian	A.D. 900 - 1300	emergence of agricultural villages
	Middle Ontario Iroquoian	A.D. 1300 - 1400	long longhouses (100m +)
	Late Ontario Iroquoian	A.D. 1400 - 1650	tribal warfare and displacement
Contact Aboriginal	Various Algonkian Groups	A.D. 1700 - 1875	early written records and treaties
Late Historic	Euro-Canadian	A.D. 1796 - present	European settlement

Previous archaeological assessments and research surveys in the City of Hamilton and the Regional Municipality of Halton have demonstrated these areas were intensively utilized by pre-contact Aboriginal peoples. Table 8 summarizes the culture history of the two regional municipalities, based on Ellis and Ferris (1990). However, given the restrictive nature of the site search - along a 100 metre wide stretch on either side of the roads that comprise the alternative haul routes - only one site has been recorded (Table 9).

There are also another four sites located along the southern stretch of Highway 6 (Table 10).

Table 9. Registered Archaeological Sites within 100 Metres of the Proposed Haul Routes

Borden #	Site Name	Site Type	Cultural Affiliation	Researcher
AiGx-242	-	habitation	Euro-Canadian	J. Wilson

Table 10. Registered Archaeological Sites within 100 Metres of Highway 6

Borden #	Site Name	Site Type	Cultural Affiliation	Researcher
AiGx-231	Red Tulip	homestead	Euro-Canadian	P. Woodley
AiGx-232	MillGrove North	blacksmith shop	Euro-Canadian	P. Woodley
AhGx-501	Trinity I	campsite	Late Woodland	R. Sutton
AhGx-502	Trinity II	findspot	Late Archaic	R. Sutton

5.4.2.2 Historic Site Research

Table 11. Properties in the Historic County of Wentworth

Township	Conc.	Lot	Owner	Structure	Link
Flamborough West	9	7	Village of Freelton	Various	17
Flamborough West	10	3	Francis Whitehead	Toll Gate	6
Flamborough West	11	1	Abraham Parnell	House	6
Flamborough East	10	N Half of 1	John Irvine	House	5,18
Flamborough East	10	Part of 2	George Allison	No	18
Flamborough East	10	3	Peter McNevin Heirs	No	18
Flamborough East	10	4	Jeremiah Hunt	No	18
Flamborough East	10	N Half of 5	Thomas Snell	No	18
Flamborough East	10	NW Half of 6	John Savage	House	18
Flamborough East	10	NE Half of 6	Thomas Savage	No	18
Flamborough East	10	N Half of 7	Barnard Griffin	Schoolhouse	1,17,18
Flamborough East	10	N Half of 8	Dennis O'Donnell Jr.	No	1,17,18
Flamborough East	10	N Half of 9	Thomas Weir	No	17
Flamborough East	10	N Half of 10	[?] Greensides Heirs	No	17
Flamborough East	10	NW? Half of 11	Michael Duffy	No	17
Flamborough East	10	E Half of 11	Christopher Duffy	No	17
Flamborough East	10	NW Half of 12	John Sutton	No	17
Flamborough East	10	NE Half of 12	David Brown	House	17
Flamborough East	10	N Half of 13	Samuel Sutton	No	17
Flamborough East	11	N Half of 1	William Haines	No	5
Flamborough East	11	S Half of 1	Henry Ashton	No	5,18
Flamborough East	11	S Half of 2	George Mitchell	No	7
Flamborough East	11	S Half of 3	Charles Stuart	No	7
Flamborough East	11	S Half of 4	Dennis McCarthy	No	7
Flamborough East	11	Part of 5	John Foley	No	7
Flamborough East	11	Part of 5	Thomas Snell	Two Houses	7
Flamborough East	11	S Half of 6	John McDougall	No	7

