

## **Appendix E**

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**Cultural Heritage Evaluation Report and Heritage Impact  
Assessment**

**Municipal Heritage Bridges; Cultural, Heritage, and  
Archaeological Resources Assessment Checklist**

**Municipal Heritage Bridges  
Cultural, Heritage and Archaeological  
Resources Assessment Checklist  
Revised April 11, 2014**

*This checklist was prepared in March 2013 by the Municipal Engineers Association to assist with determining the requirements to comply with the Municipal Class Environmental Assessment. View all 4 parts of the module on Structures Over 40 Years at [www.municipalclassea.ca](http://www.municipalclassea.ca) to assist with completing the checklist.*

**Project Name:** Mill Pond Bridge (B 100018)

**Location:** Mary Street East, over the Pigeon River

**Municipality:** City of Kawartha Lakes, Ontario

**Project Engineer:** D.M. Wills Associates Ltd.

**Checklist completed by:** Archaeological Services Inc.

**Date:** 22 April 2019

**NOTE: Complete all sections of Checklist. Both Cultural Heritage and Archaeological Sections must be satisfied before proceeding.**

**Part A - Municipal Class EA Activity Selection**

Description	Yes	No
Will the proposed project involve or result in construction of new water crossings? This includes ferry docks.	<input type="checkbox"/> Schedule B or C	<input checked="" type="checkbox"/> Next
Will the proposed project involve or result in construction of new grade separation?	<input type="checkbox"/> Schedule B or C	<input checked="" type="checkbox"/> Next
Will the proposed project involve or result in construction of new underpasses or overpasses for pedestrian recreational or agricultural use?	<input type="checkbox"/> Schedule B or C	<input checked="" type="checkbox"/> Next
Will the proposed project involve or result in construction of new interchanges between any two roadways, including a grade separation and ramps to connect the two roadways?	<input type="checkbox"/> Schedule B or C	<input checked="" type="checkbox"/> Next

Description	Yes	No
Will the proposed project involve or result in reconstruction of a water crossing where the structure is less than 40 years old and the reconstructed facility will be for the same purpose, use, capacity and at the same location? (Capacity refers to either hydraulic or road capacity.) This include ferry docks.	<input type="checkbox"/> Schedule A+	<input checked="" type="checkbox"/> Next
Will the proposed project involve or result in reconstruction of a water crossing, where the reconstructed facility will not be for the same purpose, use, capacity or at the same location? (Capacity refers to either hydraulic or road capacity). This includes ferry docks.	<input type="checkbox"/> Schedule B or C	<input checked="" type="checkbox"/> Next
Will the proposed project involve or result in reconstruction or alteration of a structure or the grading adjacent to it when the structure is over 40 years old where the proposed work will alter the basic structural system, overall configuration or appearance of the structure?	<input checked="" type="checkbox"/> Next	<input type="checkbox"/> Assess Archaeological Resources

**Part B - Cultural Heritage Assessment**

Description	Yes	No
Does the proposed project involve a bridge construction in or after 1956?	<input type="checkbox"/> Next	<input checked="" type="checkbox"/> Prepare CHER Undertake HIA
Does the project involve one of these four bridge types?	<input type="checkbox"/> Rigid frame            Next <input type="checkbox"/> Precast with Concrete Deck        Next <input type="checkbox"/> Culvert or Simple Span            Next <input type="checkbox"/> Steel Beam/ Concrete Deck        Next	<input type="checkbox"/> Prepare CHER Undertake HIA

Description	Yes	No
Does the bridge or study area contain a parcel of land that is subject of a covenant or agreement between the owner of the property and a conservation body or level of government?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is listed on a register or inventory of heritage properties maintained by the municipality?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is designated under Part IV of the Ontario Heritage Act?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is subject to a notice of intention to designate issued by a municipality?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is located within a designated Heritage Conservation District?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is subject to a Heritage Conservation District study area by-law?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is part of a National Historic Site?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is part of a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input checked="" type="checkbox"/> Next

Description	Yes	No
Does the bridge or study area contain a parcel of land that is designated under the Heritage Railway Station Protection Act?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is identified as a Federal Heritage Building by the Federal Heritage Building Review Office (FHBRO)	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is the subject of a municipal, provincial or federal commemorative or interpretive plaque that speaks to the Historical significance of the bridge?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain a parcel of land that is in a Canadian Heritage River watershed?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Will the project impact any structures or sites (not bridges) that are over forty years old, or are important to defining the character of the area or that are considered a landmark in the local community?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Is the bridge or study area adjacent to a known burial site and/or cemetery?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Is the bridge considered a landmark or have a special association with a community, person or historical event in the local community?	<input type="checkbox"/> Prepare CHER Undertake HIA	<input type="checkbox"/> Next
Does the bridge or study area contain or is it part of a cultural heritage landscape?	<input type="checkbox"/> Prepare Cher Undertake HIA	<input type="checkbox"/> Assess Archaeological Resources

**PART C - HERITAGE ASSESSMENT**

Description	Yes	No
Does the Cultural Heritage Evaluation Report identify any Heritage Features on the project?	<input checked="" type="checkbox"/> Undertake HIA	<input type="checkbox"/> Part D - Archaeological Resources
Does the Heritage Impact Assessment determine that the proposed project will impact any of the Heritage Features that have been identified?	<input checked="" type="checkbox"/> Schedule B or C	<input type="checkbox"/> Part D - Archaeological Resources

**PART D - ARCHAEOLOGICAL RESOURCES ASSESSMENT**

Description	Yes	No
Will any activity, related to the project, result in land impacts/significant ground disturbance?	<input checked="" type="checkbox"/> Next	<input type="checkbox"/> Schedule A - proceed
Have all areas, to be impacted by ground disturbing activities, been subjected to recent extensive and intensive disturbances and to depths greater than the depths of the proposed activities?	<input type="checkbox"/> Schedule A - proceed	<input checked="" type="checkbox"/> Next
Has an archaeological assessment previously been carried out that includes all of the areas to be impacted by this project?	<input type="checkbox"/> Next	<input checked="" type="checkbox"/> Archaeological Assessment
Does the report on that previous archaeological assessment recommend that no further archaeological assessment is required within the limits of the project for which that assessment was undertaken, and has a letter been issued by the Ministry of Tourism, Culture and Sport stating that the report has been entered into the Ontario Public Register of Archaeological Reports?	<input type="checkbox"/> Schedule A - proceed	<input type="checkbox"/> Obtain satisfaction letter - proceed

**\*\* Include Documentation Summary in Project File\*\***

# **Cultural Heritage Evaluation Report**

**VOLUME 1: CULTURAL HERITAGE EVALUATION REPORT  
MILL POND BRIDGE (B 100018)**

**MARY STREET EAST OVER THE PIGEON RIVER  
LOT 7, CONCESSION III  
FORMER EMILY TOWNSHIP  
CITY OF KAWARTHA LAKES, ONTARIO**

Prepared for:

**D.M. Wills Associates Limited**  
150 Jameson Drive  
Peterborough, ON K9J 0B9

ASI File: 19CH-003

April 2019



**VOLUME 1: CULTURAL HERITAGE EVALUATION REPORT  
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**EXECUTIVE SUMMARY**

ASI was contracted by D.M. Wills Associates Limited to conduct a cultural heritage evaluation and heritage impact assessment for the Mill Pond Bridge (B 100018) as part of the Mill Pond Bridge Replacement/Rehabilitation Municipal Class Environmental Assessment. This report, Volume 1, provides the Cultural Heritage Evaluation Report (CHER). Volume 2 provides the Heritage Impact Assessment (HIA) as a separate, stand-alone report. The study area is located over the Pigeon River on Mary Street East in the community of Omemee, City of Kawartha Lakes.

The Mill Pond Bridge (B 100018) has an east-west orientation and is located approximately 50 metres south of King Street West in the community of Omemee. The west portion of the bridge is a half-through truss and the east portion is an I-beam structure with concrete deck. Built in 1952, the bridge carries a single lane of Mary Street East over the Pigeon River in four spans with a total deck length of 54.9 metres and total width of 4.3 metres.

Based on the results of archival research, an analysis of bridge design and construction in Ontario, a field investigation, and the application of O. Reg. 9/06, the Mill Pond Bridge (B 100018) is determined to retain cultural heritage value. In particular, the half-through truss component of the subject bridge is representative of an early-twentieth-century style and bridge type. Further, the location of the subject bridge has served as an historical bridging point for vehicles over the Pigeon River and is physically associated with Mary Street East, an historically surveyed road. The subject bridge is physically and historically linked to its surroundings in the community of Omemee. Given that it meets O. Reg. 9/06, a Draft Statement of Cultural Heritage Value or Interest and a list of heritage attributes have been included in this report.

Given the identified cultural heritage value of the Mill Pond Bridge (B 100018), the following recommendations should be considered:

1. This report should be submitted to heritage staff at the City of Kawartha Lakes, Heritage Victoria Committee, and with the Ministry of Tourism, Culture and Sport for review.

## PROJECT PERSONNEL

<i>Senior Project Manager:</i>	Lindsay Graves, MA <i>Senior Cultural Heritage Specialist   Senior Project Manager, Cultural Heritage Division</i>
<i>Project Manager:</i>	Johanna Kelly, MSc <i>Cultural Heritage Associate, Cultural Heritage Division</i>
<i>Project Coordinator:</i>	Katrina Thach, Hon. BA <i>Archaeologist   Project Coordinator, Environmental Assessment Division</i>
<i>Project Administrator:</i>	Carol Bella, Hon. BA <i>Executive Assistant, Operations Division</i>
<i>Field Survey:</i>	Johanna Kelly
<i>Report Preparation:</i>	Kirstyn Allam, Hon. BA, Dip. Advanced Museum Studies <i>Cultural Heritage Assistant, Cultural Heritage Division</i>
	John Sleath, MA <i>Associate Archaeologist   Project Manager Cultural Heritage Division</i>
<i>Graphics Preparation:</i>	Jonas Fernandez, MSc <i>Lead Archaeologist   Assistant Manager – Fleet &amp; Geomatics Specialist, Operations Division</i>
<i>Report Reviewers:</i>	Johanna Kelly  Lindsay Graves, MA



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## 1.0 INTRODUCTION

Archaeological Services Inc. (ASI) was contracted by D.M. Wills Associates Limited to conduct a cultural heritage evaluation and heritage impact assessment of the Mill Pond Bridge (B 100018) as part of the Mill Pond Bridge Replacement/ Rehabilitation Municipal Class Environmental Assessment. This report, Volume 1, provides the Cultural Heritage Evaluation Report (CHER). To assist in selecting the preferred alternative, a separate, stand-alone Heritage Impact Assessment was produced as Volume 2. This project involves the replacement or rehabilitation of the Mill Pond Bridge, Structure No. B 100018, located on Mary Street East over the Pigeon River in the community of Omemee, within the City of Kawartha Lakes (Figure 1).

The Mill Pond Bridge (B 100018) has an east-west orientation and is located approximately 50 metres south of King Street West in the community of Omemee. The Mill Pond Bridge (B 100018) is a four-span structure featuring a single span half-through Warren truss structure in the west integrated with a three span I-beam structure in the east. The superstructure rests on concrete abutments and concrete piers. The bridge carries a single lane of east and west Mary Street East vehicular traffic over the Pigeon River in the community of Omemee, City of Kawartha Lakes (Figure 1).

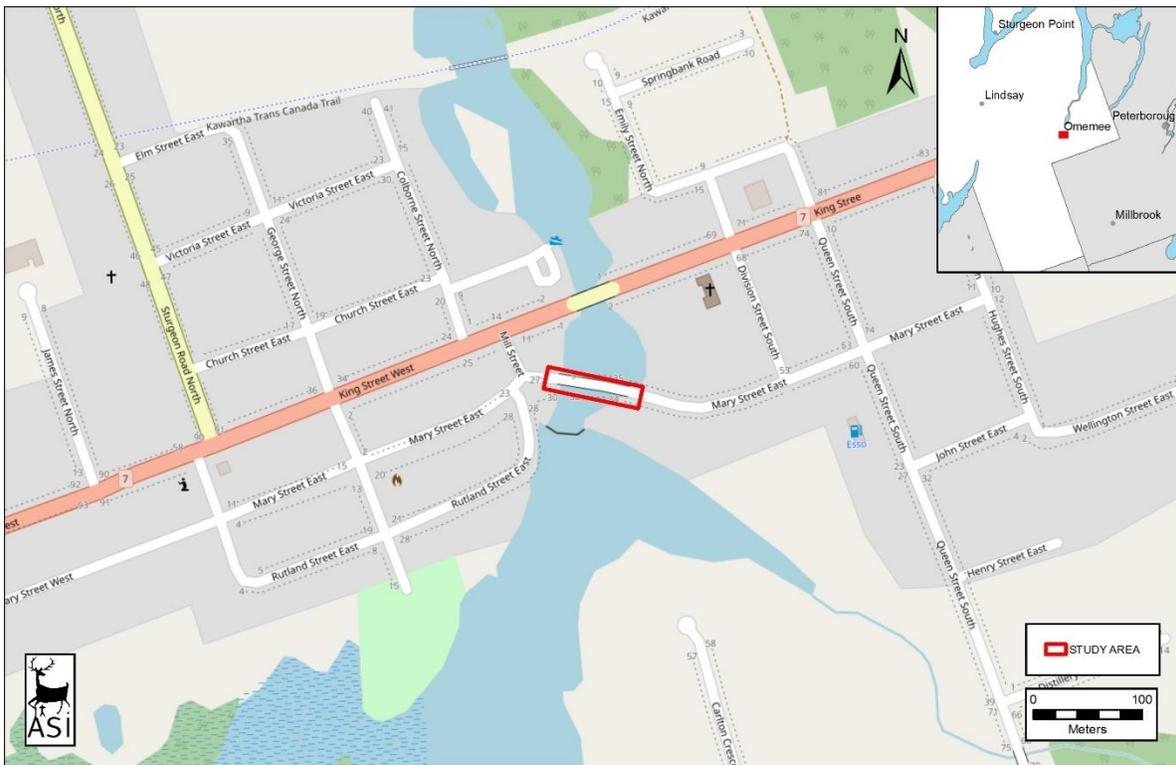


Figure 1: Location of the study area (in red).

Source: ©OpenStreetMap and contributors, Creative Commons-Share Alike License  
(CC-BY-SA ESRI Street Maps)

As this structure was constructed prior to 1956, a CHER is required to determine if the bridge retains cultural heritage value (Municipal Engineers Association 2014). The principal aims of this report are to:



- Describe the methodology that was employed and the legislative and policy context that guides heritage evaluations of bridges;
- Provide a historical overview of the design and construction of the bridge within the broader context of the surrounding township and bridge construction generally;
- Describe existing conditions and heritage integrity; and
- Evaluate the bridge using *O. Reg. 9/06, Criteria for Determining Cultural Heritage Value or Interest*, of the *Ontario Heritage Act* and the Ontario Heritage Bridge Guidelines and draw conclusions about the heritage attributes of the structure.

## 2.0 LEGISLATION AND POLICY CONTEXT

Infrastructure projects have the potential to impact cultural heritage resources in a variety of ways. These include loss or displacement of resources through removal or demolition and the disruption of resources by introducing physical, visual, audible or atmospheric elements that are not in keeping with the resources and/or their setting.

The analysis used throughout the cultural heritage resource assessment process addresses cultural heritage resources under various pieces of legislation and their supporting guidelines:

- *Environmental Assessment Act* (R.S.O. 1990, Chapter E.18)
  - *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (MCC 1992)
  - *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (MCR 1980)
  - *Municipal Heritage Bridges: Cultural, Heritage and Archaeological Resources Assessment Checklist* (Municipal Engineers Association 2014)
- *Ontario Heritage Act* (R.S.O. 1990, Chapter O.18) and the following document prepared by the Ministry of Tourism and Culture (MTC):
  - The *Ontario Heritage Toolkit* (MCL 2006) provides a guide on how to evaluate heritage properties that are subject to or are being considered for municipal designation and/or listing under sections 27, 29, or 41 of the *Ontario Heritage Act*
  - MTCS (2016) *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes*

The *Ontario Heritage Act* makes provisions for the protection and conservation of heritage resources in the Province of Ontario. A Cultural Heritage Evaluation Report is intended to identify areas of heritage interest as specified in the *Provincial Policy Statement*. Built heritage concerns are recognized as a matter of provincial interest in Section 2.6.1 of the *Provincial Policy Statement* (PPS) which states:

- Significant built heritage resources and cultural heritage landscapes shall be conserved (PPS 2014:29).

In the *Provincial Policy Statement* the term Conserved means:

the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural



heritage value or interest is retained under the *Ontario Heritage Act*. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment and/or heritage impact assessment. Mitigative measures and/or alternative development approaches can be included in these plans and assessments (MMAH 2014:40).

Additionally, Part 4.7 of the PPS states that:

The official plan is the most important vehicle for implementation of this *Provincial Policy Statement*. Comprehensive, integrated and long-term planning is best achieved through official plans.

Official plans shall identify provincial interests and set out appropriate land use designations and policies. To determine the significance of some natural heritage features and other resources, evaluation may be required.

Official plans should also coordinate cross-boundary matters to complement the actions of other planning authorities and promote mutually beneficial solutions. Official plans shall provide clear, reasonable and attainable policies to protect provincial interests and direct development to suitable areas.

In order to protect provincial interests, planning authorities shall keep their official plans up-to-date with this *Provincial Policy Statement*. The policies of this *Provincial Policy Statement* continue to apply after adoption and approval of an official plan.

## 2.1 Municipal Policies

Section 10 of the *City of Kawartha Lakes Official Plan (2012)* sets out a number of policies with regard to cultural heritage resources. The Official Plan is currently under appeal. Policies that are relevant to this study include:

10. Culture and heritage
- 10.5 Heritage:
  - a) The City shall encourage the conservation and preservation of its significant built heritage resources, significant cultural heritage landscapes and significant archaeological resources.
  - c) Development in areas considered to be of architectural or heritage value shall have regard for the conservation and preservation of architecture or historic buildings, features or sites therein.
  - d) The City recognizes that the City's heritage resources include individual buildings, group of buildings, streetscapes, neighbourhoods, landscaping and landmarks. For the purpose of this section, the term "building" is considered to include both buildings and structures and the term "conserve" is generally considered to mean retention of the existing form, material and integrity of site.



- f) The City shall require development proponents to conserve such resources through preservation in-situ, documentation, avoidance and/or removal.
- g) The City shall ensure land development adjacent to protected heritage properties are not adversely impacting identified heritage attributes of these properties.
- i) The City shall encourage comprehensive cultural heritage resource mapping, archaeological resource mapping, heritage master planning and other heritage site inventories for the City;
- j) The City shall seek the advice of the Province regarding cultural heritage conservation matters when appropriate.

### 30. Definitions

#### Adjacent lands:

means those lands, contiguous to a specific Natural Heritage Feature or Area, where it is likely that development or site alteration would have a negative impact on the Feature or Area. The extent of the adjacent lands may be recommended by the Province or based on municipal approaches, which achieve the same objectives.

#### Adverse effects:

means one or more of:

- ii) injury or damage to property or plant and animal life;
- vi) rendering any property, plant, or animal life unfit for use by humans;
- vii) loss of enjoyment of normal use of property; and
- viii) interference with normal conduct of business.

#### Development:

means the creation of a new lot, a change in land use, or the construction of buildings and structures, requiring approval under the Planning Act; but does not include activities that create or maintain infrastructure authorized under an Environmental Assessment process; or works subject to the Drainage Act.

### **2.1.1 Review of Heritage Registers and Stakeholder Consultation**

As a part of the evaluation undertaken for this report, municipal, provincial and federal heritage registers and inventories were reviewed including:



- Kawartha Lakes *Heritage Property Register*;
- Ontario Heritage Trust Plaque Guide;
- Ontario Heritage Act Register – Ontario Heritage Trust;
- Conservation Easements – Ontario Heritage Trust;
- Canadian Register of Historic Places; and
- Federal Heritage Designations.

The following stakeholders were contacted with inquiries regarding the heritage status and for information concerning the Mill Pond Bridge (B 100018) and any additional adjacent cultural heritage resources.

**Table 1: Results of Stakeholder Consultation**

Contact	Organization	Date(s) of Communications	Description of Information Received
Shawnee Hayward, Library Specialist - Reference	Kawartha Lakes Public Library	18 and 19 March 2019	Response received. Provided article on the opening of Mill Pond Bridge.
Debra Soule, Economic Development Officer – Arts, Culture and Heritage	City of Kawartha Lakes	18 March 2019	Response received. Confirmed that there are no designated heritage resources adjacent to the study area.
Shelley Trennum, Records Clerk	City of Kawartha Lakes	20 and 26 March 2019	Response received. Provided information from a local history book and letter to Ontario Railway & Municipal Board
Bryan Robinson, Director of Public Works	City of Kawartha Lakes	18 and 20 March 2019	No response received at the time of this report.
Juan Rojas, Director of Engineering	City of Kawartha Lakes	18, 20 and 22 March 2019	Juan Rojas forwarded email to Corby Purdy, Supervisor, Infrastructure Design and Construction. Corby Purdy advised that the City of Kawartha Lakes did not have an inventory of structures.
Karla Barboza, (A) Team Lead, Heritage	Ministry of Tourism, Culture and Sport	18 and 27 March 2019	Response received. Confirmed that there are no properties designated by the Minister and no provincial heritage properties.
Kevin De Mille, Heritage Planner	Ontario Heritage Trust	18 and 27 March 2019	Response received. Confirmed that there are no conservation easement or provincial heritage properties within and/or adjacent to the subject bridge.

## 2.2 Cultural Heritage Evaluation Report

The purpose of the CHER is to examine a property as whole, its relationship to surrounding landscapes, and its individual elements. Conducting scholarly research and site visits inform such an examination. Background information is gathered from heritage stakeholders where available, local archives, land registry offices, local history collections at public libraries, and the Ministry of Tourism, Culture and Sport when appropriate. Once background data collection is complete, a site visit is carried out to conduct



photographic documentation and site analysis. These components provide a means to soundly establish the resource's cultural heritage value.

The scope of a CHER is guided by the Ministry of Tourism, Culture and Sport's *Ontario Heritage Toolkit* (2006). Generally, CHERs include the following components:

- A general description of the history of a study area as well as a detailed historical summary of property ownership and building(s) development;
- A description of the cultural heritage landscape and built heritage resources;
- Representative photographs of the structure, and character-defining details;
- A cultural heritage resource evaluation guided by the *Ontario Heritage Act* criteria;
- A summary of heritage attributes;
- Historical mapping and photographs; and
- A location plan.

Using background information and data collected during the site visit, the property is evaluated using criteria contained within O. Reg. 9/06 of the *Ontario Heritage Act*. The criteria are grouped into the following categories which determine the cultural heritage value or interest of a potential heritage resource in a municipality:

- i) Design/Physical Value;
- ii) Historical/Associative Value; and
- iii) Contextual Value.

Should the structure meet one or more of the above-mentioned criteria, a Heritage Impact Assessment (HIA) is required.

When evaluating the cultural heritage significance of the subject bridge, the *Ontario Heritage Bridge Guidelines for Provincially Owned Bridges* (OHGB) (MTO 2008) and the *Ontario Heritage Bridge Program* (MCC 1991) were consulted as points of reference.

The OHBG provides rationale for the protection and preservation of heritage bridges and is described as follows (MTO 2008:5-6):

Bridges are important parts of our engineering and architectural heritage. Perhaps more than any other type of structure built by man, they exhibit major historical change and innovation in the development and use of materials, in design, and in construction methods. They can be viewed as important elements and make a positive contribution to their surroundings. In some cases, they are rare survivors of an important bridge type or are revered because of their age, historical associations or other publicly perceived values.

### 3.0 HISTORICAL CONTEXT AND CONSTRUCTION

A review of available primary and secondary source material was undertaken to produce a contextual overview of the study area, including a general description of physiography, as well as Indigenous and Euro-Canadian land use and settlement.



### 3.1 Introduction

The Mill Pond Bridge (B 100018) is a four-span structure featuring a single span half-through Warren truss structure in the west integrated with a three span I-beam structure in the east. The bridge has not been identified as a heritage bridge in the Ontario Heritage Bridge inventory and does not currently have any status under the *Ontario Heritage Act*.

Cultural heritage resources are those buildings or structures that have one or more heritage attributes. Heritage attributes are constituted by and linked to historical associations, architectural or engineering qualities and contextual values. Inevitably many, if not all, heritage resources are inherently tied to “place”; geographical space, within which they are uniquely linked to local themes of historical activity and from which many of their heritage attributes are directly distinguished today. In certain cases, however, heritage features may also be viewed within a much broader context. Section 3.2 of this report details a brief historical background to the settlement of the surrounding area. A description is also provided of the construction of the bridge within its historical context (Section 3.3).

ASI has been invited to offer the following land acknowledgement on behalf of the Williams Treaties First Nations: *the Mill Pond Bridge study area is located on the Treaty 20 Michi Saagiig territory and in the traditional territory of the Michi Saagiig and Chippewa Nations, collectively known as the Williams Treaties First Nations, which include: Curve Lake, Hiawatha, Alderville, Scugog Island, Rama, Beausoleil, and Georgina Island First Nations. The Williams Treaties First Nations are the stewards and caretakers of these lands and waters in perpetuity, as they have been for thousands of years, and they continue to maintain this responsibility to ensure their health and integrity for generations to come.*

#### 3.1.1 Physiography

The study area is within drumlinized till plains of the Peterborough Drumlin Field, which extends from Simcoe County east to Hastings County and is generally characterized by rolling till plains overlying limestone bedrock. The region is approximately 4,532 km<sup>2</sup> and contains over 3000 drumlins in addition to many other drumlinoid hills and surface flutings (Chapman and Putnam 1984:169). The drumlins are composed of highly calcareous till but there are local differences in composition. The till plains of the regions were formed during the retreat of the Lake Ontario ice lobe of the Laurentide glacier and they indicate directionality of glacial advance and retreat. Till is produced from the advance of continental glacial ice. Soil and rock is carried forward by the ice, mixed and milled, producing a heterogeneous soil which is characteristic of glaciations (Chapman and Putnam 1984:10, 16).

#### 3.1.2 Indigenous Land Use and Settlement

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

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces



the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 BP and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Ellis et al. 1990; Ellis et al. 2009; Brown 1995:13).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 BP and exchange and interaction networks broaden at this time (Spence et al. 1990:136, 138) and by approximately 2,000 BP, evidence exists for macro-band camps, focusing on the seasonal harvesting of resources (Spence et al. 1990:155, 164). By 1,500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 BP - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch and Williamson 2013:13–15). Bands likely retreated to interior camps during the winter. It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 BP, lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (CE), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson 1990:317). By 1300-1450 CE, this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al. 1990:343). From 1450-1649 CE this process continued with the coalescence of these small villages into larger communities (Birch and Williamson 2013). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed.

Iroquoian expansion into the Trent Valley began in the late thirteenth and early fourteenth centuries, and the establishment of villages in these areas likely entailed a lengthy period of negotiation and interaction with the Algonquian-speaking groups that utilized the Georgian Bay littoral and the Trent valley. By the early sixteenth century, there was a well-established ancestral Huron-Wendat presence in the upper Trent valley, formed through in-situ cultural development and immigration focussed in the vicinity of Balsam Lake in the upper Trent valley (Gates St.Pierre 2015; Ramsden 2016; Warrick and Lesage 2016; Williamson 2016). Oral histories of both the Huron-Wendat and Mohawk identify ancestral homelands in the St. Lawrence River valley (Gaudreau and Lesage 2016; Lainey 2006; Richard 2016). Wendat accounts provided to early Europeans suggest that the abandonment of the Trent Valley must have occurred by the early seventeenth century as settlement focussed in Huronia – the Arendahronon (Rock Tribe), likely originating with the Benson and Trent-Foster communities, became the easternmost tribe of the confederacy, told Champlain that they had formerly lived in the Trent Valley and had abandoned the area due to fear of enemies (Biggar 1971:3:59). It is noted that Curve Lake First Nation does not agree with this history.

By 1600 CE, the communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. In the 1640s, the traditional enmity



between the Haudenosaunee<sup>1</sup> and the Huron-Wendat (and their Algonquian allies such as the Nipissing and Odawa) led to the dispersal of the Huron-Wendat.

Shortly after dispersal of the Wendat and their Algonquian allies, Ojibwa began to expand into southern Ontario and Michigan from a “homeland” along the east shore of Georgian Bay, west along the north shore of Lake Huron, and along the northeast shore of Lake Superior and onto the Upper Peninsula of Michigan (Rogers 1978:760–762). This history of their homeland and population movement, published in 1978 in the *Smithsonian Handbook of Northamerican Indians, Northeast Volume*, was constructed by Rogers using both Anishinaabeg oral tradition and the European documentary record. Rogers notes that this migration included those populations that were later known as the Chippewa, Ojibwa, Mississauga, and Saulteaux or “Southeastern Ojibwa” groups. He also noted linguistic differences between those groups split between Central Ojibwa-Odawa, spoken primarily by the Odawas of Manitoulin Island and Michigan and some Ojibwas (or Chippewas) of the Lower Peninsula of Michigan and that part of southwestern Ontario lying west of a north-south line drawn through the base of the Bruce peninsula east of which is spoken the second major dialect, spoken by Ojibwa (or Chippewa) and Mississauga. There is also sub-dialectical variation within each major dialect, and some groups and individuals whose speech is fundamentally of one type use certain forms characteristic of the other.

Ojibwa were first encountered by Samuel de Champlain in 1615 along the eastern shores of Georgian Bay. While he probably met Odawa, Etienne Brule later encountered other groups and by 1641, Jesuits had journeyed to Sault Sainte Marie (Thwaites 1896:11:279) and opened the Mission of Saint Peter in 1648 for the occupants of Manitoulin Island and the northeast shore of Lake Huron. The Jesuits reported that these Algonquian peoples lived “solely by hunting and fishing and roam as far as the “Northern sea” to trade for “Furs and Beavers, which are found there in abundance” (Thwaites 1901, 33:67), and “all of these Tribes are nomads, and have no fixed residence, except at certain seasons of the year, when fish are plentiful, and this compels them to remain on the spot” (Thwaites 1896-1901: 33:153). The locations of both Iroquoian and Algonquian groups at the time of first contact are well-documented. The Nipissing lived near Lake Nipissing, which was on the historic route between Quebec and the Wendat country; some wintered with the Wendat (Thwaites 1896-1901: 14:7; 18: 229; 21:239; 23:227; 33:153). Other Algonquian-speaking groups who wintered with the Wendat included the Algonquin led by Captain Yroquet in 1615-16 (Biggar 1971:3:94); the Tontthrataronons (an Algonquin tribe), about fifteen cabins of which were wintering near the mission of Saint Jean Baptiste to the Arendaehronons in the Relation of 1640-41 (Thwaites 1896-1901: 21: 247); some Island Algonquins noted in the Relation of 1643-44 (Thwaites 1896-1901: 26:301); and a village of the Atontrataronnon Algonquins, who abandoned their country on the shores of the St. Lawrence because of attacks from the Haudenosaunee to live in safety near the village of Saint Jean Baptiste as noted in the Relation of 1643-44 (Thwaites 1896-1901: 27:37).

Other Algonquian groups were recorded along the northern and eastern shores and islands of Lake Huron and Georgian Bay - the “Ouasouarini” [Chippewa], the “Outchougai” [Outchougai], the “Atchiligouan” [Achiligouan] near the mouth of the French River and north of Manitoulin Island the “Amikouai, or the nation of the Beaver” [Amikwa; Algonquian] and the “Oumisagai” [Mississauga; Chippewa] (Thwaites 1896-1901: 18:229, 231). Father Louys André was put in charge of the Mission of Saint Simon on the Lake of the Hurons (Thwaites 1896-1901: 55:133-155). At the end of the summer 1670, he began his mission work among the Mississagué, who were located on the banks of a river that empties into Lake Huron approximately 30 leagues from the Sault. These observations were further supported by the maps

<sup>1</sup> The Haudenosaunee are also known as the New York Iroquois or Five Nations Iroquois and after 1722 Six Nations Iroquois. They were a confederation of five distinct but related Iroquoian-speaking groups – the Seneca, Onondaga, Cayuga, Oneida, and Mohawk. Each lived in individual territories in what is now known as the Finger Lakes district of Upper New York. In 1722 the Tuscarora joined the confederacy.



attributed to Brébeuf (1631/1651) and Bressani (1657). Bréhant de Galinée also created a map of his 1669-70 travels, which provides the location of populations, individual villages, missions and forts, and interesting landscape features and marks the location of the Mississagué and the Amikwa on the north shore of Lake Huron, “the Saulteaux, or in Algonkin Waoüitiköungka Entaöuakk or Ojibways” at Sault Ste Marie (Coyne 1903:73).

After the Huron had been dispersed, the Haudenosaunee began to exert pressure on Ojibwa within their homeland to the north. While their numbers had been reduced through warfare, starvation, and European diseases, the coalescence of various Anishinaabeg groups led to enhanced social and political strength (Thwaites 1896-1901: 52:133) and Sault Sainte Marie was a focal point for people who inhabited adjacent areas both to the east and to the northwest as well as for the Saulteaux, who considered it their home (Thwaites 1896-1901: 54:129-131). The Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. From east to west, these villages consisted of Ganneious, on Napanee Bay, an arm of the Bay of Quinte; Quinte, near the isthmus of the Quinte Peninsula; Ganaraske, at the mouth of the Ganaraska River; Quintio, at the mouth of the Trent River on the north shore of Rice Lake; Ganatsekwyagon (or Ganestiquiagon), near the mouth of the Rouge River; Teyaiagon, near the mouth of the Humber River; and Quinaouatoua, on the portage between the western end of Lake Ontario and the Grand River (Konrad 1981:135). Their locations near the mouths of the Humber and Rouge Rivers, two branches of the Toronto Carrying Place, strategically linked these settlements with the upper Great Lakes through Lake Simcoe. The inhabitants of these villages were agriculturalists, growing maize, pumpkins and squash, but their central roles were that of portage starting points and trading centres for Iroquois travel to the upper Great Lakes for the annual beaver hunt (Konrad 1974; Williamson et al. 2008:50–52). Ganatsekwyagon, Teyaiagon, and Quinaouatoua were primarily Seneca; Ganaraske, Quinte and Quintio were likely Cayuga, and Ganneious was Oneida, but judging from accounts of Teyaiagon, all of the villages might have contained peoples from a number of the Iroquois constituencies (ASI 2013).

During the 1690s, some Ojibwe began moving south into extreme southern Ontario and soon replaced, it appears by force, the Haudenosaunee who had settled after 1650 along the north shores of Lakes Erie and Ontario. By the first decade of the eighteenth century, the Michi Saagiig Anishinaabeg (Mississauga Anishinaabeg) had settled at the mouth of the Humber, near Fort Frontenac at the east end of Lake Ontario and the Niagara region and within decades were well established to the south of their former homeland. In 1736, the French estimated there were 60 men at Lake Saint Clair and 150 among small settlements at Quinte, the head of Lake Ontario, the Humber River, and Matchedash (Rogers 1978:761). The history of Anishinaabeg movement from along the north shore of Lake Huron and their military actions against the Haudenosaunee is based almost entirely on Anishinaabeg oral tradition provided by elders such as George Copway, or Kahgegagahbowh or Robert Paudash. George Copway was born among the Mississauga in 1818 and followed a traditional lifestyle until his family converted to Christianity. He became a Methodist missionary in Canada and the US, including to the Saugeen Mission for a period, and later a popular author and lecturer (MacLeod 1992:197; Smith 2000).

According to Copway, the objectives of campaigns against the Haudenosaunee were to create a safe trade route between the French and the Ojibway, to regain the land abandoned by the Wendat and “drive the Iroquois wholly from the peninsula.” Copway describes more than 700 canoes meeting near Sault Ste Marie and splitting into three parties for a three-pronged attack via the Ottawa River, Lake Simcoe and along the Trent River, and the St. Clair River, and all of which had fierce engagements with the Haudenosaunee. While various editions of Copway’s book have these battles occurring in the mid-seventeenth century, common to all is a statement that the battles occurred around 40 years after the dispersal of the Huron (Copway 1850:88; Copway 1851:91; Copway 1858:91). Various scholars agree



with this timeline ranging from 1687, in conjunction with Denonville's attack on Seneca villages (Johnson 1986:48; Schmalz 1991:21–22) to around the mid- to late-1690s leading up to the Great Peace of 1701 (Schmalz 1977:7; Bowman 1975:20; Smith 1975:215; Tanner 1987:33; Von Gernet 2002:7–8).

Robert Paudash's 1904 account of Mississauga origins is like that of Copway's and relies on oral history. It came from Paudash's father, who died at the age of 75 in 1893 and was the last hereditary chief of the Mississauga at Rice Lake. His account in turn came from his father Cheneebesh, who died in 1869 at the age of 104 and was the last sachem or Head Chief of all the Mississaugas. He also relates a story of origin on the north shore of Lake Huron near the river that gave them their name having been founded by a party of Shawnee (Paudash 1905:7–8) and later, after the dispersal of the Wendat, carrying out coordinated attacks against the Haudenosaunee.

Francis Assikinack (1858:308–309) provides similar details on battles with the Haudenosaunee. Francis Assikinack (b. 1824) was an Ojibwa of Manitoulin Island. He enrolled at Upper Canada College when he was 16 and after graduation, worked for the Indian Department as an interpreter, clerk, and teacher.

Doug Williams (Gidigaa Migizi) is a former chief of the Curve Lake First Nation and is a Pipe Carrier, Sweat Lodge Keeper and Associate Professor/Director of Studies for the Ph.D. Program of the Chanie Wenjack School of Indigenous Studies at Trent University. His oral histories were related to him by his grandparents, great uncle and their contemporaries and he relates that the Mississauga pushed the Haudenosaunee out of southern Ontario (Migizi 2018:42–44). A detailed history of the Michi Saagiig prepared by Gitiga Migizi was provided to ASI by Dr. Julie Kapyrka of Curve Lake First Nation (Migizi and Kapyrka 2015) for inclusion in this report:

The traditional homelands of the Michi Saagiig (Mississauga Anishinaabeg) encompass a vast area of what is now known as southern Ontario. The Michi Saagiig are known as “the people of the big river mouths” and were also known as the “Salmon People” who occupied and fished the north shore of Lake Ontario where the various tributaries emptied into the lake. Their territories extended north into and beyond the Kawarthas as winter hunting grounds on which they would break off into smaller social groups for the season, hunting and trapping on these lands, then returning to the lakeshore in spring for the summer months.

The Michi Saagiig were a highly mobile people, travelling vast distances to procure subsistence for their people. They were also known as the “Peacekeepers” among Indigenous nations. The Michi Saagiig homelands were located directly between two very powerful Confederacies: The Three Fires Confederacy to the north and the Haudenosaunee Confederacy to the south. The Michi Saagiig were the negotiators, the messengers, the diplomats, and they successfully mediated peace throughout this area of Ontario for countless generations.