Township	Conc.	Lot	Owner	Structure	Link
Flamborough East	11	S Half of 7	Alex Ross	Two Houses	1,17,18
Flamborough East	11	N Half of 7	James Smith	House	1
Flamborough East	11	S Half of 8	Andrew Smith	House	1,17
Flamborough East	11	N Half of 8	John Page	No	1
Flamborough East	11	S Half of 9	Andrew Smith	No	17
Flamborough East	11	S Half of 10	Stephen Casey	No	17
Flamborough East	11	S Half of 11	John Hood	House	17
Flamborough East	11	S Half of 12	Heirs of Joseph Smith	No	17
Flamborough East	12	N Half of 1	James Campbell	No	5
Flamborough East	12	S Half of 1	Thomas Haines	No	5
Flamborough East	12	S Half of 7	Heirs of John Mount	House, Mountsberg Post Office	1
Flamborough East	12	N Half of 7	John Hewins	Two Houses, Mill	1
Flamborough East	12	Part of 8	John Page	No	1
Flamborough East	12	Part of 8	J.C. McNevin	No	1
Flamborough East	12	N Half of 8	Herman Page	Schoolhouse	1,11
Flamborough East	12	Part of 9	James Wingrove	No	6
Flamborough East	12	Part of 9	[?] McPherson	Unsure	6
Flamborough East	12	N Half of 10	John Wingrove	No	6
Flamborough East	12	N Half of 11	John Karr	No	6
Flamborough East	12	N Half of 12	Charles Finley	No	6
Flamborough East	13	S Half of 1	Joseph Lynn	No	5
Flamborough East	13	S Half of 7	Thomas Revell	No	1,11
Flamborough East	13	SE Half of 8	John Revell	Church	6
Flamborough East	13	SW Half of 8	James Wheeler	No	6
Flamborough East	13	S Half of 9	James Wing	No	6
Flamborough East	13	S Half of 10	Thomas Wingrove	No	6
Flamborough East	13	S Half of 11	Alex Stuart	House	6
Flamborough East	13	Part of 12	Thomas Monkhouse	House	6

The alternative haul routes travel across four geographic townships in two counties: Geographic Township of Flamborough West (Figure 17) and Geographic Township of Flamborough East (Figure 18) in Historic Wentworth County; and Geographic Township of Nassagaweya and Geographic Township of Nelson in Historic Halton County (Figure 19). Tables 11 and 12 organize the affected lots by county and township and list their owners and whether any structures are close to the alternative haul routes. The data has been gathered from the 1875 *Illustrated Atlas of Wentworth County* (Page and Smith 1875) and the 1877 *Illustrated Atlas of Halton County* (Walker and Miles 1877). It also connects the pertinent properties with its associated preferred haul route. All the historic maps used note where houses were located. While locations are only approximate on these maps, they do give an idea of potential for historic structures that could be impacted by the preferred haul route. The recorded historic structures are mentioned where necessary when discussing the visual evaluation in the Section 5.4.2.3.

Figure 17. A Portion of the Historic Map of the Township of Flamborough West in the *Illustrated Historical Atlas of Wentworth County*