Michi Saagiig oral histories speak to their people being in this area of Ontario for thousands of years. These stories recount the “Old Ones” who spoke an ancient Algonquian dialect. The histories explain that the current Ojibwa phonology is the 5th transformation of this language, demonstrating a linguistic connection that spans back into deep time. The Michi Saagiig of today are the descendants of the ancient peoples who lived in Ontario during the Archaic and Paleo-Indian periods. They are the original inhabitants of southern Ontario, and they are still here today.

The traditional territories of the Michi Saagiig span from Gananoque in the east, all along the north shore of Lake Ontario, west to the north shore of Lake Erie at Long Point. The territory spreads as far north as the tributaries that flow into these lakes, from Bancroft and north of the Haliburton highlands. This also includes all the tributaries that flow from the height of land north of Toronto like the Oak Ridges Moraine, and all of the rivers that flow into Lake Ontario (the Rideau, the Salmon, the



Ganaraska, the Moira, the Trent, the Don, the Rouge, the Etobicoke, the Humber, and the Credit, as well as Wilmot and 16 Mile Creeks) through Burlington Bay and the Niagara region including the Welland and Niagara Rivers, and beyond. The western side of the Michi Saagiig Nation was located around the Grand River which was used as a portage route as the Niagara portage was too dangerous. The Michi Saagiig would portage from present-day Burlington to the Grand River and travel south to the open water on Lake Erie.

Michi Saagiig oral histories also speak to the occurrence of people coming into their territories sometime between 500-1000 A.D. seeking to establish villages and a corn growing economy – these newcomers included peoples that would later be known as the Huron-Wendat, Neutral, Petun/Tobacco Nations. The Michi Saagiig made Treaties with these newcomers and granted them permission to stay with the understanding that they were visitors in these lands. Wampum was made to record these contracts, ceremonies would have bound each nation to their respective responsibilities within the political relationship, and these contracts would have been renewed annually (see Gitiga Migizi and Kapyrka 2015). These visitors were extremely successful as their corn economy grew as well as their populations. However, it was understood by all nations involved that this area of Ontario were the homeland territories of the Michi Saagiig.

The Odawa Nation worked with the Michi Saagiig to meet with the Huron-Wendat, the Petun, and Neutral Nations to continue the amicable political and economic relationship that existed – a symbiotic relationship that was mainly policed and enforced by the Odawa people.

Problems arose for the Michi Saagiig in the 1600s when the European way of life was introduced into southern Ontario. Also, around the same time, the Haudenosaunee were given firearms by the colonial governments in New York and Albany which ultimately made an expansion possible for them into Michi Saagiig territories. There began skirmishes with the various nations living in Ontario at the time. The Haudenosaunee engaged in fighting with the Huron-Wendat and between that and the onslaught of European diseases, the Iroquoian speaking peoples in Ontario were decimated.

The onset of colonial settlement and missionary involvement severely disrupted the original relationships between these Indigenous nations. Disease and warfare had a devastating impact upon the Indigenous peoples of Ontario, especially the large sedentary villages, which mostly included Iroquoian speaking peoples. The Michi Saagiig were largely able to avoid the devastation caused by these processes by retreating to their wintering grounds to the north, essentially waiting for the smoke to clear.

Michi Saagiig Elder Gitiga Migizi (2017) recounts:

*“We weren’t affected as much as the larger villages because we learned to paddle away for several years until everything settled down. And we came back and tried to bury the bones of the Huron, but it was overwhelming, it was all over, there were bones all over – that is our story.*

*There is a misnomer here, that this area of Ontario is not our traditional territory and that we came in here after the Huron-Wendat left or were defeated, but that is not true. That is a big misconception of our history that needs to be corrected. We are the traditional people, we are the ones that signed treaties with the Crown. We are recognized as the ones who signed these treaties and we are the ones to be dealt with officially in any matters concerning territory in southern Ontario.*

*We had peacemakers go to the Haudenosaunee and live amongst them in order to change their ways. We had also diplomatically dealt with some of the strong chiefs to the north and tried to make peace as much as possible. So, we are very important in terms of keeping the*



*balance of relationships in harmony.*

*Some of the old leaders recognized that it became increasingly difficult to keep the peace after the Europeans introduced guns. But we still continued to meet, and we still continued to have some wampum, which doesn't mean we negated our territory or gave up our territory – we did not do that. We still consider ourselves a sovereign nation despite legal challenges against that. We still view ourselves as a nation and the government must negotiate from that basis.”*

Often times, southern Ontario is described as being “vacant” after the dispersal of the Huron-Wendat peoples in 1649 (who fled east to Quebec and south to the United States). This is misleading as these territories remained the homelands of the Michi Saagiig Nation.

The Michi Saagiig participated in eighteen treaties from 1781 to 1923 to allow the growing number of European settlers to establish in Ontario. Pressures from increased settlement forced the Michi Saagiig to slowly move into small family groups around the present-day communities: Curve Lake First Nation, Hiawatha First Nation, Alderville First Nation, Scugog Island First Nation, New Credit First Nation, and Mississauga First Nation.

Peace was achieved between the Haudenosaunee and the Anishinaabek Nations in August of 1701 when representatives of more than twenty Anishinaabek Nations assembled in Montreal to participate in peace negotiations (Johnston 2004:10). During these negotiations captives were exchanged and the Iroquois and Anishinaabek agreed to live together in peace. Peace between these nations was confirmed again at council held at Lake Superior when the Iroquois delivered a wampum belt to the Anishinaabek Nations. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there is no interruption to Anishinaabeg control and use of southern Ontario. While hunting in the territory was shared, and subject to the permission of the various nations for access to their lands, its occupation was by Anishinaabeg until the assertion of British sovereignty, the British thereafter negotiating treaties with them. Eventually, with British sovereignty, tribal designations changed (Smith 1975:221–222; Surtees 1985:20–21). The word “Saulteux,” for example, was gradually substituted by “Chippewa” while the north shore of Lake Ontario groups became known as “Mississauga,” although some observers, like John Graves Simcoe, described them as a branch of the “Chippewa” and the two terms were often used as synonyms. The nineteenth-century Mississauga also called themselves “Ojibwa,” especially when addressing an English-speaking audience (Jones 1861:31).

According to Rogers (1978), by the twentieth century, the Department of Indian Affairs had divided the “Anishinaubag” into three different tribes, despite the fact that by the early eighteenth century, this large Algonquian-speaking group, who shared the same cultural background, “stretched over a thousand miles from the St. Lawrence River to the Lake of the Woods.” With British land purchases and treaties, the bands at Beausoleil Island, Cape Croker, Christian Island, Georgina and Snake Islands, Rama, Sarnia, Saugeen, the Thames, and Walpole, became known as “Chippewa” while the bands at Alderville, New Credit, Mud Lake, Rice Lake, and Scugog, became known as “Mississauga.” The northern groups on Lakes Huron and Superior, who signed the Robinson Treaty in 1850, appeared and remained as “Ojibbewas” in historical documents.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases to the north of Lake Ontario in the early nineteenth century, the Crown acknowledged the Mississaugas as the owners of the lands between Georgian Bay and Lake Simcoe and entered into negotiations for additional tracts of land as the need arose to facilitate European settlement.



The eighteenth century saw the ethnogenesis in Ontario of the Métis, when Métis people began to identify as a separate group, rather than as extensions of their typically maternal First Nations and paternal European ancestry (Métis National Council n.d.). Métis populations were predominantly located north and west of Lake Superior, however, communities were located throughout Ontario (MNC n.d.; Stone and Chaput 1978:607,608). During the early nineteenth century, many Métis families moved towards locales around southern Lake Huron and Georgian Bay, including Kincardine, Owen Sound, Penetanguishene, and Parry Sound (MNC n.d.). Recent decisions by the Supreme Court of Canada (Supreme Court of Canada 2003; Supreme Court of Canada 2016) have reaffirmed that Métis people have full rights as one of the Indigenous people of Canada under subsection 91(24) of the Constitution Act, 1867.

The study area is within Treaty 20 and the Williams Treaties of 1923, on the traditional territory of the Michi Saagiig and Chippewa Nations, collectively known as the Williams Treaties First Nations, including the Mississaugas of Alderville First Nation, Curve Lake First Nation, Hiawatha First Nation, Scugog Island First Nation and the Chippewas of Beausoleil First Nation, Georgina Island First Nation and the Rama First Nation (Williams Treaties First Nations 2017). In October and November of 1923, the governments of Canada and Ontario, chaired by A.S. Williams, signed treaties with the Chippewa and Mississauga for three large tracts of land in central Ontario and the northern shore of Lake Ontario which had never been included in previous treaties (Crown-Indigenous Relations and Northern Affairs Canada 2013). Part of the Williams Treaties area includes lands originally negotiated under the Rice Lake Treaty, Treaty No. 20, signed on November 5, 1818 between the Mississaugas in the Rice Lake area and the Crown, which opened up colonization for settlers (Department of Indigenous and Northern Affairs 2016).

### **3.2 Historical Euro-Canadian Land Use: Township Survey and Settlement**

Historically, the study area is located in the former Emily Township, Victoria County in part of Lot 7, Concession III.

#### **3.2.1 Emily Township, Victoria County**

Emily Township was opened to settlers in 1821, after the signing of Treaty 20. The Cottingham and Laidley families were amongst the first to build log cabins in the area. In 1825 William Cottingham built a mill on Pigeon River, now Omemee. A wave of immigration from Ireland came to Emily Township, with a group of 142 families, part of the Robinson immigration, settling in the north half of the township. A store was opened near the mill in 1826, and in 1835 a post office was established, called Emily, though the hamlet was known as Williamstown. That same year the first school was built on the site of the later Bradburn's Hotel. In 1826 Methodists built a church on the northwest corner of Lot 13, Concession II. An Anglican and a Methodist church were later built in Williamstown. In 1843, the village had been enlarged and the name changed again, this time to Metcalfe. Omemee was incorporated as a village and in 1857, the inhabitants finally settled on the name, a Mississauga word meaning pigeon. The Port Hope, Lindsay and Beaverton Railway was built through the township in 1857, but the station was placed outside of the village. This line was part of the Midland Railway System within the Grand Trunk rail network and a branch was later extended to Peterborough and Millbrook. Omemee thrived as a centre for the area as a shipping point for timber and grain. By 1878 the population was 835, and there were three churches, a high school and a public school, a gristmill, two mills, a tannery, a foundry, a shingle mill, a cloth mill, four hotels and several stores. By 1920 the population was 467 (Andreae 1977; Kirkonnell 1967; Mika and Mika 1977; Miles & Co. 1879; Stephenson 1995; Pammett 1974; Ritter 2008).



### 3.3 History of the Study Area, Mill Pond Bridge, and Previous Bridge Crossing

#### 3.3.1 Review of Nineteenth and Twentieth-Century Mapping

Historically, the subject bridge is located in Lot 7, Concession III in the former Emily Township, Victoria County. The subject bridge is located in a residential context to the southeast of the centre of the settlement of Omemee.

The 1877 *Map of the County of Victoria* (Patterson 1877), the 1881 Victoria Supplement in the *Illustrated Atlas of the Dominion of Canada* (Belden 1881), and the 1881 *Omeme – Ontario* Goad’s map (Goad 1881) were examined to determine the presence of historic features within the study area during the nineteenth century (Table 2; Figure 2 - Figure 4).

Table 2: Nineteenth-century property owner(s) and historical features(s) within or adjacent to the study area

1877			1881		
Con #	Lot #	Property Owner(s)	Historical Feature(s)	Property Owner(s)	Historical Feature(s)
III	7	Omeme	Grist mills (2), town lots None	Omeme	Town lots
Pt. Cottingham Est.					

According to the 1877 *Map of the County of Victoria* (Figure 2) map, two grist mills were located on the Pigeon River and a road is shown crossing the river along what is now Mary Street, forming an island between the main river channel and the mill race to the east. The map also shows the large mill pond south of the study area.

The 1881 Victoria Supplement map (Figure 3) shows the limits of the historical Omeme village centre. A bridge is depicted within the village centre, however no individual buildings or property owners are depicted; nor is the material of the bridge identified.

The 1881 *Omeme – Ontario* Goad’s map (Figure 4) is a fire insurance plan for the community. The map identifies the material of the bridge as wood. A dam is visible south of the subject bridge at the head of the mill pond. It also depicts a grist and flour mill owned by J. Beatty, a woollen mill owned by Thos. (Thomas) Ivory, and a steam saw mill owned by Thos. (Thomas) Stevens. All these structures are depicted south of the bridge and adjacent to the dam.

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. In addition, the use of historical map sources to reconstruct/predict the location of former features within the modern landscape generally proceeds by using common reference points between the various sources. These sources are then geo-referenced in order to provide the most accurate determination of the location of any property on historic mapping sources. The results of such exercises are often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including the vagaries of map production (both past and present), the need to resolve differences of scale and resolution, and distortions introduced by reproduction of the sources. To a large degree, the significance of such margins of error is dependent on the size of the feature one is attempting to plot, the constancy of reference points, the distances between them, and the consistency with which both they and the target feature are depicted on the period mapping.



In addition to nineteenth-century mapping, fire insurance plans, topographical maps and aerial photographs from 1904, 1931, 1954, and 1999 were examined as part of this study. The 1904 *Omemeé – Ontario* Goad’s map (Goad 1904), the 1931 topographic map (Department of National Defence 1931), 1954 aerial photograph (Hunting Survey Corporation 1954), and the 1999 NTS Map were examined to determine the extent and nature of development and land uses within the study area (Figure 5 - Figure 8).

The 1904 Goad’s map (Figure 5) depicts a wooden bridge at the subject crossing and the dam, flour mill, and grist mill present to the south. The other structures adjacent to the bridge crossing depicted in earlier mapping are no longer present.

The 1931 topographic map (Figure 6) depicts Mary Street East as an unmetalled roadway carried over the river by a wooden bridge. On the east bank of the river, a church and house are shown fronting King Street, and a house is shown on the south side of Mary Street. On the west bank, one house is shown between King and Mary Streets. The dam to the south of the subject bridge crossing is depicted as a wooden structure.

The 1954 aerial photograph (Figure 7) and 1999 topographic map (Figure 8) illustrates that settlement of Omemeé remained within its historical limits surrounded by a rural agricultural landscape into the late-twentieth century. The subject bridge is depicted in the 1954 aerial mapping for the first time in this map series. The dam to the south of the subject bridge is also present. The aerial and topographic map indicates that little development occurred between 1954 and 1999.

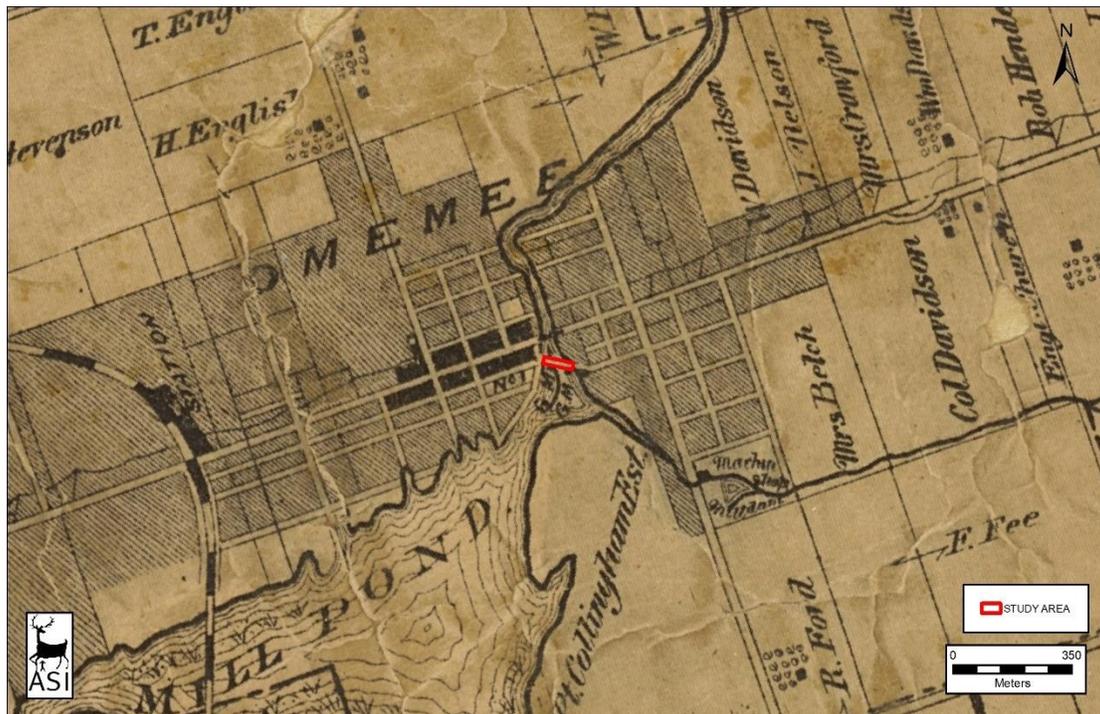


Figure 2: Location of Mill Pond Bridge overlaid on the 1877 Map of the County of Victoria

Source: Patterson 1877



Figure 3: Location of Mill Pond Bridge overlaid on the 1881 Victoria Supplement

Source: Belden 1881

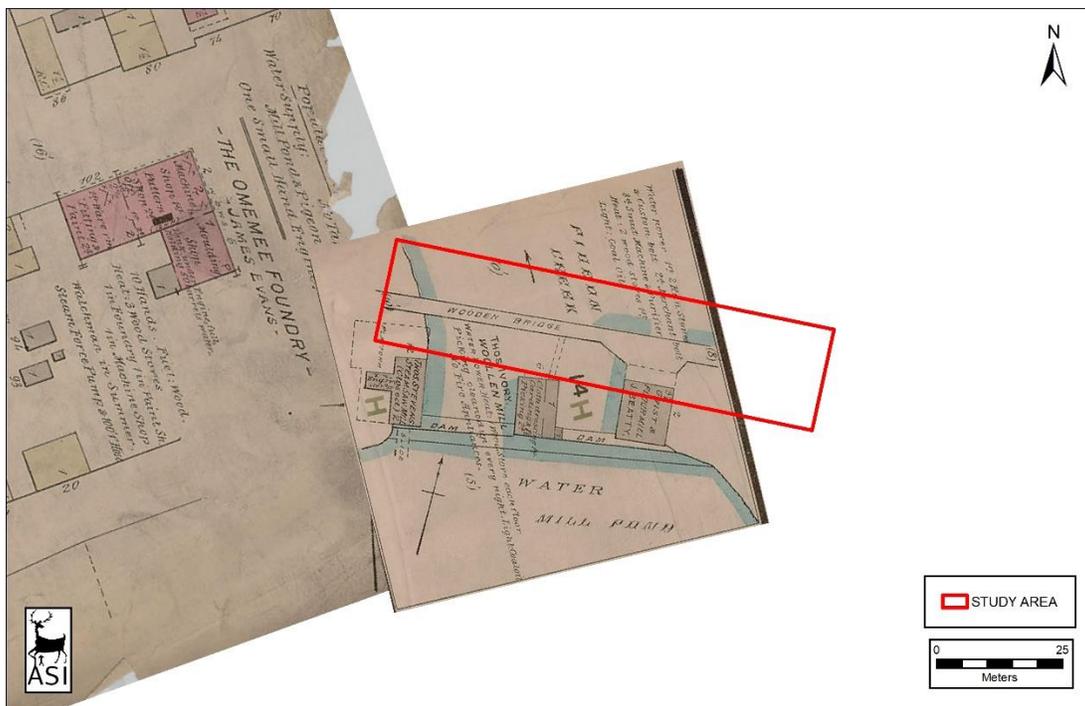


Figure 4: Location of Mill Pond Bridge overlaid on the 1881 Omeme – Ontario Goad's map

Source: Goad 1881

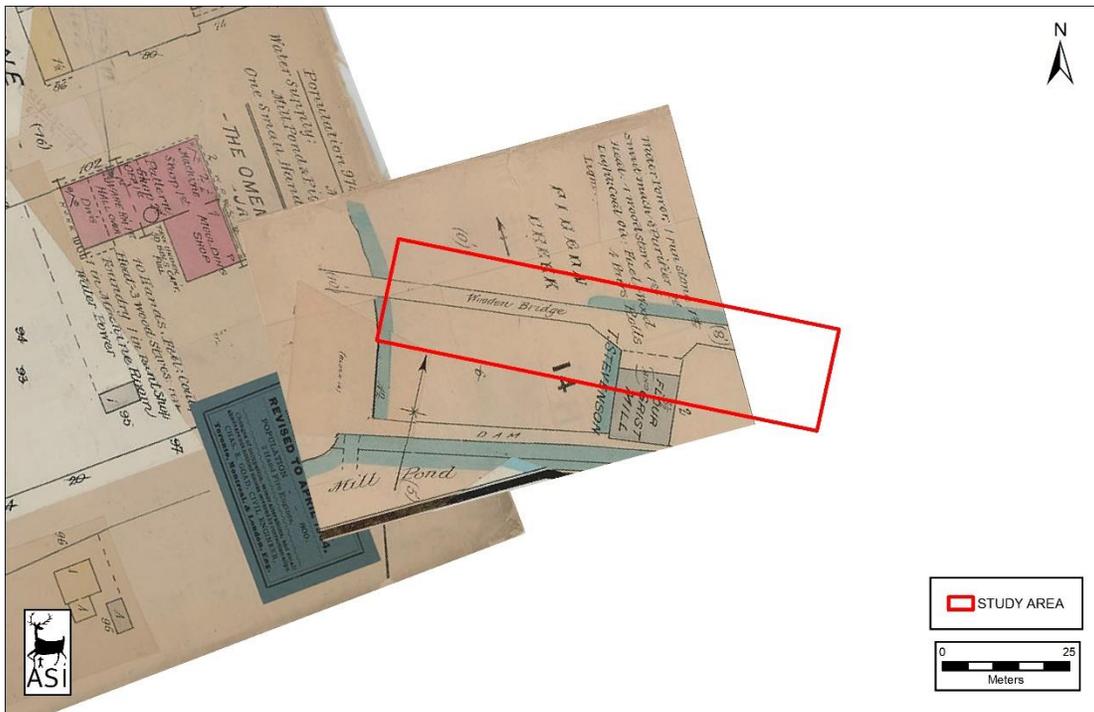


Figure 5: Location of Mill Pond Bridge overlaid on the 1904 *Omemee – Ontario* Goad’s map  
Source: Goad 1904



Figure 6: Location of Mill Pond Bridge overlaid on the 1931 NTS mapping  
Source: Lindsay Sheet 31D/7 (Department of National Defence, 1931)



Figure 7: Location of Mill Pond Bridge overlaid on 1954 aerial photography  
Source: Plate 443.783 (Hunting Survey Corporation Limited, 1954)

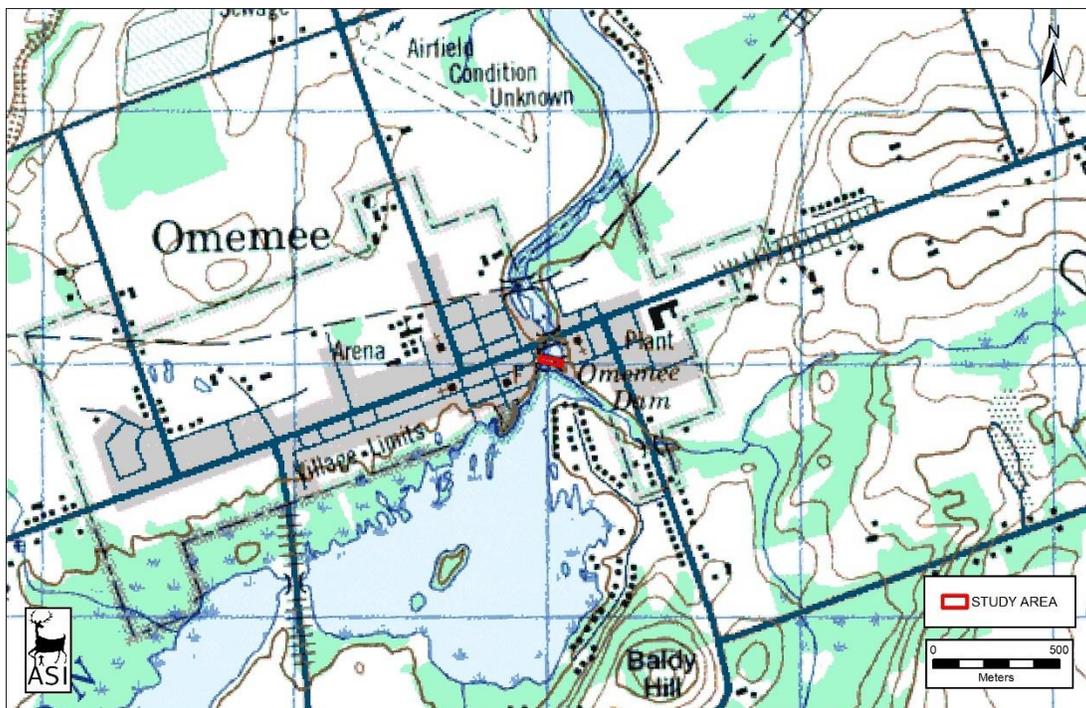


Figure 8: The Mill Pond Bridge overlaid on 1999 NTS mapping  
Source: (Natural Resources Canada 1999)

### 3.3.2 Previous Bridge Crossings in the location of the Mill Pond Bridge (B 100018)

The 1877 map of the County of Victoria, the 1881 Victoria supplement map, and the 1881 Goad's map (Figure 2 - Figure 4) all indicate that a wooden bridge carried Mary Street East over the Pigeon River prior to the construction of the subject bridge. A photograph from 1910 (Figure 9) captures an image of the previous bridge crossing. Figure 10 is a scaled model of the previous bridge crossing created by John McNeely McCrea, a resident of Omemee, in 1950. An undated photograph (Figure 11) captures the bridge again, and is assumed to post-date the 1910 photograph based on the additional windows and changes in cladding on the mill.



Figure 9: The wooden bridge crossing Pigeon River in 1910

Source: 1910 photograph, Courtesy of the Olde Gaol Museum



Figure 10: A model of the previous wooden bridge by John McCrea

Source: Made by John McCrea 1950, Courtesy of the Old Gaol Museum

A letter written to the Chairman of the Ontario Railway & Municipal Board by a Mr. Middlewish, from an inspection of the previous bridge records that it is in poor condition and that it needed replacement (Williamson and Jones 2000). According to Williamson and Jones (2000), the log bridge remained in use until the 1930s and then some time later the extant bridge was built.



Figure 11: Undated photograph of the bridge

Source: Fisher-Heasman 2008

### 3.4 Mill Pond Bridge Construction

#### 3.4.1 Early Bridge Building in Ontario

Up until the 1890s, timber truss bridges were the most common bridge type built in southern Ontario. Stone and wrought iron materials were also employed, but due to their higher costs and a lack of skilled craftsman, these structures were generally restricted to market towns. By the 1890s, steel was becoming the material of choice when constructing bridges given that it was less expensive and more durable than its wood and wrought iron predecessors. Steel truss structures were very common by 1900, as were steel girder bridges. The use of concrete in constructing bridges was introduced at the beginning of the twentieth century, and by the 1930s it was challenging steel as the primary bridge construction material in Ontario (Heritage Resource Centre 2008:7-8).

Factors impacting bridge design included increasing road allowances and clearance requirements, heavier traffic, higher speeds, safety standards, and most importantly, cost limitations (Cuming 1983:56). From the 1930s to the early 1950s, fewer bridges were constructed as a result of a steel shortage, and builders were challenged to develop more efficient ways to build structures with a heavier emphasis on concrete and minimal steel usage. Some of the stronger concrete bridges constructed in the 1930s formed part of the “Depression Era” Public Works Program that created work for the unemployed (PHCS 2004). Some of the new techniques developed included: pre-casting concrete components off site; “Hi-bond type” of reinforcing concrete; and pre-stressed concrete beam construction (Heritage Resource Centre 2008:9). The rigid frame, hollow concrete box beam and post-tensioned voided slab are some of the bridge types to develop during this period.

#### 3.4.2 Truss Bridge Construction

Steel truss structures were very common by 1900, as were steel girder bridges. After WWI the increase in personal vehicles meant that stronger bridges were necessary. The Pratt truss and the Warren truss dominated the early twentieth-century and were typically used for spans up to 400 feet (Comp and Jackson 1977).



Early truss bridges were commonly made from a series of straight steel bars. In general, most steel truss bridges were constructed at the turn of the twentieth century. The Pratt truss was first developed in 1844 under patent of Thomas and Caleb Pratt. The Pratt truss was the reverse design from the Howe truss, patented by William Howe in 1840. The Pratt has diagonals and verticals in tension. The Pratt trusses prevalent from the 1840s through to the early twentieth century were initially manufactured as a combination wood and iron but were later constructed as iron only. The Pratt type successfully survived the transition to iron construction and the second transition to steel. The Pratt truss inspired a large number of variations and modified subtypes during the nineteenth and early twentieth centuries.

A pony (half-through) truss bridge consists of a deck between the top of and bottom chords with no top lateral bracing. These bridges required less labour and material to erect than through trusses and were subsequently more cost effective. However, due to a lack of added stability, these bridges were suitable only for shorter spans. The pony truss became popular in the early twentieth century, though their popularity waned with the widespread adoption of concrete as a primary building material by the 1930s.

### **3.4.3 Beam and Girder Bridge Construction**

The most common type of bridge construction in Ontario, beam and girder bridges are typically formed using concrete or steel. This type of bridge consists of a series of solid members that run longitudinally for the length of the span, with additional bracing between the parallel members for support. While these bridges employ less material than bridges of slab construction, they are more complex in design which in effect increases cost. Beam and girder bridge construction is typical for spans greater than 10m; any less and slab bridge construction is preferred (MCL & MTO [n.d.]:31).

### **3.4.4 Construction of the Mill Pond Bridge (B 100018)**

Mary Street East opened in the later nineteenth century as a northwest to southeast roadway from Mary Street West across the Pigeon River and then a northeast and southwest road to Hughes Street South in Omemee. Mary Street East is depicted as an unmetalled roadway on the 1931 topographic map (Figure 6).

The subject bridge is a four span structure and features a single-span Warren half-through truss on the west, and a three span steel I-girder component on the east. No original structural drawings were available as part of this assessment. The engineer responsible for the design of the subject bridge is unknown. The Warren half-through truss span of the structure was originally located on the Little Bob River in Bobcaygeon, a settlement approximately 27 kilometers from the subject bridge (Watchman Warder 1953). Based on a review of archival photographs, there are two potential crossings in Bobcaygeon over the Little Bob River that may have been the original location of this truss span: the Centre Bridge depicted in Figure 12; and the North Bridge depicted in Figure 13. The original location of the relocated truss span is not known with certainty, it was removed at an unknown date, and was reinstalled in the subject crossing in 1952.

Construction costs for the bridge were anticipated to be \$20,000, but the total cost came in at \$18,975 due to a gift of the relocated Warren half-through truss from the Department of Highways (Watchman Warder 1953). The article identifies the Ontario Bridge Co. as receiving the contract to build the bridge and county work men did both approaches and the rip-rap at the west end (Watchman Warder 1953).



An article in the Watchman Warder describes the opening of the bridge as a large ceremony that was celebrated with a ribbon-cutting, speeches, music, and dancing, and drew large crowds (Figure 14). The Premier of Ontario, Leslie Frost, was originally scheduled to attend but had to cancel the appearance.

Figure 15 to Figure 17 capture the bridge and adjacent mill after it was constructed, however, are undated.

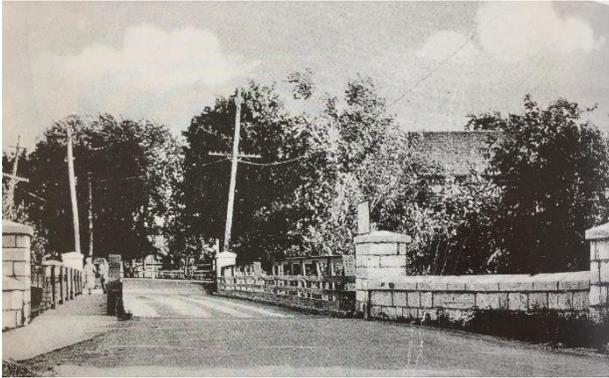


Figure 12: The centre bridge in Bobcaygeon  
Source: Van Oudenaren 1992



Figure 13: The north bridge in Bobcaygeon  
Source: Van Oudenaren 1992



Figure 14: People attending the official opening of the Mill  
Pond Bridge in 1953  
Source: Watchman Warder 1953



Figure 15: Undated photograph of the bridge, appears to have been after the extant bridge was constructed  
Source: Fisher-Heasman 2008



Figure 16: Undated photograph of the current bridge  
Source: Fisher-Heasman 2008



Figure 17: Undated photograph of the current bridge  
Source: Fisher-Heasman 2008

#### 4.0 EXISTING CONDITIONS AND INTEGRITY

A field review was undertaken by Johanna Kelly, ASI, on 26 March 2019 to conduct photographic documentation of the bridge crossing and to collect data relevant for completing a heritage evaluation of the structure. Results of the field review and bridge inspection reports were then utilized to describe the existing conditions of the bridge crossing. This section provides a general description of the bridge crossing and immediate vicinity. The location of the subject bridge is provided in Figure 18 and photographic documentation of the bridge crossing are provided in Appendix A. A site plan of the subject bridge is provided in Appendix B.

The Mill Pond Bridge (B 100018) is a four-span structure featuring a single span half-through Warren truss structure in the west integrated with a three span I-beam structure in the east. The superstructure rests on concrete abutments and concrete piers. The bridge carries a single lane of east and west Mary Street East vehicular traffic over the Pigeon River approximately 50 metres south of the intersection of King Street West and Mary Street East in the community of Omemee, City of Kawartha Lakes (Plates 1-32). The bridge was designed and constructed by the Ontario Bridge Co., however, the individual engineer responsible for its design is unknown. Construction of the approaches and rip-rap on the western



bank was provided by County of Victoria labourers (Watchman Warder 1953). The structure measures 54.9 metres in length, 4.3 metres in overall width, and has a roadway width of 3.8 metres.

The substructure of the subject bridge features reinforced concrete abutments and wingwalls on the northwest and southeast. The structure also features three cast-in-place concrete piers, with the western truss span sharing the westernmost pier. The eastern deck girder structure is supported by the westernmost pier on the west, two eastern piers in the centre of the structure, and the eastern abutment. The abutments and piers support the concrete deck and appear to be original to the 1952 construction.

The superstructure of the subject bridge features a steel Warren half-through truss component on the west portion of the structure and a steel I-beam component on the east portion. These steel support members support a cast-in-place concrete deck with an asphalt wearing surface. Several areas of the concrete deck exhibited localized spalling at the time of field inspection. Fourteen steel drain pipes are located on the deck and drain water into the river below.

The Warren half-through truss span is approximately 25 metres in length and was relocated from its original location on the Little Bob River in Bobcaygeon (Section 3.4.3). The half through truss features five panels, with steel T-beams forming the diagonals and vertical steel lattice buttressing. The top and bottom chords of the truss are steel T-beams. Five floor beams are featured beneath the deck and appear to be riveted to the bottom chords. Steel stingers and additional bracing is also located beneath the deck. Connections between structural elements of the truss span are riveted. The steel lattice pedestrian barrier on the truss portion of the bridge generally features riveted connections in the lattice and bolting in the top supports.

The eastern deck girder portion of the bridge features four I-beams in each span with a total length of 30 metres (AUE Structural Inc. 2017). The girders rest on the eastern abutment and on the piers with steel plate girders. Steel I-beam diaphragms are located between the girders and appear to be connected using bolts. Corrosion and some section-loss was noted in the girders and other structural steel elements at the time of field inspection.

The road surface on the structure measures 3.8 metres in width and is bound by metal lattice railings with horizontal metal posts. Both railing and posts are undecorated and were painted grey at the time of field inspection. The east and west approaches feature metal expansion joints, with an additional three expansion joints in the structure above the piers. The structure has a concrete curb on the north and south sides.

The approaches to the bridge are at-grade on the north and south sides and feature wooden posts on the north side; metal and concrete, as well as wooden posts on the south side. The approaches also feature warning signs, slow signs, pedestrian signs, and load limits on them.

The Pigeon River flows in a southwest to northeast alignment under the subject bridge which is downstream from a dam structure. The margins of the watercourse feature vegetated floodplains to the northwest and southeast of the structure. Stones line the Pigeon River south of the structure on the northwest side.

The subject bridge is located in a primarily residential context, with residences fronting on Mary Street East to the southeast, a fenced hydro-related facility to the southwest, and a residence fronting King Street West to the northwest.



Mill Pond Bridge (B 100018) is currently owned by the City of Kawartha Lakes. Inspections undertaken in 2017 noted structural deterioration of numerous elements and recommended the installation of code compliant end treatments and complete replacement of the structure within one year (AUE Structural Inc. 2017). The bridge inspection noted the following structural deficiencies and observations:

- The abutment walls at the east and west underside of the structure show signs of medium spall and a wide vertical crack at the west abutment; as well as cracks with efflorescence at the west abutment
- The west abutment ballast wall shows signs of wider vertical cracks
- The bearings of the west abutment walls have some light corrosion
- The southwest wingwall has wide cracks and signs of disintegration
- The wearing surface of the approaches to the east and west of the structure shows signs of severe cracks, potholes, settlement, and patched potholes
- The barrier posts and railing system on the north and south sides of the structure are substandard and should be replaced with a code compliant barrier and railing; there are also signs of light corrosion; damaged posts and bent railing system at the northwest and southeast
- The end treatments of the barriers are also substandard but in generally good condition
- The floor beams of the underside of the structure along the west span show signs of light to medium corrosion at the top and bottom flanges
- The girders along the underside of the structure at the east spans show signs of perforations at the girder webs at the northwest and southeast; there is section loss at web of the north and south girders of the east pier; there is also severe corrosion at the girder lends and light corrosion throughout
- The stringer along the underside of the structure at the west span has additional stringers which were previously installed; there is also signs of light to medium corrosion
- The bracing along the underside of the structure at the west span has signs of light corrosion throughout
- The coatings of the structural steel at the north and south sides as well as the underside of the structure shows signs of deterioration throughout the structural steel members
- The drainage system of the deck at the north and south sides of the structure shows signs of severe corrosion at the deck drains
- The thin slab soffit along the underside of the structure shows signs of narrow to wide cracks and some have efflorescence; there are also light to sever spalls and de-laminations
- The wearing surface along the top of the deck has signs of light raveling and medium to severe cracks
- The steel armouring of the joints at the east and west ends and at the piers are broken in several places
- The seals of the joints along the east and west end of the structure and at the piers shows signs of leakage, tears, and displacement; and the seals are jammed
- The shafts, columns, and pile bents along the underside of the structure shows signs of light to medium scaling, wide cracks with efflorescence at upstream; there are also some localized spalls at each pier and at the west pier below the stringer
- The curbs at the north and south sides of the structure shows signs of narrow to wide cracks; and light to severe spalls and disintegration
- The bottom chords along the north and south side of the structure shows signs of light corrosion throughout; at the northeast section it has deflected horizontally by 20 millimetres
- The top chords at the northwest has rotated due to impact damage



- The vertical and diagonals of the trusses along the north and south sides show signs of light corrosion throughout

Similar observations and recommendations were noted in the 2014 inspection (D.M. Wills Associates Limited 2014).