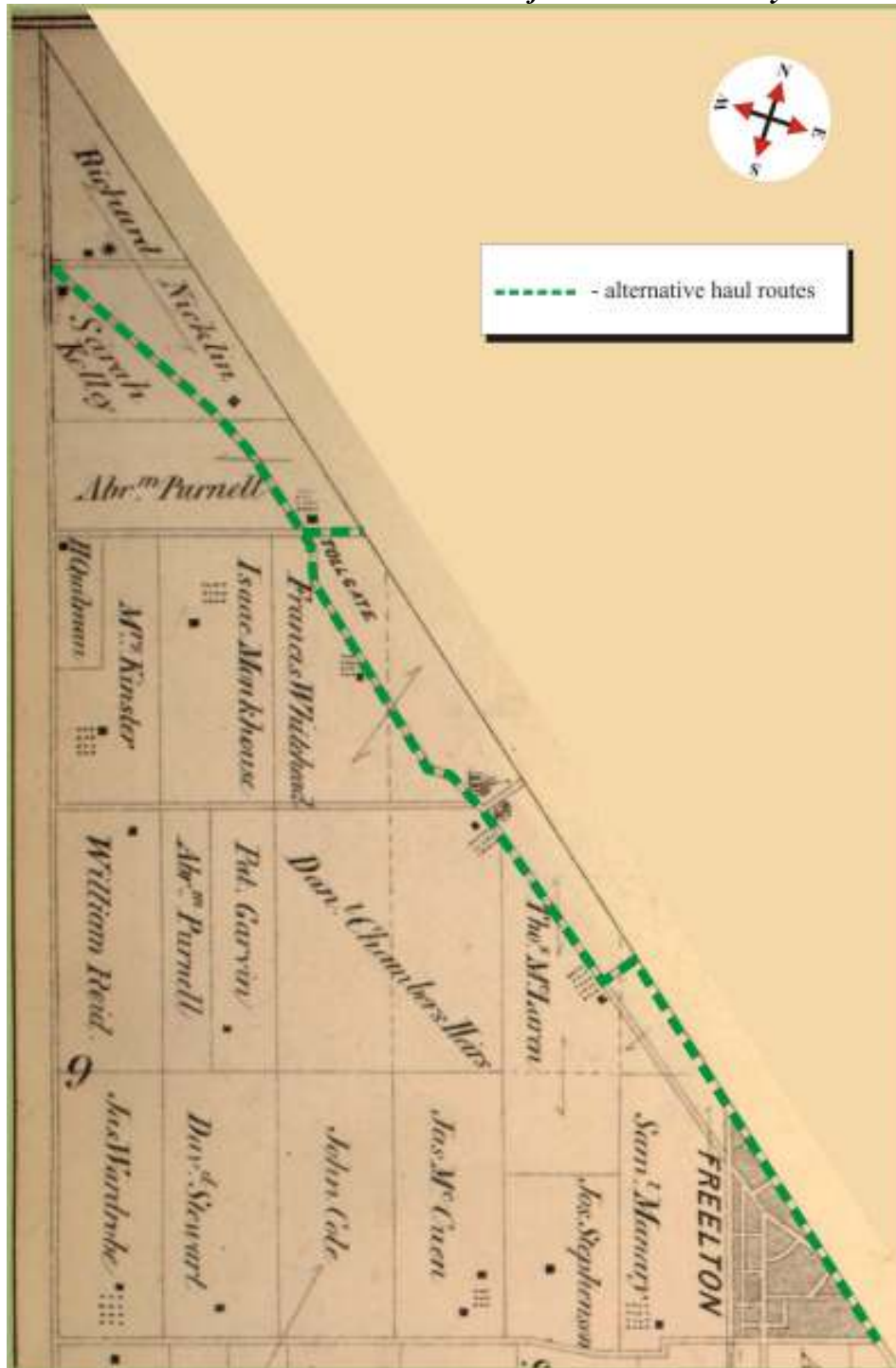


Figure 19. A Portion of the Historic Map of the Township of Nassagaweya and the Township of Nelson in the *Illustrated Historical Atlas of Halton County*



Table 12. Properties in the Historic County of Halton

Township	Conc.	Lot	Owner	Structure	Link
Nassagaweya	1	W Half of 1	Henry Watson	House	5
Nassagaweya	1	W Half of 2	John Mitchell	No	5
Nassagaweya	1	Part of 3	James Inglis	No	5
Nassagaweya	1	Part of 4	James Inglis	No	5
Nassagaweya	1	5	Heirs of Thomas Elliott	No	5,11
Nassagaweya	1	6	Joseph Linn	No	5,11
Nassagaweya	2	W Half of 5	Heirs of Thomas Elliott	No	13
Nassagaweya	2	E Half of 5	David Fraser	No	13,26
Nassagaweya	2	6	George Agnew	No	13,26
Nassagaweya	2	7	Peter Reid	No	13,26,27
Nassagaweya	3	W Half of 5	George Agnew	No	13,26,27
Nassagaweya	3	W Half of 6	Alex McLaren	House	13,26,27
Nassagaweya	3	Part of 6	William Reid	No	27
Nassagaweya	3	Part of 6	[?] Wheelihan	No	27
Nassagaweya	3	W Half of 7	Mrs. Whitlaw	No	26,27
Nassagaweya	3	E Half of 7	William Reid	No	27
Nelson	1	Part of 15	G. Tibble	House	5
Nelson	1	Part of 15	John Mitchell	Unsure	5,18

5.4.2.3 Field Assessment of the Haul Routes

Given that the five alternative haul routes overlap one another, each link was assessed individually. Using each link's individual archaeological potential evaluation, an assessment of each haul route is offered below in Section 5.4.2.4.

Link 1: Centre Road (Figure 20)

The link given in Figure 20 is Centre Road in the Geographic Township of Flamborough East in the Town of Flamborough, City of Hamilton running on an approximate southeast to northwest axis from Concession 11 East Road to Campbellville Road. This stretch of road is roughly 3.3 kilometres long.

This link features a number of hills and better drainage but with water sources 400 metres to a kilometre away from the route. Some areas feature steep slopes as a result of the topography but a majority of the route features moderate to high archaeological potential due to the knolls present and due to possible historic structures as outlined in Appendix 1. The location of the historic village of Mountsberg between the intersections shared with Mountsberg Road and Campbellville Road also exhibits high potential and is included in the potential determination marked on Figure 20. Table 13 summarizes the potential present along Link 1.

Table 13. Listing of Archaeological Potential for Link 1

Potential Type	SW Side Length	NE Side Length
Potential Present	2.8 km	3.0 km
Wet, Poorly Drained - No Potential	0.0 km	0.0 km
Excessive Slope - No Potential	0.5 km	0.3 km
Previous Disturbance - No Potential	0.0 km	0.0 km

Link 5: Milborough Line (Figure 21)

The link given in Figure 21 is Milborough Line which is the dividing line between the Geographic Township of Flamborough East in the Town of Flamborough, City of Hamilton to the southwest and the Geographic Township of Nassagaweya in the Town of Milton, Regional Municipality of Halton. It is oriented on an approximate southeast to northwest axis from Concession 11 East Road to Campbellville Road. This stretch of road is roughly 3.3 kilometres long.

The archaeological potential for Milborough Line is presented in Table 14. Since Milborough Line cuts across a number of steep hills, portions of the roadside leads off to a steep slope on either side making the archaeological potential of that road low. A large portion of the central area is swampy and is marked as such on the available topographic maps. Incidentally, a roadside sign reading "Water Over Road" was encountered during the visual evaluation of Link 5. A stream also intersects the route at its south end leaving the ground poorly drained and wet. As a result, only a limited portion of this link has moderate to high archaeological potential (including the possible historic structures

outlined in Tables 11 and 12), given the available water and topography of the potentially inhabitable area.

Table 14. Listing of Archaeological Potential for Link 5

Potential Type	SW Side Length	NE Side Length
Potential Present	0.7 km	1.1 km
Wet, Poorly Drained - No Potential	1.3 km	2.2 km
Excessive Slope - No Potential	1.3 km	0.0 km
Previous Disturbance - No Potential	0.0 km	0.0 km

Link 11: Western Portion of Campbellville Road (Figure 22)

The link given in Figure 22 is Campbellville Road in the Geographic Townships of Flamborough West and Flamborough East in the Town of Flamborough, City of Hamilton running on an approximate southwest to northeast axis from Highway 6 to Centre Road. This stretch of road is roughly 2.5 kilometres long.

As shown in Table 15, Bronte Creek and a tributary stream run across the link, making for a number of wet, poorly drained areas. House construction also disturbs the northern corner of the Highway 6 and Campbellville Road intersection, while the western corner of the Campbellville Road and Centre Road has been disturbed by extensive landscape modification from the Mountsberg Baptist Church and Cemetery. Incidentally, the cemetery is set back from the road and would not be impacted by any construction activities, although any road modification at the intersection should be closely monitored in case any unmarked graves are close to the roadside. Otherwise, some areas exhibiting moderate to high potential (including any possible historic structures outlined in Tables 11 and 12) are either ploughed farmer’s fields, front lawns of residences, or in natural woodlots.

Table 15. Listing of Archaeological Potential for Link 11

Potential Type	NW Side Length	SE Side Length
Potential Present	1.1 km	1.5 km
Wet, Poorly Drained - No Potential	1.1 km	1.0 km
Excessive Slope - No Potential	0.0 km	0.0 km
Previous Disturbance - No Potential	0.3 km	0.0 km

Link 13: Eastern Portion of Campbellville Road (Figure 23)

The link given in Figure 23 is Campbellville Road in the Geographic Township of Nassagaweya in the Town of Milton, Regional Municipality of Hamilton running on an approximate southwest to northeast axis from Milborough Line to Twiss Road. This stretch of road is roughly 2.8 kilometres long.

Table 16 demonstrates that the majority of this portion of the road runs through a wet, poorly drained area, most of it still a natural woodlot. It is also noted as swampy in the 1877 *Illustrated Atlas of Halton County* (Figure 19). Additionally, a railroad bed runs

across Campbellville Road about 800 metres northeast of Nassagaweya First Line. There are soft shoulders and ditches along either side of the road. Areas that are not too wet exhibit moderate potential given the nearby stream intersecting the road about 300 metres northeast of Nassagaweya First Line.

Table 16. Listing of Archaeological Potential for Link 13

Potential Type	NW Side Length	SE Side Length
Potential Present	0.9 km	1.0 km
Wet, Poorly Drained - No Potential	1.8 km	1.7 km
Excessive Slope - No Potential	0.0 km	0.0 km
Previous Disturbance - No Potential	0.1 km	0.1 km

Link 17: Western Portion of Concession 11 East Road (Figure 24)

The link given in Figure 24 is Concession 11 East Road in the Geographic Township of Flamborough East in the Town of Flamborough, City of Hamilton running on an approximate southwest to northeast axis from Highway 6 to Centre Road. This stretch of road is roughly 2.6 kilometres long.

As shown in Table 17, the land is divided about equally between stretches exhibiting archaeological potential (including the possible historic structure outlined in Table 11) due to their proximity to Bronte Creek and an associated stream plus areas of wet, poorly drained soil through which these water sources run. Most of the properties that can be assessed are currently the front lawns of existing residences, although there are some ploughed fields as well.