Figure 18: Location of the subject bridge

(ESRI Digital Globe 2018)

#### 4.1 Comparative Geographic and Historical Context of Bridges in the City of Kawartha Lakes and in Ontario

Mill Pond Bridge (B 100018) is a four-span structure constructed in 1952 that features a single-span Warren half-through truss component on the west section and a three span steel I-beam structure on the east. The structure features a concrete deck with an overall deck length of 54.9 metres. The truss span of the subject bridge was originally located in Bobcaygeon and was relocated to the Pigeon River crossing in Omemee in 1952 (Section 3.4.3). The individual components of the subject bridge (western truss span and eastern I-beam spans) were compared with similar half-through truss structures and I-beam/girder bridges found in the 2014 *City of Kawartha Lakes Structure Inspection Inventory* (City of Kawartha Lakes 2014). However, it is unknown if any of the bridges in the comparative sample feature multiple bridge types at the same crossing as is the case with the subject bridge. According to the City of Kawartha Lakes OSIM inventory, there are nine half-through truss bridges and thirty-seven I-beam/girder bridges in the City of Kawartha Lakes for a comparative sample size of forty-six bridges (Appendix E). These bridges have between one to nine spans; range from 3.4 metres to 174 metres in length; and were constructed during the early twentieth century to the early twenty-first century.

The subject bridge, constructed in 1952, is the tenth-oldest of 46 bridges in this comparative analysis with three bridges (VRT 003, VRT 006, and VRT 007), constructed in 1910 being the oldest. No other comparative structures were constructed in 1952 in the City of Kawartha Lakes. Compared with just the half-through truss span bridges, the subject bridge is the eight oldest of the nine comparative bridges, with the 1910 VRT 003 in Manvers being the oldest. However, the half-through truss was not constructed for the subject crossing in 1952 and the date of construction for the original Little Bob River crossing is unknown. The I-beam spans, constructed in 1952, are the eighth of 37 I-beam or girder structures in the comparative sample, with VRT 006 in Lindsay constructed in 1910 as the oldest. The subject bridge is not significant in terms of its age of construction.

The subject bridge, measuring 54.9 metres in overall length, is the fifth-longest of the forty-six bridges in this comparative sample with the Trent Canal Bridge (B 036358), with an overall deck length of 174 metres being the longest. The western half-through truss span measures approximately 25 metres in length and is the fifth longest of the nine comparative half-through trusses in this sample. The longest half-through truss structure is the Burnt River Bridge in Kinmount (B 89406) at 40.7 metres. The eastern I-beam component measures 30 metres in length and is the 11<sup>th</sup> longest of 37 comparative bridges. The Trent Canal Bridge (B 036358), with an overall deck length of 174 metres is the longest in this sample. The subject bridge is not significant in terms of overall length.

The subject bridge is a total of four spans, with a single-span half-through truss component on the west and a three-span I-beam component on the east. The single-span half-through truss component is the fourth longest in terms of number of spans in the sample of half-through truss structures, with Taylor's Bridge (B 400012) and Brook's Bridge (B 006754) in Dalton being the longest with three-spans each.

Based on the review and comparison of the forty-six available bridges in this comparative sample, the four-span Mill Pond Bridge (B 100018) constructed in 1952 and measuring 54.9 metres in overall length is not considered to be significant in terms of age, overall length, individual component length (half-through truss and I-beam components compared with other similar structures), or overall number of spans.

The following images are included to provide a comparison between the subject bridge and like structures in the City of Kawartha Lakes (Figure 19 to Figure 22).





Figure 19: Ken Reid Park Bridge (VRT 008) in Kenrei Park, half-through truss, constructed in 2000. Source: Courtesy of Google Streetview



Figure 20: Burnt River Bridge (B 89406) in Kinmount, a half-through truss structure constructed in 1920. Source: Courtesy of Google Streetview



Figure 21: Trent Canal Bridge (B 036358) in Bobcaygeon, I-beam, constructed in 1974. Source: Courtesy of Google Streetview



Figure 22: Wellington Street Bridge (B 017017) in Lindsay, I-beam, constructed 1965. Source: Courtesy of Google Streetview.

## 5.0 HERITAGE EVALUATION OF THE MILL POND BRIDGE (B 100018)

Table 3 contains the evaluation of the Mill Pond Bridge (B 100018) within the framework set out in O. Reg. 9/06. At the request of the client the bridge was also evaluated using the Ontario Heritage Bridge survey. The completed survey is included in Appendix D. Within the Municipal EA process, O. Reg. 9/06 is the prevailing evaluation tool when determining if a heritage resource, in this case a bridge, has cultural heritage value.

**Table 3: Evaluation of the Mill Pond Bridge (B 100018) using O. Reg. 9/06**

1. The property has design value or physical value because it:

Ontario Heritage Act Criteria	Yes/No	Analysis
i. is a rare, unique, representative or early example of a style, type, expression, material or construction method;	Yes	The Mill Pond Bridge is a single-lane structure constructed in 1952 that features a single-span steel Warren half-through truss component and a three-span steel I-beam bridge. The half-through truss component of the structure was originally located at the Little Bob River crossing in Bobcaygeon and was donated by the DHO for inclusion in the subject bridge in 1952. Based on a comparative sample of half-through truss structures (Section 4.1), it is likely that the truss span was originally constructed between 1910-1930 in Bobcaygeon. As the half-through truss component is representative of an early style and bridge type, the subject bridge meets this criterion.
ii. displays a high degree of craftsmanship or artistic merit, or;	No	The Mill Pond Bridge does not display a high degree of craftsmanship or artistic merit.
iii. demonstrates a high degree of technical or scientific achievement.	No	The Mill Pond Bridge does not demonstrate a high degree of technical achievement or scientific achievement.

**Table 3: Evaluation of the Mill Pond Bridge (B 100018) using O. Reg. 9/06**

2. The property has historical value or associative value because it:

<i>Ontario Heritage Act</i> Criteria	Yes/No	Analysis
i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community;	No	This bridge does not have direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community.
ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or;	No	This bridge does not have the potential to yield information that contributes to an understanding of a community or culture.
iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.	No	This bridge does not represent the work or ideas of a particular architect or building significant to the community.

3. The property has contextual value because it:

<i>Ontario Heritage Act</i> Criteria	Yes/No	Analysis
i. is important in defining, maintaining or supporting the character of an area;	No	The Mill Pond Bridge provides access to Mary Street East motorists over the Pigeon River in the community of Omemee. However, it is the bridging point and not the structure that maintain this character. Therefore, the subject structure does not meet this criterion.
ii. is physically, functionally, visually or historically linked to its surroundings, or;	Yes	The location of the subject bridge has served as an historical bridging point for vehicles over the Pigeon River and is physically associated with Mary Street East, an historically surveyed road. Although the bridge was moved to this location, the Mill Pond Bridge supports the historical context of the area as an important local bridging point. The subject bridge is physically and historically linked to its surroundings, and as such, the subject bridge meets this criterion.
iii. is a landmark.	No	While considered to be a familiar structure to in the local residential context, the subject bridge is not considered a landmark or gateway structure in the community of Omemee.

The above evaluation confirms that the Mill Pond Bridge meets at least one of the criteria set out in O. Reg. 9/06 of the *Ontario Heritage Act*. In particular, it is determined that the Mill Pond Bridge is a representative example of an early twentieth-century half-through truss bridge that was relocated to the present bridge crossing in 1952. The location of the subject bridge has served as an historical bridging point for vehicles over the Pigeon River since the mid-nineteenth-century and is physically and historically associated with Mary Street East, an historically surveyed road in the community of Omemee. Although the bridge was moved to this location, the Mill Pond Bridge supports the historical context of



the area as an important local bridging point. Given that the Mill Pond Bridge meets at least one of the criteria contained in O. Reg. 9/06, this structure is considered to have cultural heritage value.

## **5.1 Draft Statement of Cultural Heritage Value**

### **5.1.1 Description of Property**

*Name:* Mill Pond Bridge (B 100018)

The Mill Pond Bridge (B 100018) is a four-span structure featuring a single span half-through Warren truss structure in the west integrated with a three span I-beam structure in the east. The superstructure rests on concrete abutments and concrete piers. The bridge carries a single lane of east and west Mary Street East vehicular traffic over the Pigeon River approximately 50 metres south of the intersection of King Street West and Mary Street East in the community of Omemee, City of Kawartha Lakes. The structure measures 54.9 metres in length, 4.3 metres in overall width, and has a roadway width of 3.8 metres.

### **5.1.2 Cultural Heritage Value or Interest**

The Mill Pond Bridge is a single-lane structure constructed in 1952 that features a single-span riveted steel five panel Warren half-through truss component and a three-span steel I-beam component. The half-through truss component of the structure was originally located at the Little Bob River crossing in Bobcaygeon and was relocated by the DHO for inclusion in the subject bridge in 1952. Based on the comparative sample of existing half-through truss bridges in the City of Kawartha Lakes, this type of structure was popular in the local context in the 1910s to 1930s. The half-through truss component of the subject bridge is representative of an early-twentieth-century style and bridge type.

The location of the subject bridge has served as an historical bridging point for vehicles over the Pigeon River and is physically associated with Mary Street East, an historically surveyed road. Although the bridge was moved to this location, the Mill Pond Bridge supports the historical context of the area as an important local bridging point. The subject bridge is physically and historically linked to its surroundings in the community of Omemee.

### **5.1.3 Heritage Attributes**

Key heritage attributes that embody the heritage value of the subject bridge in the local context include:

- single-lane construction;
- riveted-connections;
- structural T-beam steel top and bottom chords and diagonals;
- steel floor beams and vertical steel lattice buttresses; and
- steel single-span truss Warren half-through configuration with five panels as representative of early twentieth century construction techniques.



Key heritage attributes that embody the historical, associative, and contextual value of the subject bridge include:

- historical bridging point across the Pigeon River;
- physically associated with Mary Street East, an historically surveyed road; and
- physically and historically linked to its surroundings in the community of Omemee.

## 6.0 CONCLUSIONS

The Mill Pond Bridge (B 100018) is a single-lane structure constructed in 1952 that features a single-span riveted steel five panel Warren half-through truss component and a three-span steel I-beam component. The subject bridge retains cultural heritage value when evaluated using O. Reg. 9/06 of the *Ontario Heritage Act*. In particular, the half-through truss component of the subject bridge is representative of an early-twentieth-century style and bridge type. Further, the location of the subject bridge has served as an historical bridging point for vehicles over the Pigeon River and is physically associated with Mary Street East, an historically surveyed road. The subject bridge is physically and historically linked to its surroundings in the community of Omemee.

## 7.0 RECOMMENDATIONS

Given the identified cultural heritage value of the Mill Pond Bridge (B 100018), the following recommendations should be considered:

1. This report should be submitted to heritage staff at the City of Kawartha Lakes, Heritage Victoria Committee, and with the Ministry of Tourism, Culture and Sport for review.



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**APPENDIX A: PHOTOGRAPHIC PLATES**



Plate 1: View of Mill Pond Bridge from Mary Street East, looking east.



Plate 2: View of west approach of the bridge, looking east.



Plate 3: View of Mill Pond Bridge east approach, looking west. Note the galvanized steel flex-beam guardrails at the approaches.



Plate 4: View of eastern I-beam portion of the structure, looking west.



Plate 5: South elevation of the bridge.



Plate 6: North elevation of the bridge.



Plate 7: View of truss support along the south side of the bridge.



Plate 8: General corrosion along the barrier steel lattice barrier on the southwest portion of the structure.

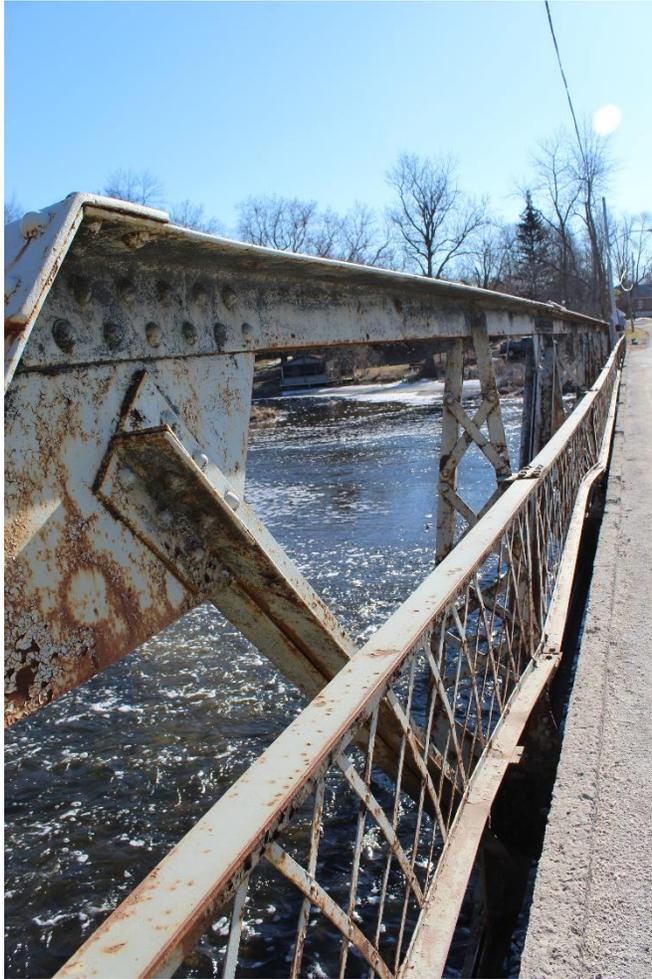


Plate 9: Oblique view of the northern truss and steel lattice railing from the west portal, looking northeast.



Plate 10:  
Westernmost  
panel on the south  
truss, looking  
north.



Plate 11: Oblique  
view of the south  
elevation, looking  
northeast.



Plate 12: Detail of the western steel expansion joint on the bridge.

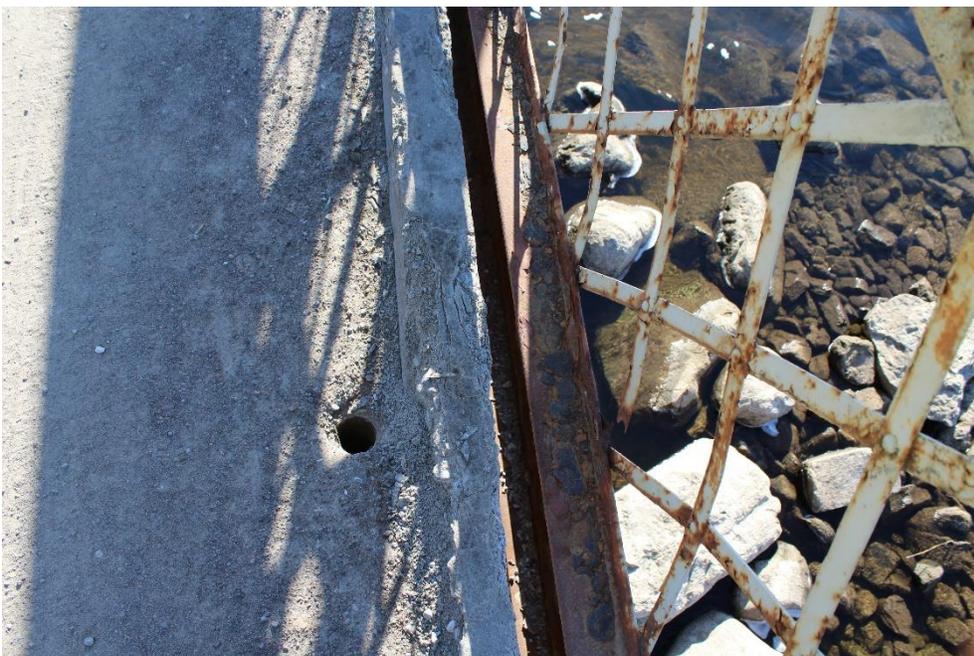


Plate 13: View of drainage hole along the bridge deck.

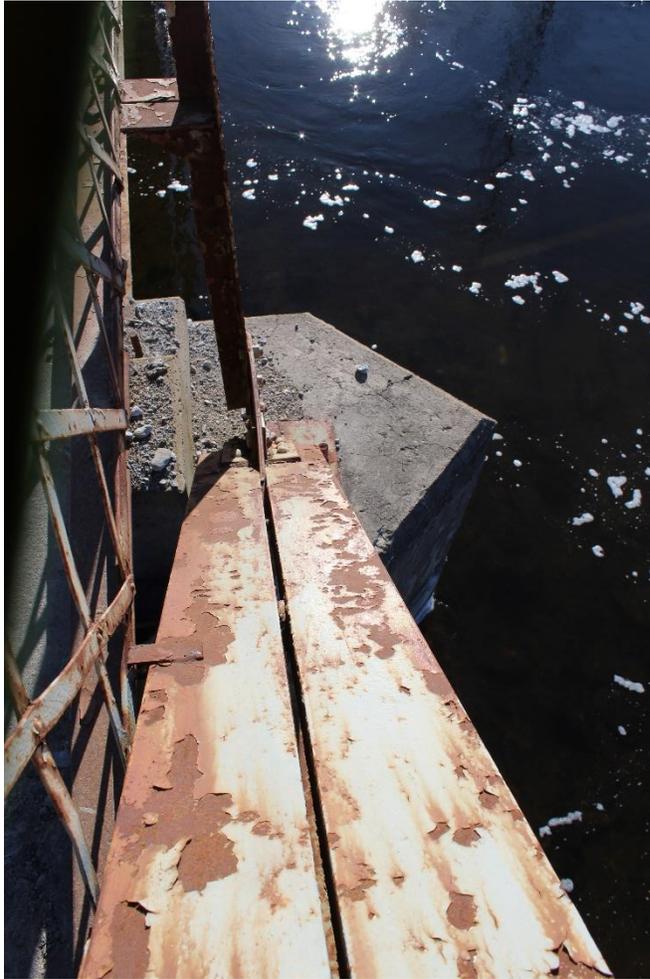


Plate 14: View of top of the western pier with pointed upstream face.



Plate 15: View of western pier on the south (upstream) side of the bridge.



Plate 16: View of western pier on the north (downstream) side of the bridge.



Plate 17: View of damage to steel lattice barrier.



Plate 18: View of metal barrier, with the portion at right featuring a small circular motif in the middle of the lattice. The portion at left lacks any ornamentation.



Plate 19: View of bolted joint connection along the top chord of the railing.



Plate 20: Riveted connection on the north portion of the west portal of the truss.



Plate 21: View of concrete abutment and truss on the southwest quadrant of the bridge.



Plate 22: View of concrete abutment and bearing seat on the east abutment, looking north from the southeast quadrant of the bridge.