Table 17. Listing of Archaeological Potential for Link 17

Potential Type	NW Side Length	SE Side Length
Potential Present	1.2 km	1.3 km
Wet, Poorly Drained - No Potential	1.4 km	1.3 km
Excessive Slope - No Potential	0.0 km	0.0 km
Previous Disturbance - No Potential	0.0 km	0.0 km

Link 18: Eastern Portion of Concession 11 East Road (Figure 25)

The link given in Figure 25 is Concession 11 East Road in the Geographic Township of Flamborough East in the Town of Flamborough, City of Hamilton running on an approximate southwest to northeast axis from Centre Road to Milborough Line and is contiguous to Link 17. This stretch of road is roughly 3.3 kilometres long.

Link 18 manifests the same mix of poorly drained soils and streams radiating from Bronte Creek intermixed with some areas of moderate archaeological potential as does Link 17. The results are displayed in Table 18. Thomas Snell had two houses built on either side of the now unnamed creek (west of Centre Road) on the north side of Concession 11 East Road (Figure 16). That area is now so wet that the houses were most likely farther back than noted on the map. In any case, it cannot be assessed due to the

poor drainage conditions. Close to the intersection of Concession 11 East Road and Milbrough Line the road slopes steeply making any immediate settlement in that area unlikely and rendering its potential low.

Table 18. Listing of Archaeological Potential for Link 18

Potential Type	NW Side Length	SE Side Length
Potential Present	1.4 km	1.4 km
Wet, Poorly Drained - No Potential	1.6 km	1.6 km
Excessive Slope - No Potential	0.3 km	0.3 km
Previous Disturbance - No Potential	0.0 km	0.0 km

Links 26 & 27: Twiss Road and Reid Sideroad (Figure 26)

The links given in Figure 26 consists of two shorter road routes located in the Geographic Township of Nassagaweya in the Town of Milton, Regional Municipality of Halton: a portion of Twiss Road oriented on an approximate southeast to northwest axis between Campbellville Road and Reid Sideroad, connected to a portion of Reid Sideroad oriented on an approximate southwest to northeast axis from Twiss Road to the Highway 401 turnoff. This stretch of road is roughly 2.1 kilometres long.

No road improvements are scheduled to be made here and it will most likely not be impacted as a result. Nonetheless, the links were assessed visually as laid out in Table 19. Approximately half of the links' length were found to have archaeological potential (including the possible historic structure outlined in Table 12), the other areas either being too steep, already disturbed by the construction of Campbellville Emergency Response Centre on the north side of Reid Sideroad, or disturbed by the railroad crossing close to the north end of the Twiss Road and Campbellville Road intersection.

Table 19. Listing of Archaeological Potential for Links 26 & 27

Potential Type	SW/NW Side Length	NE/SE Side Length
Potential Present	0.8 km	1.2 km
Wet, Poorly Drained - No Potential	0.0 km	0.0 km
Excessive Slope - No Potential	0.3 km	0.7 km
Previous Disturbance - No Potential	1.0 km	0.2 km

5.4.2.4 Summary

St. Marys Cement Incorporated wants to determine which haul route will be the best alternative for their proposed dolostone quarry located at the northwest corner of Milbrough Line and Concession 11 East Road in the City of Hamilton (Dillon 2006). Five alternate haul routes have been proposed (St. Marys Cement Incorporated 2008), each using different configurations of the links presented above (see Appendix 2). Using the archaeological potential determinations above, Table 20 outlines the percentage amount of each proposed route that would need archaeological assessment. In the table, the “total length of haul route” was calculated by measuring the length of both sides of each relevant road link and adding them together. The “length with archaeological

potential” was arrived at by totalling the stretch of landscape on both sides of the road exhibiting archaeological potential. While all lengths given are only approximate, they still demonstrate relative to one another how much of each haul route would need further Stage 2 assessment.

Table 20. Listing of Archaeological Potential for Individual Haulage Routes

Haul Route #	Link Numbers	Total Length of Haul Route	Length With Archaeological Potential	% of Total Length With Archaeological Potential
1	17, 18	11.8 km	5.3 km	44.91%
2	1, 11, 18	18.2 km	11.2 km	61.54%
3	5, 13, 26, 27	16.4 km	5.7 km	34.76%
4	5, 13, 17, 18, 26, 27	28.2 km	11.0 km	39.01%
5	1, 5, 11, 13, 18, 26, 27	34.6 km	16.9 km	48.84%

6.0 RECOMMENDATIONS

A cultural heritage and archaeological study was conducted for an approximately 20 kilometre stretch of various roads straddling the City of Hamilton and the Regional Municipality of Halton. This study evaluates potential impact on the cultural heritage and archaeological resources of the potential haul routes to a proposed new aggregate quarry to be located at the northwest corner of Concession Road 11 East and Milborough Line in the Geographic Township of Flamborough East, City of Hamilton. This report was produced as part of a haul route evaluation study coordinated by iTRANS Consulting.

Archaeologix Inc. applied archaeological potential criteria commonly used by the Ministry of Culture to determine areas of archaeological potential along the study corridor. The archaeological potential for precontact Aboriginal sites was deemed to be moderate to high along stretches of road that have not been impacted by prior construction, sloping of the land, or poor drainage. Similarly, the archaeological potential for historic sites was also found to be moderate to high along certain stretches of road. Stage 2 assessment is recommended for those areas regarded to have archaeological potential as assessed in this report.

As further archaeological assessment is recommended, the Ontario Ministry of Culture has reviewed the results in this report and issued a letter of concurrence with the findings herein. A letter of clearance was not requested at this time.

Should deeply buried archaeological material be found anywhere within the study area during future construction, the Ministry of Culture should be notified immediately at (416) 314-7174. In the event that human remains are encountered during construction, the proponent should immediately contact both the Ministry of Culture and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Consumer and Commercial Relations, (416) 326-8392.

Twenty four potentially significant heritage sites were also identified in the subject area. The seventeen built heritage sites include houses and barns. The seven cultural landscape units comprise farmsteads, homesteads, two village complexes, one church complex, and one waterscape.

Currently Alternative Haul Route 3 is the preferred haul route, followed by Alternative Haul Route 1. The areas of moderate to high archaeological potential along the selected alternative haul route will be assessed by the standard shovel test pit method. According to Table 20, that means 5.7 km of Alternative Haul Route 3 will be assessed in the following manner: test pits will be dug at an interval of five metres along the roadside from the shoulder to the outer edge of the right of way. Each test pit will be approximately 30 centimetres in diameter, dug to subsoil with all soil screened through 6mm hardware cloth. In the event that an artifact is encountered in a test pit, additional test pits will be dug in close proximity. In addition, a more detailed architectural and historical study of relevant heritage sites identified and pertaining to the preferred haul route should be undertaken. According to Table 5, that means two Built Heritage Features (BHF 1 and BHF 2 as listed in Table 3) will need further evaluation along Alternative Haul Route 3.

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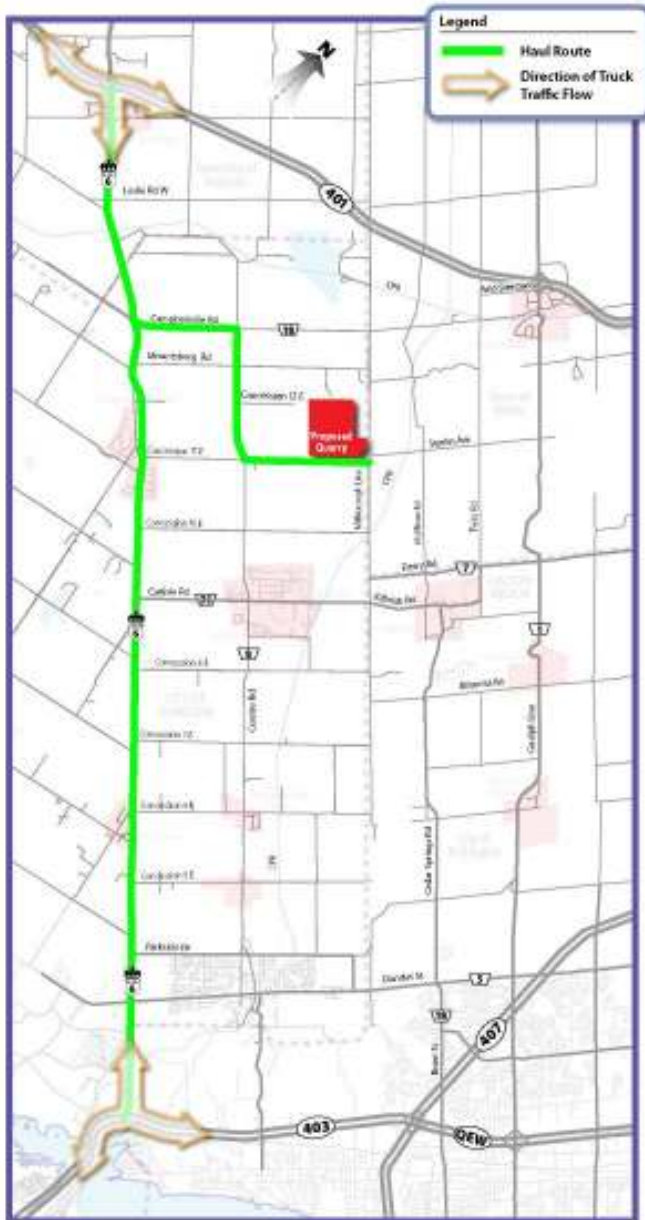
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Alternative Haul Route 2