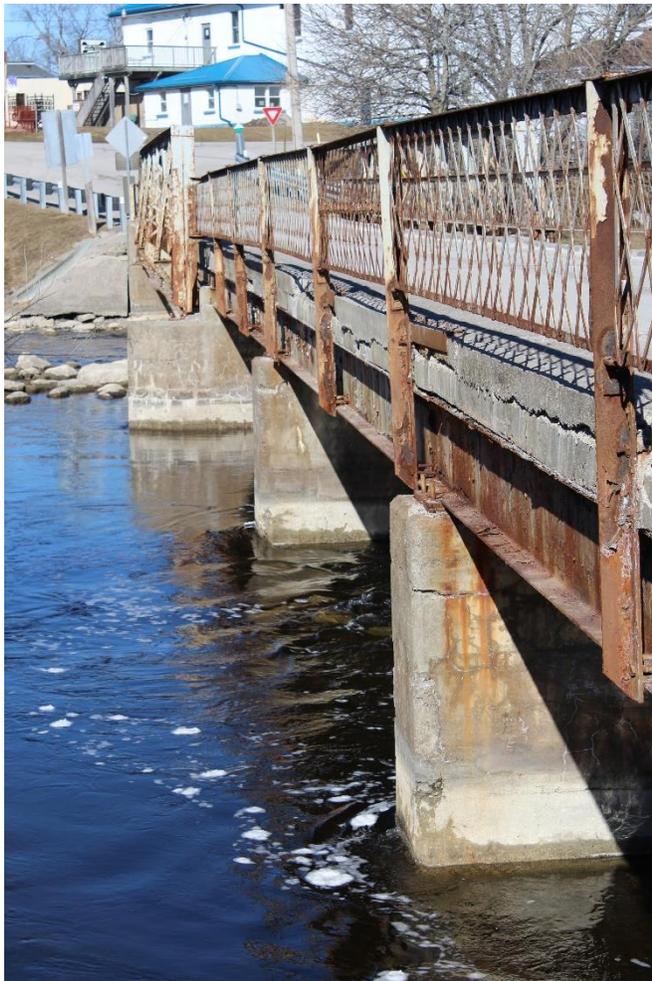


Plate 23: Oblique view of the south elevation of the I-beam spans and view of concrete piers on south (upstream) side.



Plate 24: Concrete deck on the south side of the I-beam portion of bridge.



Plate 25: Concrete deterioration of the soffit of the eastern I-beam structure (DM Wills and Associates 2014).



Plate 26: West face of west pier and west truss span soffit (DM Wills and Associates 2014).



Plate 27: Area adjacent to the northwest quadrant of the bridge, looking northwest.



Plate 28: Area adjacent to the southwest quadrant of the subject bridge, looking southwest. Note the dam immediately upstream of the subject bridge at far left.



Plate 29: Area adjacent to the southeast quadrant of the subject bridge, looking northeast.



Plate 30: Area adjacent to the northeast quadrant of the subject bridge, looking northeast.



Plate 31: View of King Street East Bridge to the north of the subject, looking north.



Plate 32: Dam to the south of the Mill Pond Bridge, looking south.



Plate 33: Hydro building northwest of the Mill Pond Bridge.



Plate 34: Omemees Afghanistan Memorial Garden and plaque, northwest of the Mill Pond Bridge East, looking southeast.

**APPENDIX B: SITE PLAN OF THE SUBJECT BRIDGE**





**APPENDIX C: COMPARATIVE BRIDGES IN THE 2014 CITY OF KAWARTHA LAKES STRUCTURE INSPECTIONS INVENTORY**

Table 4: Comparative Bridges in the 2014 City of Kawartha Lakes Structure Inspection Inventory

Structure No.	Bridge Name	Road Name	Type	Location	Year Built	No. of Spans	Deck Length (m)	Deck Width (m)
B 006656	Head River Bridge, Lot 31, Conc. IV, Dalton	Rama Dalton Boundary Rd Dal	I-Beam of Girders	3.30 km N. of 45 – Monck Rd	2006	1	25.6	9.6
B 006754	Brook's Bridge, Lot 25/26, Conc. XII, Dalton	Chisholm TI Dal	Half-Through Truss	0.10 km S. of Black River Road	1916	3	32.6	5.0
B 017017	Wellington Street Bridge, Lindsay	Wellington St E Ome	I-Beam or Girders	0.50 km W. of 17-Lindsay Street North	1965	2	43.7	14.0
B 018065	West Cross Creek Bridge, Lot 10, Conc. I/II	Elm Tree Rd Ops	I-Beam or Girders	3.3 km S. of 4-Little Britain Road	1966	1	18.9	10.4
B 018201	Lot 5, Conc. I/II, Fenelon	Elm Tree Rd Fen	I-Beam of Girders	0.75 km S. of 9 – Cambray Rd.	1930	1	6.4	10.2
B 024038	Emily Creek Bridge, Lot 1, Conc. IV, Verulam	County Road 24 Ver	I-Beam or Girders	3.76 km N. of 36-County Road 36	1990	1	25.9	11.3
B 031057	Ops/Manvers Bridge, Lot 21, Conc. XIV	Mount Horeb Rd Ops	I-Beam or Girders	0.42 km W. of Old Mill Road	1983	2	18.7	9.4
B 033032	Monroe's Bridge, Lot 1, Conc. IV, Carden	Centennial Park Rd Crd	I-Beam of Girders	3.16 km N. of 48 – Portage Rd.	2001	1	16.2	10.5
B 034038	Sixth Conc. Bridge, Lot 15, Conc. V/VI, Fenelon	Cameron Rd Fen	I-Beam of Girders	4.10 km N. of Highway 35	1963	1	7.9	8.2
B 035102	Trent Canal Bridge, Lot 7, CSPR, Bexley	Fenel Rd Eld Bes	I-Beam of Girders	1.22 km S. of 48 – Portage Rd.	1968	3	60.2	11.4
B 036016	Railway Overpass, Lot 19, Conc. X	County Road 36 Fen Ops	I-Beam or Girders	1.55 km N. of Highway 7	1960	1	35.6	11.2



Structure No.	Bridge Name	Road Name	Type	Location	Year Built	No. of Spans	Deck Length (m)	Deck Width (m)
B 036358	Trent Canal Bridge	East St S Bob Ver	I-Beam of Girders	0.50 km N. of 24 – King St. E.	1974	4	174.0	12.8
B 038130	CNR Omemee Bridge, Lot 5, Conc. III	Ski Hill Rd Emi	I-Beam or Girders	0.51 km S. of Highway 7	1993	1	9.4	11.4
B 043047	Corben Cr, Lot 20, Conc. V/VI, Somerville	Somerville 6 <sup>th</sup> Concession Smv	I-Beam or Girders	0.80 km E. of Northline Road	1977	1	3.4	8.0
B 044002	Lamb's Br, Lot 12, Conc. V, Somerville	Burnt River Rd Smv	I-Beam or Girders	0.20 km W. of 121-County Road 121	1962	1	29.6	11.3
B 044035	Hodgson S Br, Lot 11, Conc. VI/VII, Somerville	Somerville 7 <sup>th</sup> Concession Smv	I-Beam or Girders	0.46 km W. of 121-County Road 121	1968	1	32.6	10.4
B 045342	Gull River, Norland	Monck Rd Smv	I-Beam or Girders	0.15 km E. of Highway 35	1971	1	25.5	11.2
B 100013	Lot 17, Conc. V/VI	Wild Turkey Rd Man	I-Beam or Girders	1.6 km E of Wild Turkey Road	1920	1	5.0	5.0
B 100015	Jake Hart Bridge, Lot 16/17, Conc. XIII	St Mary Rd Man	I-Beam or Girders	1.55 km S. of 31-Mount Horeb Road	1966	3	18.3	7.3
<b>B 100018</b>	<b>Mill Pond Bridge, Lot 7, Conc. III</b>	<b>Mary St E Ome</b>	<b>Half-Through Truss</b>	<b>0.30 km E. of Sturgeon Rd. S.</b>	<b>1952</b>	<b>4</b>	<b>54.9</b>	<b>4.3</b>
B 24112	Road 24 Bridge	County Road 24 Ver	I-Beam or Girders	1.5 km E. of Kenstone Beach Road	2011	3	75.0	13.0
B 300001	Cattail Bridge, Lot 20/21, Conc. IV	Valentia Rd Mpo	I-Beam or Girders	0.95 km S. of 4-Little Britain Road	1985	1	17.4	9.5
B 300003	Davidson's Bridge, Lot 20, Conc. V/VI	Salem Rd Mpo	I-Beam or Girders	2.7 km E. of 6-Eldon Road	1962	1	15.5	8.5
B 300006	Percy Prouse Bridge, Lot 18, Conc. VI/VII	Cresswell Rd Mpo	I-Beam or Girders	1.4 km E. of 6-Eldon Road	1945	1	9.5	5.7
B 300008	Carew's Bridge, Lot 18, Conc. IX/X	Skyline Rd Mpo	I-Beam of Girders	1.50 km E. of 6 – Eldon Rd.	1963	1	14.0	8.6



Structure No.	Bridge Name	Road Name	Type	Location	Year Built	No. of Spans	Deck Length (m)	Deck Width (m)
B 300013	Jewell's Bridge, Lot 19, Conc. XI/XII	Peniel Rd Mpo	I-Beam of Girders	2.30 km E. of 6 – Eldon Rd.	1958	1	14.0	8.5
B 300024	Brown's No. 3 Bridge, Lot 16, Conc. XIII/IX, Eldon	Creek View Rd Eld	I-Beam of Girders	0.23 km N. of Palestine Rd.	2013	1	17.0	5.0
B 300039	Fur Farm Bridge, Lot 30/31, Conc. I, Fenelon	Fish Hawk Rd Fen	I-Beam or Girders	1.32 km E. of 35 – Fenel Rd.	1961	1	14.4	9.6
B 300042	King's Lane, Lot 3/4, Conc. I	King's Ln Fen	I-Beam or Girders	0.25 km W. of 18 – Elm Tree Rd.	2012	1	9.0	5.1
B 31072	Ops Bridge	Mount Horeb Rd Ops	I-Beam or Girders	0.50 km W. of Lilac Road	2010	1	29.3	12.6
B 400007	Doyle's Bridge, Lot 7, Conc. II/III, Bexley	Doyle Rd Bex	I-Beam of Girders	2.43 km S. of North Mountain Rd.	1927	1	6.8	4.9
B 400011	Gilbert's Bridge, Lot 25/26, Conc. I, Dalton	Hills Rd Dal	Half-Through Truss	0.40 km S. of Taylor Rd.	1920	1	25.0	4.9
B 400012	Taylor's Bridge, Lot 28, Conc. I/II, Dalton	Taylor Rd Dal	Half-Through Truss	0.90 km W. of Hills Rd.	1920	3	36.0	5.7
B 400014	Dartmoor Bridge, Lot 20/21, Conc. II, Dalton	Lake Dalrymple Rd Dal	I-Beam of Girders	0.50 km S. of 45 – Monck Rd.	1995	1	20.9	9.4
B 400016	Morton's Bridge	Morton Ln Dal	I-Beam or Girders	2.0 km E. of 6 – Chisholm Trail	2010	1	6.1	4.6
B 400018	B 400018	Black River Rd Dal	I-Beam of Girders	0.30 km SE. of B 400019	2000	1	18.3	1.5
B 400019	Victoria Falls Bridge, Lot 1, Conc. XIII, Dalton	Black River Rd Dal	Half-Through Truss	10 km E. of Lawishan Road	1924	2	21.7	4.0
B 400021	Doherty's Bridge, Lot 4, Conc. X/XI, Somerville	Somerville 11 <sup>th</sup> Concession Smv	I-Beam or Girders	2.21 km W. of 121-County Road 121	1963	3	53.1	9.1



Structure No.	Bridge Name	Road Name	Type	Location	Year Built	No. of Spans	Deck Length (m)	Deck Width (m)
B 57044	Golf Course Road Bridge	Golf Course Rd Man	I-Beam or Girders	1.1 km W. of 5 – Janetville Road	2010	1	25.3	12.6
B 89406	Burnt River, Kinmount	County Road 121 SMV	Half-Through Truss	0.15 km S. of 45 – Monck Rd.	1920	1	40.7	13.2
VRT 003	Lot 23, Conc. XII, Manvers		Half-Through Truss	1.4 km N. of Fleetwood Road	1910	1	10.2	3.0
VRT 004	Lot 24, Conc. XIV, Manvers		Half-Through Truss	4.3 km N. of Fleetwood Road	1911	1	10.2	3.2
VRT 006	Nayoro Park Bridge, Lindsay		I-Beam or Girders	0.10 km E. of Durham Street	1910	3	53.6	3.6
VRT 007	Rainbow Bridge, Lindsay		I-Beam or Girders	0.10 km E. of Water Street	1910	4	45.0	1.4
VRT 008	Ken Reid Park		Half-Through Truss	1.6 km N. of Kenrei Road	2000	1	36.2	3.2
VRT 009	Fenelon Falls Bridge		I-Beam or Girders	0.10 km W. of Francis Street West	1923	9	137.0	3.6

## **APPENDIX D: ONTARIO HERITAGE BRIDGE GUIDELINES EVALUATION OF THE MILL POND BRIDGE**

The Ontario Heritage Bridge Program was established in July 1983 to provide a framework for the consistent and considered decisions in allocating funds for the conservation of heritage road bridges. Key elements of the program include: a formal system of listing; the use of evaluation criteria; and consideration and application of a number of conservation strategies for any listed bridge subject to repair or replacement, including those subject to environmental assessment. Listing in the Ontario Heritage Bridge Program is intended to be a serious statement of heritage status, however does not confer outright protection.

The Ontario Heritage Bridge Program has been supplemented with the Ontario Heritage Bridge Guidelines, which was released as an “interim” document in January 2008. The evaluation criteria prescribed through this document consist of three scoring categories, which have been derived from Ontario Regulation 9/06 and include: Design/Physical Value, Contextual Value and Historic/Associative Value. A bridge that is evaluated using these criteria and achieves a score of 60 or greater is considered provincially significant and is a candidate for inclusion on the Ontario Heritage Bridge List.

The three categories and sub-criteria used to evaluate bridges with their maximum scores are as follows:



Table 5: Ontario Heritage Bridge Guidelines' Evaluation Criteria (MCL & MTO 2008 [Interim])

Criteria	Details	Maximum Score	Instructional Comments
Design/Physical Value		50	
Functional Design	Excellent	20	Displays a high degree of technical merit or scientific achievement <u>and</u> ; - Is one of a kind or prototype (first or earliest example of this kind), <u>or</u> - Is exemplary for its kind (i.e. the longest, highest etc. of its kind).
	Very Good	16	Displays a high degree of technical merit or scientific achievement <u>and</u> ; - Includes types in which fewer than five survive within a Region.
	Fair	12	This category includes types of which fewer than five survive within a Region, regardless of degree of technical merit or scientific achievement, even if many were originally constructed.
	Common	0	Of little value from a technical or scientific perspective. Many were built, many remain.
Visual Appeal	Excellent	20	High degree of craftsmanship or stylistic merit for most of the elements of the bridge; the design elements are well balanced and overall the structure is well proportioned; modifications are sympathetic.
	Good	12	Well-proportioned bridge that has a general massing that is appropriate to the landscape in which it is situated.
	Fair	4	Structure has only one or two noteworthy elements or is severely altered from its original form.
	None	0	No noteworthy features.
Materials	Excellent	10	Provincially rare or unusual materials. Stone and wrought iron are examples.
	Very Good	8	Regionally rare or unusual materials. Wood and riveted steel are examples.
	Good	5	Unusual combinations of materials.
	Common	0	Common materials or combinations.
Contextual Value		25	
Landmark	Excellent	15	Physically prominent: The bridge is highly significant physically and a primary symbol in the area. This includes 'gateway' structures. - It is a critical element in understanding a family of bridges within a corridor.
	Good	9	Locally significant: The bridge is perceived in the community as having symbolic value rather than purely visual or aesthetic value. - It is an important element in understanding a family of bridges within a corridor.
	Fair	3	A familiar structure in the context of the area. - It is a contributory element in understanding a family of bridges within a corridor.
	Common	0	No prominence in the area.



Character Contribution	Excellent	10	The bridge is the critical element in defining the character of the area and is of great important in establishing or protecting this character.
	Good	6	Maintains or contributes to the overall character of the area and is of municipal importance in establishing or protecting this character.
	Common	0	Character contribution is minimal.
Historic/Associative Value		25	
Designer/Construction Firm	Excellent	15	Known influential designer-builder: structure demonstrates or reflects the innovative work or ideas of companies, engineers, and/or builders having major impacts on the development of a community. For this item, community is broadly defined to include professional groups who have been demonstrably affected by the work in question.
	Good	9	Known prolific builder-designer: companies, engineers, and/or builders directly responsible for a large number of structures whose activities led to design or construction refinements and the establishment of standard forms.
	Fair	3	Known undetermined contribution: companies, engineers, and/or builders who have made a limited/minor contribution to the community.
	Unknown	0	Those responsible for design/construction are unknown.
Association with a historical theme, person or event	Excellent	10	Direct association with a theme or event that is highly significant in understanding the cultural history of the nation, province, or municipality.
	Good	6	Close association with a theme or event within an area.
	Common	0	Limited or no association with historic themes or events.

A listed bridge will not necessarily be conserved irrespective of technical, financial or other consideration. Nonetheless, decisions and strategies concerning the conservation of a listed bridge should consider the evaluation criteria and individual score the bridge has achieved. The higher the score, the more diligent the efforts should be to conserve the bridge in the most desirable manner possible.

### Mill Pond Bridge Heritage Evaluation

Using the Ontario Heritage Bridge Guidelines' (MCL & MTO 2008 [Interim]) criteria for evaluating bridges, the overall heritage evaluation resulted in a score of 38 with score summaries noted below.

Table 6: Heritage Evaluation of the Mill Pond Bridge (B 100018)

Criteria	Details	Maximum Score	Instructional Comments
<b>Design/Physical Value</b>		<b>50</b>	
Functional Design	Excellent	20	<b>0</b> -According to available documentation, there are nine other known examples of a half-through truss structures within the comparative sample in the City of Kawartha Lakes. While becoming increasingly uncommon bridge type, the subject bridge does not exhibit a high degree of design complexity.
	Very Good	16	
	Fair	12	
	Common	0	



Table 6: Heritage Evaluation of the Mill Pond Bridge (B 100018)

Visual Appeal	Excellent	20	<b>12</b> – The subject bridge has a scale and massing that is appropriate to the setting over the Pigeon River. The relocated half-through truss span complements the historical setting of the bridge crossing.
	Good	12	
	Fair	4	
	None	0	
Materials	Excellent	10	<b>8</b> – The subject bridge features a single-span riveted steel half-through truss component. Riveted steel is considered an example of a regionally rare and/or unusual material.
	Very Good	8	
	Good	5	
	Common	0	
<b>Contextual Value</b>		<b>25</b>	
Landmark	Excellent	15	<b>3</b> – The subject bridge is a familiar structure in the context of the community of Omemee. It is not considered a highly visible landmark or a gateway feature.
	Good	9	
	Fair	3	
	Common	0	
Character Contribution	Excellent	10	<b>6</b> – The subject bridge is considered to contribute to the riverine character of the area.
	Good	6	
	Common	0	
<b>Historic/Associative Value</b>		<b>25</b>	
Designer/Construction Firm	Excellent	15	<b>3</b> – The subject culvert was designed and constructed by the Ontario Bridge Company, an important designer and constructor of bridges in Southern Ontario. The individual engineer responsible for its design is unknown. Further, the original designer and constructor of the relocated half-through truss component is unknown.
	Good	9	
	Fair	3	
	Unknown	0	
Association with a historical theme, person or event	Excellent	10	<b>6</b> – The subject bridge has a close association with milling activities in Omemee, and the location of the crossing has connections to the early industrial development of the local area.
	Good	6	
	Common	0	

**Total Points = 38**

As the Mill Pond Bridge scored less than the 60 point threshold, is not considered provincially significant and is not a candidate for inclusion on the Ontario Heritage Bridge List



## **Heritage Impact Assessment**

**VOLUME 2: HERITAGE IMPACT ASSESSMENT  
MILL POND BRIDGE (B 100018)**

**MARY STREET EAST  
LOT 7, CONCESSION III  
FORMER EMILY TOWNSHIP  
CITY OF KAWARTHA LAKES, ONTARIO**

Prepared for:

**D.M. Wills Associates Limited**  
150 Jameson Drive  
Peterborough, ON K9J 0B9

ASI File: 19CH-003

April 2019



**VOLUME 2: HERITAGE IMPACT ASSESSMENT  
MILL POND BRIDGE (B 100018)**

**MARY STREET EAST  
LOT 7, CONCESSION III  
FORMER EMILY TOWNSHIP  
CITY OF KAWARTHA LAKES, ONTARIO**

**EXECUTIVE SUMMARY**

ASI was contracted by D.M. Wills Associates Limited to conduct a cultural heritage evaluation and heritage impact assessment as part of the Mill Pond Bridge Replacement/Rehabilitation Municipal Class Environmental Assessment and assesses the Mill Pond Bridge (B 100018). This report, Volume 2 provides the Heritage Impact Assessment (HIA); Volume 1 provides the Cultural Heritage Evaluation Report (CHER) as a separate, stand-alone report. The study area is located over the Pigeon River on Mary Street East in the community of Omemee, in the City of Kawartha Lakes.