In the case of Alternative Haul Route 2 truck traffic destined for Highway 401 east would travel west on Concession 11 E, then north on Centre Road, west on Campbellville, and north on Highway 6 to the Highway 401 eastbound on-ramp.

Truck traffic destined for Highway 401 west would travel west on Concession 11 E, then north on Centre Road, west on Campbellville, and north on Highway 6 to the Highway 401 westbound on-ramp.

Truck traffic destined for Highway 403 east would travel west on Concession 11 E, then north on Centre Road, west on Campbellville, and south on Highway 6 to the Highway 403/QEW eastbound on-ramp.

Finally, truck traffic destined for Highway 403 west would travel west on Concession 11 E, north on Centre Road, west on Campbellville, and south on Highway 6 to the Highway 403 /QEW westbound on-ramp.

Figure 28. Alternative Haul Route 2

Alternative Haul Route 3



Figure 29. Alternative Haul Route 3

From here, there are several alternatives to reach the destination including taking the 407 ETR southwest or Highway 6 south to the 403/QEW.

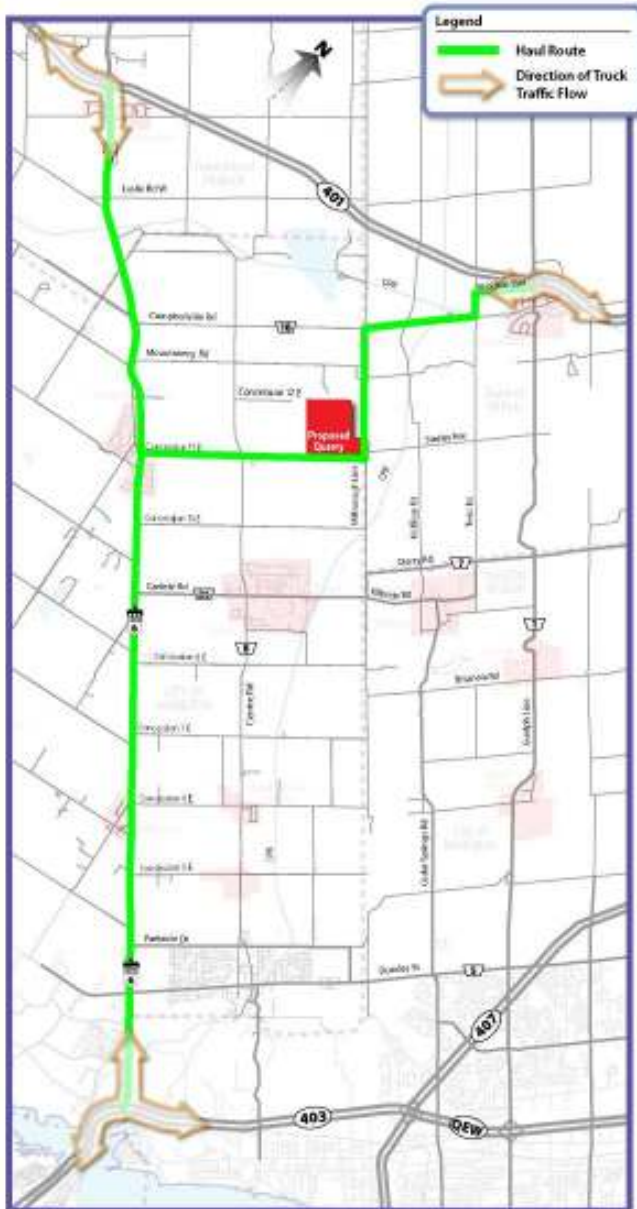
In the case of Alternative Haul Route 3, truck traffic destined for Highway 401 east would travel north on Milborough Line, then east on Campbellville Road, north on Twiss Road, and east on Reid Sideroad to the Highway 401 eastbound on-ramp.

Truck traffic destined for Highway 401 west would travel north on Milborough Line, then east on Campbellville Road, north on Twiss Road, east on Reid Sideroad and north on Guelph Line to the Highway 401 westbound on-ramp

Truck traffic destined for Highway 403/QEW east would travel north on Milborough Line, then east on Campbellville Road, north on Twiss Road, and east on Reid Sideroad to the Highway 401 eastbound on-ramp. From here, there are several alternatives to reach the destination including taking the 407 ETR south to Highway 403.