Volume 1 of this report determined that the Mill Pond Bridge retains cultural heritage value following the application of O. Reg. 9/06 of the *Ontario Heritage Act*. In particular, the half-through truss component of the subject bridge is representative of an early-twentieth-century style and bridge type. Further, the location of the subject bridge has served as an historical bridging point for vehicles over the Pigeon River and is physically associated with Mary Street East, an historically surveyed road. The subject bridge is physically and historically linked to its surroundings in the community of Omemee. Given that it meets O. Reg. 9/06, the Draft Statement of Cultural Heritage Value or Interest and the list of heritage attributes prepared during the CHER have been included in this report.

At the time of this report, the preferred option being carried forward as part of the Environmental Assessment was still under consideration.

Given the identified cultural heritage value of the Mill Pond Bridge (B 100018) and the preferred option being carried forward as part of the Environmental Assessment still under consideration, the following recommendations and mitigation measures should be considered and implemented:

1. Where feasible, the preferred alternative should be selected to ensure the fewest direct and permanent impacts to the identified heritage attributes of the subject bridge. In this respect, Design Options 1-3 are preferred from the heritage perspective as they each ensure the continued function of the subject bridge as a crossing over the Pigeon River. Impacts related to Design Options 1-3 are considered minor and will result in the long-term preservation and use of the subject bridge.



2. Any proposed rehabilitation should be suitably planned and executed in a manner that limits the scale and magnitude of the intervention to addressing only the elements in need of repair, where feasible. All rehabilitation should be designed and executed in a manner that preserves the legibility of the heritage value of the subject bridge as an early-twentieth-century construction type.
3. In order to mitigate any unanticipated indirect impacts to the subject bridge, construction and staging activities should be suitably planned and executed to ensure that all heritage attributes identified in Section 2.3 are avoided and protected. Suitable staging activities may include temporary barriers and the establishment of no-go zones throughout construction. On-site workers should be notified of the cultural heritage significance of the subject bridge in general and the western half through truss in particular in advance of the starting construction.
4. Should Design Option 4-Bridge Widening and Replacement be chosen as the preferred alternative, salvaged elements of the half-through truss component of the subject bridge should be retained for inclusion in the replacement structure, where feasible. Further, the replacement structure should be designed in a manner that is sympathetic to the identified cultural heritage attributes of the subject bridge. The contextual associations of the subject bridge as a vehicular and pedestrian crossing over the Pigeon River would be maintained in a sympathetically-designed replacement structure.
5. Should Design Option 4-Bridge Widening and Replacement or Option 5-Bridge Removal be chosen as the preferred alternative, the bridge and setting should be professionally documented. The CHER and HIA completed for Mill Pond Bridge is sufficient documentation.
6. Should the removal of the subject bridge be chosen as the preferred alternative (Design Options 4 or 5), salvaged elements of the half-through truss component of the subject bridge should be retained for inclusion in a new structure at another crossing, in future conservation work, or for commemorative displays, where feasible.
7. Should the removal of the subject bridge be chosen as the preferred alternative (Design Options 4 or 5), consideration should be given to a commemorative strategy, such as developing a plaque in the location of the bridge. In this respect, an interpretive historical plaque/commemoration could be prepared including historical information, images and featuring salvaged heritage components from the subject bridge, where feasible. Heritage staff at the City of Kawartha Lakes and the Heritage Victoria Committee should be consulted for input regarding this commemoration.
8. This report should be filed with the heritage staff at the City of Kawartha Lakes, Heritage Victoria Committee, and with the Ministry of Tourism, Culture and Sport for review.



## PROJECT PERSONNEL

<i>Senior Project Manager:</i>	Lindsay Graves, MA <i>Senior Cultural Heritage Specialist   Senior Project Manager, Cultural Heritage Division</i>
<i>Project Manager:</i>	Johanna Kelly, MSc <i>Cultural Heritage Associate, Cultural Heritage Division</i>
<i>Project Coordinator:</i>	Katrina Thach, Hon. BA <i>Archaeologist   Project Coordinator, Environmental Assessment Division</i>
<i>Project Administrator:</i>	Carol Bella, Hon. BA <i>Executive Assistant, Operations Division</i>
<i>Field Survey:</i>	Johanna Kelly
<i>Report Preparation:</i>	Kirstyn Allam, Hon. BA, Dip. Advanced Museum Studies <i>Cultural Heritage Assistant, Cultural Heritage Division</i>  John Sleath, MA (2019) <i>Associate Archaeologist   Project Manager, Cultural Heritage Division</i>
<i>Graphics Preparation:</i>	Jonas Fernandez, MSc <i>Lead Archaeologist   Assistant Manager – Fleet &amp; Geomatics Specialist, Operations Division</i>
<i>Report Reviewers:</i>	Johanna Kelly  Lindsay Graves



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## 1.0 INTRODUCTION

Archaeological Services Inc. (ASI) was contracted by D.M. Wills Associates Limited to conduct a cultural heritage evaluation and heritage impact assessment as part of the Mill Pond Bridge Replacement/ Rehabilitation Municipal Class Environmental Assessment and assesses the Mill Pond Bridge (B 100018). This report, Volume 2 provides the Heritage Impact Assessment (HIA); Volume 1 provides the Cultural Heritage Evaluation Report (CHER). This project involves the replacement or rehabilitation of the Mill Pond Bridge, Structure No. B 100018, located on Mary Street East over the Pigeon River in the community of Omemee, within the City of Kawartha Lakes.

The Mill Pond Bridge (B 100018) has an east-west orientation and is located approximately 50 metres south of King Street West in the community of Omemee. The west portion of the bridge is a half-through truss and the east portion is an I-beam structure with concrete deck, built in 1952. It carries a single lane of Mary Street East over the Pigeon River in four spans with a total deck length of 54.9 metres and total width of 4.3 metres. The Mill Pond Bridge (B 100018) is not listed on the Kawartha Lakes *Heritage Property Register*.

Based on the deterioration of structural elements and non-compliant barrier systems observed in 2014 (AUE Structural Inc 2014) and 2017 (DM Wills and Associated Ltd. 2017), the Class EA process for the Mill Pond Bridge (B 100018) is required to identify a short and/or long-term plan for the structure. At the time of this report, the preferred option being carried forward as part of the Environmental Assessment was still under consideration and may involve rehabilitation, replacement, or removal without replacement. This report will assess impacts of the proposed alternatives in consideration of the determined cultural heritage value of the Mill Pond Bridge (B 100018).

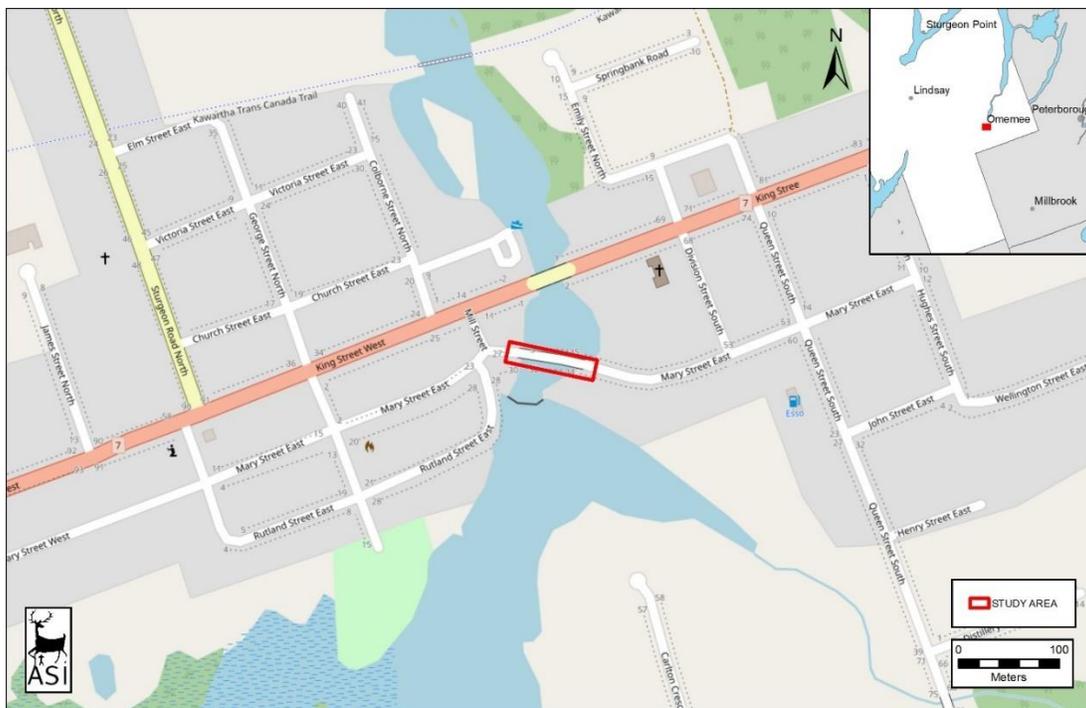


Figure 1: Location of the study area (in red).

Source: ©OpenStreetMap and contributors, Creative Commons-Share Alike License  
(CC-BY-SA ESRI Street Maps)



The research was conducted by Kirstyn Allam, analysis was conducted by John Sleath, and site visit and project management were conducted by Johanna Kelly, all of ASI. Senior project direction was provided by Lindsay Graves, Senior Cultural Heritage Specialist and Senior Project Manager of the Cultural Heritage Division, ASI. The present Heritage Impact Assessment follows the Ministry of Tourism, Culture and Sports' *Ontario Heritage Toolkit* (2006) and the *Standards and Guidelines for the Conservation of Historic Places in Canada* (2010). Research was completed to investigate, document, and evaluate the property and to measure the impact of the proposed development on the existing cultural heritage resource.

The scope of a HIA is provided by the MTC's *Ontario Heritage Tool Kit*. An HIA is a useful tool to help identify cultural heritage value and provide guidance in supporting environmental assessment work. As part of a heritage impact assessment, proposed site alterations and project alternatives are analyzed to identify impacts of the undertaking on the heritage resource and its heritage attributes. The impact of the proposed development on the cultural heritage resource is assessed, with attention paid to identifying potential negative impacts, which may include, but not limited to:

- Destruction of any, or part of any, significant heritage attributes or features;
- Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance;
- Shadows created that alter the appearance of a heritage attribute or change the viability of an associated natural feature or plantings, such as a garden;
- Isolation of a heritage attribute from its surrounding environment, context or a significant relationship;
- Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features;
- A change in land use (such as rezoning a church to a multi-unit residence) where the change in use negates the property's cultural heritage value;
- Land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect a cultural heritage resource, including archaeological resources.

Where negative impacts of the development on the cultural heritage resource and/or attributes are identified, mitigative or avoidance measures or alternative development or site alteration approaches are considered. Conservation options as outlined in the *Ontario Heritage Bridge Program* (MCC 1991) which is regarded as current best practice for conserving heritage bridges in Ontario and ensures that heritage concerns, and appropriate mitigation options are considered.

ASI's *Cultural Heritage Evaluation Report: Mill Pond Bridge* (draft, April 2019), concluded that the Mill Pond Bridge has cultural heritage value as it meets the criteria outlined in O. Reg. 9/06 of the *Ontario Heritage Act*, and that a resource-specific HIA would be required. The present report satisfies this requirement.

## 1.1 Description of Property

The Mill Pond Bridge (B 100018) has an east-west orientation and is located approximately 50 metres south of King Street West in the community of Omemee (Figure 1: Location of the study area (in red)). The Mill Pond Bridge (B 100018) is a four-span structure featuring a single span half-through Warren truss structure in the west integrated with a three span I-beam structure in the east. The superstructure rests on concrete abutments and concrete piers. The bridge carries a single lane of east and



west Mary Street East vehicular traffic over the Pigeon River approximately 50 metres south of the intersection of King Street West and Mary Street East in the community of Omemee, City of Kawartha Lakes (Figure 1). Historically, the subject bridge is located within Lot 7, Concession III, in the former Emily Township, Victoria County.

The Mill Pond Bridge was built in 1952 and consists of a repurposed half-through truss span on the west that was relocated from its original location in Bobcaygeon crossing the Little Bob River. The subject bridge was preceded by earlier wooden structures that provided a crossing over the Pigeon River. Directly upstream of the bridge is a dam, which was preceded by earlier dam structures that supported milling in the community of Omemee. According to available bridge documentation, the subject bridge is not known to have undergone any repairs or major rehabilitations.

The character of Mary Street East at the site of the bridge structure has developed in a residential context. The bridge crossing is bound by residences and is downstream from a dam.

Mill Pond Bridge (B 100018) is currently owned by the City of Kawartha Lakes. Inspections undertaken in 2017 noted structural deterioration of numerous elements and recommended the installation of code compliant end treatments and complete replacement of the structure within one year (AUE Structural Inc. 2017).

### **1.1.1 Adjacent Cultural Heritage Resources**

There are no previously identified cultural heritage resources adjacent to the Mill Pond Bridge (B 100018) in the community of Omemee.

## **2.0 STATEMENT OF CULTURAL HERIAGE VALUE**

The following draft Statement of Cultural Heritage Value is taken from the Volume 1 (CHER) of this report prepared by ASI in 2019.

### **2.1 Description of Property**

*Name:* Mill Pond Bridge (B 100018)

The Mill Pond Bridge (B 100018) is a four-span structure featuring a single span half-through Warren truss structure in the west integrated with a three span I-beam structure in the east. The superstructure rests on concrete abutments and concrete piers. The bridge carries a single lane of east and west Mary Street East vehicular traffic over the Pigeon River approximately 50 metres south of the intersection of King Street West and Mary Street East in the community of Omemee, City of Kawartha Lakes. The structure measures 54.9 metres in length, 4.3 metres in overall width, and has a roadway width of 3.8 metres.

### **2.2 Cultural Heritage Value or Interest**



The Mill Pond Bridge is a single-lane structure constructed in 1952 that features a single-span riveted steel five panel Warren half-through truss component and a three-span steel I-beam component. The half-through truss component of the structure was originally located at the Little Bob River crossing in Bobcaygeon and was relocated by the DHO for inclusion in the subject bridge in 1952. Based on the comparative sample of existing half-through truss bridges in the City of Kawartha Lakes, this type of structure was popular in the local context in the 1910s to 1930s. The half-through truss component of the subject bridge is representative of an early-twentieth-century style and bridge type

The location of the subject bridge has served as an historical bridging point for vehicles over the Pigeon River and is physically associated with Mary Street East, an historically surveyed road. Although the bridge was moved to this location, the Mill Pond Bridge supports the historical context of the area as an important local bridging point. The subject bridge is physically and historically linked to its surroundings in the community of Omemee.

### 2.3 Heritage Attributes

Key heritage attributes that embody the heritage value of the subject bridge in the local context include:

- single-lane construction;
- riveted-connections;
- structural T-beam steel top and bottom chords and diagonals;
- steel floor beams and vertical steel lattice buttresses; and
- steel single-span truss Warren half-through configuration with five panels as representative of early twentieth century construction techniques.

Key heritage attributes that embody the historical, associative, and contextual value of the subject bridge include:

- historical bridging point across the Pigeon River;
- physically associated with Mary Street East, an historically surveyed road; and
- physically and historically linked to its surroundings in the community of Omemee.





Figure 2: Location of the subject bridge

(ESRI Digital Globe 2018)



### 3.0 ASSESSMENT OF EXISTING CONDITIONS

A field review was undertaken by Johanna Kelly on 26 March 2019 to conduct photographic documentation of the bridge crossing and to collect data relevant for completing a heritage evaluation of the structure. Results of the field review and bridge inspection reports received from the client were then utilized to describe the existing conditions of the bridge crossing. This section provides a general description of the bridge crossing and immediate vicinity. The location of the subject bridge is provided in Figure 2, and photographic documentation of the bridge crossing are provided in Appendix A. A site plan of the subject bridge is provided in Appendix B.

The Mill Pond Bridge (B 100018) is a four-span structure featuring a single span half-through Warren truss structure in the west integrated with a three span I-beam structure in the east. The superstructure rests on concrete abutments and concrete piers. The bridge carries a single lane of east and west Mary Street East vehicular traffic over the Pigeon River approximately 50 metres south of the intersection of King Street West and Mary Street East in the community of Omemee, City of Kawartha Lakes (Plates 1-32). The bridge was designed and constructed by the Ontario Bridge Co., however, the individual engineer responsible for its design is unknown. Construction of the approaches and rip-rap on the western bank was provided by County of Victoria labourers (Watchman Warder 1953). The structure measures 54.9 metres in length, 4.3 metres in overall width, and has a roadway width of 3.8 metres.

The substructure of the subject bridge features reinforced concrete abutments and wingwalls on the northwest and southeast. The structure also features three cast-in-place concrete piers, with the western truss span sharing the westernmost pier. The eastern deck girder structure is supported by the westernmost pier on the west, two eastern piers in the centre of the structure, and the eastern abutment. The abutments and piers support the concrete deck and appear to be original to the 1952 construction.

The superstructure of the subject bridge features a steel Warren half-through truss component on the west portion of the structure and a steel I-beam component on the east portion. These steel support members support a cast-in-place concrete deck with an asphalt wearing surface. Several areas of the concrete deck exhibited localized spalling at the time of field inspection. 14 steel drain pipes are located on the deck and drain water into the river below.

The Warren half-through truss span is approximately 25 metres in length and was relocated from its original location on the Little Bob River in Bobcaygeon (Section 3.4.3). The half through truss features five panels, with steel T-beams forming the diagonals and vertical steel lattice buttressing. The top and bottom chords of the truss are steel T-beams. Five floor beams are featured beneath the deck and appear to be riveted to the bottom chords. Steel stingers and additional bracing is also located beneath the deck. Connections between structural elements of the truss span are riveted. The steel lattice pedestrian barrier on the truss portion of the bridge generally features riveted connections in the lattice and bolting in the top supports.

The eastern deck girder portion of the bridge features four I-beams in each span with a total length of 30 metres (AUE Structural Inc. 2017). The girders rest on the eastern abutment and on the piers with steel plate girders. Steel I-beam diaphragms are located between the girders and appear to be connected using bolts. Corrosion and some section-loss was noted in the girders and other structural steel elements at the time of field inspection.