Finally, truck traffic destined for Highway 403 west would travel north on Milborough Line, east on Campbellville Road, north on Twiss Road, and east on Reid Sideroad to the Highway 401.

Alternative Haul Route 4



In the case of Alternative Haul Route 4, truck traffic destined for Highway 401 east would travel north on Milborough Line, then east on Campbellville Road, north on Twiss Road, and east on Reid Sideroad to the Highway 401 eastbound on-ramp.

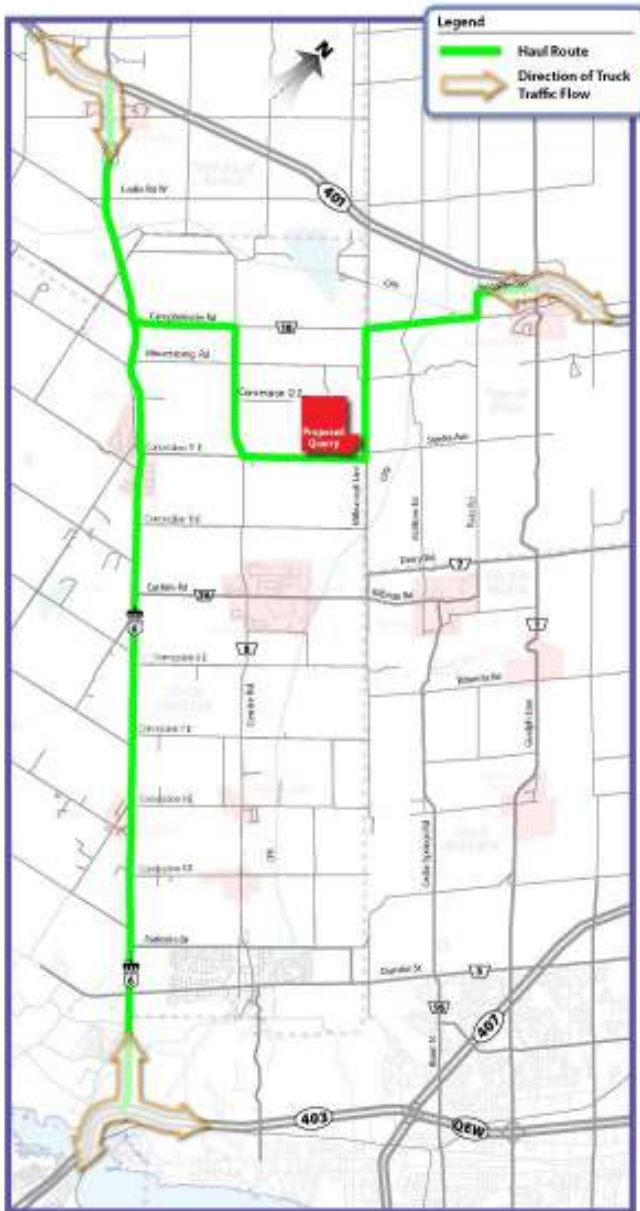
Truck traffic destined for Highway 401 west would travel west on Concession 11 E, and then north on Highway 6 to the Highway 401 westbound on-ramp.

Truck traffic destined for Highway 403 east would travel west on Concession 11 E, and then south on Highway 6 to the Highway 403 eastbound on-ramp.

Finally, truck traffic destined for Highway 403 west would travel west on Concession 11 E, and then south on Highway 6 to the Highway 403 westbound on-ramp.

Figure 30. Alternative Haul Route 4

Alternative Haul Route 5



In the case of Alternative Haul Route 5, truck traffic destined for Highway 401 east would travel north on Milborough Line, then east on Campbellville Road, north on Twiss Road, and east on Reid Sideroad to the Highway 401 eastbound on-ramp.

Truck traffic destined for Highway 401 west would travel west on Concession 11 E, then north on Centre Road, then west on Campbellville, and then north on Highway 6 to the Highway 401 westbound on-ramp.

Truck traffic destined for Highway 403 east would travel west on Concession 11 E, then north on Centre Road, west on Campbellville, and south on Highway 6 to the Highway 403/QEW eastbound on-ramp.

Finally, truck traffic destined for Highway 403 west would travel west on Concession 11 E, then north on Centre Road, west on Campbellville, and south on Highway 6 to the Highway 403/QEW westbound on-ramp.

Figure 31. Alternative Haul Route 5