The road surface on the structure measures 3.8 metres in width and is bound by metal lattice railings with horizontal metal posts. Both railing and posts are undecorated and were painted grey at the time of field



inspection. The east and west approaches feature metal expansion joints, with an additional three expansion joints in the structure above the piers. The structure has a concrete curb on the north and south sides.

The approaches to the bridge are at-grade on the north and south sides and feature wooden posts on the north side; metal and concrete, as well as wooden posts on the south side. The approaches also feature warning signs, slow signs, pedestrian signs, and load limits on them.

The Pigeon River flows in a southwest to northeast alignment under the subject bridge which is downstream from a dam structure. The margins of the watercourse feature vegetated floodplains to the northwest and southeast of the structure. Stones line the Pigeon River south of the structure on the northwest side.

The subject bridge is located in a primarily residential context, with residences fronting on Mary Street East to the southeast, a fenced hydro-related facility to the southwest, and a residence fronting King Street West to the northwest.

Mill Pond Bridge (B 100018) is currently owned by the City of Kawartha Lakes. Inspections undertaken in 2017 noted structural deterioration of numerous elements and recommended the installation of code compliant end treatments and complete replacement of the structure within one year (AUE Structural Inc. 2017). The bridge inspection noted the following structural deficiencies and observations:

- The abutment walls at the east and west underside of the structure show signs of medium spall and a wide vertical crack at the west abutment; as well as cracks with efflorescence at the west abutment
- The west abutment ballast wall shows signs of wider vertical cracks
- The bearings of the west abutment walls have some light corrosion
- The southwest wingwall has wide cracks and signs of disintegration
- The wearing surface of the approaches to the east and west of the structure shows signs of severe cracks, potholes, settlement, and patched potholes
- The barrier posts and railing system on the north and south sides of the structure are substandard and should be replaced with a code compliant barrier and railing; there are also signs of light corrosion; damaged posts and bent railing system at the northwest and southeast
- The end treatments of the barriers are also substandard but in generally good condition
- The floor beams of the underside of the structure along the west span show signs of light to medium corrosion at the top and bottom flanges
- The girders along the underside of the structure at the east spans show signs of perforations at the girder webs at the northwest and southeast; there is section loss at web of the north and south girders of the east pier; there is also severe corrosion at the girder lends and light corrosion throughout
- The stringer along the underside of the structure at the west span has additional stringers which were previously installed; there is also signs of light to medium corrosion
- The bracing along the underside of the structure at the west span has signs of light corrosion throughout
- The coatings of the structural steel at the north and south sides as well as the underside of the structure shows signs of deterioration throughout the structural steel members
- The drainage system of the deck at the north and south sides of the structure shows signs of severe corrosion at the deck drains



- The thin slab soffit along the underside of the structure shows signs of narrow to wide cracks and some have efflorescence; there are also light to severe spalls and de-laminations
- The wearing surface along the top of the deck has signs of light raveling and medium to severe cracks
- The steel armouring of the joints at the east and west ends and at the piers are broken in several places
- The seals of the joints along the east and west end of the structure and at the piers shows signs of leakage, tears, and displacement; and the seals are jammed
- The shafts, columns, and pile bents along the underside of the structure shows signs of light to medium scaling, wide cracks with efflorescence at upstream; there are also some localized spalls at each pier and at the west pier below the stringer
- The curbs at the north and south sides of the structure shows signs of narrow to wide cracks; and light to severe spalls and disintegration
- The bottom chords along the north and south side of the structure shows signs of light corrosion throughout; at the northeast section it has deflected horizontally by 20 millimetres
- The top chords at the northwest has rotated due to impact damage
- The vertical and diagonals of the trusses along the north and south sides show signs of light corrosion throughout

Similar observations and recommendations were noted in the 2014 inspection (D.M. Wills Associates Limited 2014).

#### 4.0 DESCRIPTION AND PURPOSE OF PROPOSED ACTIVITY

Based on the structural deficiencies observed in 2014 (D.M. Wills Associates Limited 2014) and 2017 (AUE Structural Inc. 2017) outlined in Section 3.0, the Class EA process for the Mill Pond Bridge is required to identify a short and/or long term plan for the structure. According to the Public Information Session (PIC) presentation on 4 February 2019 in Omemee, the purpose of the EA study is as follows:

Mill Pond Bridge #100018 has been identified through structural inspection to be in need of structural rehabilitation or replacement in the near future. The deterioration of the bridge brings into question its ability to perform its functional requirements without structural intervention in the form of rehabilitation. The purpose of this Study is to evaluate alternatives for the rehabilitation/replacement, or repurposing of the Mill Pond Bridge #100018 with respect to the cultural heritage of the bridge, archeological significance of the surrounding area, and potential environmental impacts of the respective alternatives. The findings of the Study will allow the City of Kawartha Lakes to proceed with preferred solution identified throughout the Environmental Assessment process (DM Wills Associated Limited 2019).

Public information sessions held in early 2019 outlined the range of options that were under consideration for the subject bridge as part of the Municipal Class Environmental Assessment (D.M. Wills Associates Limited 2019). Preliminary design drawings for each of these options is included in Appendix C. The following options include:

1. Two-way traffic flow with a new cantilever sidewalk
2. One-way traffic flow with a new cantilever sidewalk



3. Pedestrian bridge only
4. Bridge widening and replacement
5. Bridge removal

Option 1- Two-way traffic flow with a new cantilever sidewalk, would retain the current two-way vehicular crossing for motorists on Mary Street East and provide safe pedestrian crossing on a cantilevered sidewalk on the south elevation of the structure. This sidewalk is anticipated to be attached to the steel superstructure of the bridge and feature railings separating the roadway from the sidewalk. This alternative is also anticipated to result in structural repair of deteriorated or deficient elements, as necessary.

Option 2- One-way traffic flow with a new cantilever sidewalk, would alter existing two-way vehicular crossing for motorists on Mary Street East and restrict traffic to westbound travel. A cantilevered sidewalk would be attached to the steel superstructure on the south elevation of the bridge and feature railings separating the roadway from the sidewalk. This alternative is also anticipated to result in structural repair of deteriorated or deficient elements, as necessary.

Option 3- Pedestrian bridge only, would alter existing two-way vehicular crossing for motorists on Mary Street East and restrict traffic the crossing to pedestrian and cycling use only. A cul-de-sac would be created to provide a vehicle turnaround to the east of the structure on Mary Street East. This alternative is also anticipated to result in structural repair of deteriorated or deficient elements, as necessary.

Option 4- Bridge widening and replacement, would retain the current two-way vehicular crossing for motorists on Mary Street East and provide safe pedestrian crossing on the south side of the widened replacement structure. This sidewalk is anticipated to be separated from the roadway by a code-compliant railing system. This alternative is anticipated to result in the complete removal of the subject bridge superstructure and substructure.

Option 5- Bridge removal, would result in the removal of the existing structure and the elimination of the Mary Street East crossing over the Pigeon River. A cul-de-sac would be created to provide a vehicle turnaround to the east of the structure on Mary Street East, and the portion of Mary Street East to the west of the bridge would be eliminated.

At the time of report preparation, no preferred option had been selected as part of the Environmental Assessment.

## 5.0 IMPACT ASSESSMENT AND ALTERNATIVES CONSIDERED

Each of the five options under consideration for the subject bridge has the potential to result in impacts to the heritage attributes identified in Section 2.3.

The following table presents the results of impact assessment based on the *Ontario Heritage Bridge Guidelines* (OHBG, MCC 1991) Conservation Options. The Conservation Options are also considered appropriate project alternatives for the proposed undertaking. It considers possible direct adverse impacts, indirect adverse impacts, positive impacts, and the viability of this option in relation to the overall Environmental Assessment.



**Table 1: OHBG Impact Assessment of Mill Pond Bridge (B 100018)**

Conservation Options (OHBG 1991)	Analysis	Viable Option
1) Retention of existing bridge with no major modifications undertaken	This option would result in the lowest degree of intervention and fewest impacts to the subject bridge. However, this is not considered a viable option as it would not address the main problem/opportunity of the EA project.	No
2) Retention of existing bridge and restoration of missing or deteriorated elements where physical or documentary evidence (e.g. photographs or drawings) can be used for their design	This option would result in a lesser degree of intervention and fewer impacts to the subject bridge. However, this option is not considered viable as it would not result in code-compliant barrier installation.	No
3) Retention of existing bridge with sympathetic modification	<p>This option would result in a lesser degree of intervention and fewer impacts to the subject bridge.</p> <p>Option 1- Two-way traffic flow with a new cantilever sidewalk and Option 2- One-way traffic flow with a new cantilever sidewalk would result in sympathetic modifications of the existing bridge and enable its retention. Options 1 and 2 are considered viable and would result in the continued use of the existing structure as a vehicular crossing with the addition of a code-compliant pedestrian crossing.</p> <p>Additional impacts are anticipated if Option 1 or Option 2 are selected to repair or replace deteriorated structural elements outlined in Section 3.0. These repairs are considered necessary to ensure the continued use of the structure as a river crossing and would ensure the retention and long-term preservation of the structure.</p>	Yes
4) Retention of existing bridge with sympathetically designed new structure in proximity	This option is not considered viable as it would not address the underlying structural deficiencies in the subject bridge and would not ensure the preservation of the existing bridge crossing.	No

Conservation Options (OHBG 1991)	Analysis	Viable Option
<p>5) Retention of existing bridge no longer in use for vehicle purposes but adapted for pedestrian walkways, cycle paths, scenic viewing etc.</p>	<p>This option would result in a lesser degree of intervention and fewer impacts to the structural heritage attributes of the subject bridge as identified in Section 2.3. However, this option would alter the historical association of the subject bridge as a vehicular crossing for Mary Street East traffic.</p> <p>This option is considered viable and is under consideration as part of this EA as Option 3- Pedestrian use only.</p> <p>Additional impacts are anticipated if Option 3 is selected to repair or replace deteriorated structural elements outlined in Section 3.0. These repairs are considered necessary to ensure the continued use of the structure as a river crossing and would ensure the retention and long-term preservation of the structure.</p>	<p>Yes</p>
<p>6) Retention of bridge as heritage monument for viewing purposes only</p>	<p>This option would involve the retention of the existing bridge without rehabilitation, which is not viable as it would not ensure the preservation of the existing bridge crossing.</p>	<p>No</p>
<p>7) Relocation of bridge to appropriate new site for continued use or adaptive re-use</p>	<p>Given the state of structural deterioration, relocation of the subject bridge for continued use or adaptive re-use may not be possible without first repairing deteriorated elements. Additional direct impacts are expected through the process of removing the bridge from its current location.</p> <p>This option was not considered viable during the course of the Environmental Assessment and is not being carried over to detailed design due to financial considerations.</p>	<p>No</p>

Conservation Options (OHBG 1991)	Analysis	Viable Option
<p>8) Bridge Removal and replacement with a sympathetically-designed structure:</p>	<p>Direct impacts to the cultural heritage values of the Mill Pond Bridge are expected through the complete removal of the bridge. All cultural heritage attributes of the subject bridge identified in Section 2.1.3 would be removed.</p> <p>The contextual associations of the subject bridge as a vehicular and pedestrian crossing over the Pigeon River would be maintained in a sympathetically-designed replacement structure.</p> <p>This option is considered viable and is under consideration as part of this EA as Option 4- Bridge widening and replacement.</p>	<p>Yes</p>
<p>a) Where possible, salvage elements/ members of heritage bridge for incorporation into new structure or for future conservation work or displays</p>	<p>Direct impacts to the cultural heritage values of the Mill Pond Bridge are expected through the complete removal of the bridge.</p> <p>The use of salvage elements in a replacement structure is considered to be a viable option. Where possible, salvaged elements of the half-through truss component of the subject bridge should be retained for incorporation into the new structure to reduce impacts to the identified heritage attributes outlined in Section 2.1.3.</p> <p>If incorporation of salvage elements in the replacement structure is deemed to be infeasible based on the section loss and structural deterioration outlined in Section 3.0, salvaged elements of the half-through truss component of the subject bridge should be retained for inclusion in future conservation work or commemorative displays, where feasible.</p> <p>However, if removal of the subject bridge is chosen, physical heritage attributes including structural members should be salvaged for incorporation into future structures at other bridge crossings, conservation work, or displays, where feasible.</p>	<p>Yes</p>

Conservation Options (OHBG 1991)	Analysis	Viable Option
b) Replacement/removal of existing bridge with full recording and documentation of the heritage bridge	Direct impacts to the cultural heritage values of the Mill Pond Bridge are expected through the complete removal of the bridge.  Full recording with an appropriate commemoration strategy would ensure proper documentation for archival purposes.  If removal of the subject bridge is chosen, physical heritage attributes including structural members should be salvaged for incorporation into future structures at other bridge crossings, conservation work, or displays, where feasible.	Yes

The proposed potential options for the rehabilitation or replacement of the subject bridge are anticipated to have a range of potential impacts to the identified heritage attributes described in Section 2.3.

Option 1 and Option 2 are anticipated to result in direct impacts to the subject bridge as a result of the construction of a cantilevered pedestrian sidewalk on the south elevation. These impacts are anticipated to be directed to the south side of the structure only, which will limit visual impacts to the subject bridge from the King Street/Highway 7 bridge to the north. Additional impacts are also anticipated if Option 1 or Option 2 are selected to repair or replace deteriorated structural elements outlined in Section 3.0. These repairs are considered necessary to ensure the continued use of the structure as a river crossing and would ensure the retention and long-term preservation of the structure.

If Option 1 or 2 is selected as the preferred option, structural attachments to the existing half-through truss portion of the bridge should be planned to limit the number of connections and be designed to be reversible to limit impacts to the identified heritage attributes. The replacement pedestrian railing on the cantilevered sidewalk should be designed to replicate the appearance of the existing steel lattice railings while meeting modern design and safety codes, where feasible.

Option 3- Pedestrian bridge only would result in the retention of the subject bridge in situ and would result in few impacts to the physical heritage attributes identified in Section 2.3. However, this option would alter the historical association of the subject bridge as a vehicular crossing for Mary Street East traffic. Additional impacts are anticipated if Option 3 is selected to repair or replace deteriorated structural elements outlined in Section 3.0. These repairs are considered necessary to ensure the continued use of the structure as a river crossing and would ensure the retention and long-term preservation of the structure.

The removal and replacement of the existing steel lattice railings (if required to ensure code compliance in Options 1-3) should be planned and executed in a manner that limits the impacts to the superstructure of the bridge. The replacement railings should be designed using materials, colours, and finishes that will make the replacement railings physically and visually compatible with the subject bridge. The replacement railings should be chosen to be sympathetic to the appearance of the original railing, be



constructed of steel with a similar colour and finish and be of similar scale and design as the original railings while meeting modern safety and design codes.

Due to the limited impacts associated with Options 1-3 and the resulting preservation of the structure in situ, any of these three options are considered to be preferable to the more impactful options (Options 4 and 5) involving the complete demolition of the subject bridge.

Option 4- Bridge widening and replacement would retain the current two-way vehicular crossing for motorists on Mary Street East and provide safe pedestrian crossing on the south side of the widened replacement structure. However, this alternative would result in the complete removal of the subject bridge superstructure and substructure and all identified cultural heritage attributes outlined in Section 2.3. The replacement structure would, however, continue the historical association of the area as a bridging point over the Pigeon River. Due to the significant impacts associated with this alternative, Option 4 is not considered to be the preferred option from a heritage perspective.

Option 5- Bridge removal would result in the complete removal of the subject bridge superstructure and substructure and all identified cultural heritage attributes outlined in Section 2.3. This option would also eliminate the historical function of the area as a Mary Street East crossing over the Pigeon River. Due to the significant impacts associated with this alternative, Option 5 is considered to be the most impactful and least preferred option from a heritage perspective.

The proposed rehabilitations that are anticipated in Options 1-3 will result in permanent and direct impacts to the identified heritage attributes of the half-through truss portion of the subject bridge. These rehabilitations are anticipated to be directed to all deteriorated structural elements on the subject bridge to ensure public safety and modern code compliance. However, these alterations will result in the retention of the heritage elements in the rehabilitated structure, and as such as considered preferable to their demolition and replacement (Option 4) or demolition without replacement (Option 5). Further, these alterations will maintain the historical function of the bridge as a water crossing and are considered necessary to ensure the long-term maintenance and use of the structure. Any proposed rehabilitation should be suitably planned and executed in a manner that limits the scale and magnitude of the intervention to addressing only the elements in need of repair, where feasible. All rehabilitation should be designed and executed in a manner that preserves the legibility of the heritage value of the subject bridge as an early-twentieth-century construction type. In this respect, historical photographs should be reviewed to ensure interventions are planned based on documentary evidence.

In order to mitigate any unanticipated indirect impacts to the subject bridge, construction and staging activities should be suitably planned and executed to ensure that all heritage attributes identified in Section 2.3 are avoided and protected. Suitable staging activities may include temporary barriers and the establishment of no-go zones throughout construction. On-site workers should be notified of the cultural heritage significance of the subject bridge in general and the western half through truss in particular in advance of the starting construction. Plans for construction and staging activities may be finalized in consultation with a qualified heritage professional, and any changes to the proposed work should undergo review for potential impacts to the subject bridge.

## 6.0 COMMUNITY ENGAGEMENT

Consultation with staff at the City of Kawartha Lakes and the Kawartha Lakes Public Library regarding the subject property was undertaken as part of the Volume 1: Cultural Heritage Evaluation Report by ASI



in 2019 (ASI 2019). Responses from the various organizations provided additional historical information including an article about the opening ceremony of the subject bridge.

Public comments regarding the cultural heritage value of the subject bridge were raised during the PIC held on 4 February 2019 in Omemee (DM Wills email communication 4 April 2019). Comments provided by one member of the public indicated that the subject bridge may have been relocated from another location, and that the subject bridge had replaced an earlier timber bridge at the subject crossing. Based on a review of background historical documents and historical mapping included in Section 3.0 of Volume 1 (CHER) of this report, both of these statements are confirmed to be accurate.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

The Mill Pond Bridge retains cultural heritage value following the application of O. Reg. 9/06 of the *Ontario Heritage Act* (Section 2.0). In particular, the half-through truss component of the subject bridge is representative of an early-twentieth-century style and bridge type. Further, the location of the subject bridge has served as an historical bridging point for vehicles over the Pigeon River and is physically associated with Mary Street East, an historically surveyed road. The subject bridge is physically and historically linked to its surroundings in the community of Omemee.

At the time of this report, the preferred option being carried forward as part of the Environmental Assessment was still under consideration. The analysis of OHBG Conservation Options (Section 5.0, Table 1) determined that Conservation Options 3, 5, and 8 were viable given the identified heritage value of the bridge and the scope of the Environment Assessment. Where feasible, the preferred alternative should be selected to result in the minimum impacts to the heritage resource as possible while still achieving the scope of the EA as identified in the Problem/Opportunity Statement (Section 4.0). In this respect, Design Options 1-3 (Section 4.0) are preferred from the heritage perspective as they each ensure the continued function of the subject bridge as a crossing over the Pigeon River. Impacts related to Design Options 1-3 are considered minor and will result in the long-term preservation and use of the subject bridge. Design Options 4 and 5 are considered more impactful, and as such, are less preferred.

### 7.1 Mitigation Measures and Recommendations

Given the identified cultural heritage value of the Mill Pond Bridge (B 100018) and the preferred option being carried forward as part of the Environmental Assessment still under consideration, the following recommendations and mitigation measures should be considered and implemented:

1. Where feasible, the preferred alternative should be selected to ensure the fewest direct and permanent impacts to the identified heritage attributes of the subject bridge. In this respect, Design Options 1-3 are preferred from the heritage perspective as they each ensure the continued function of the subject bridge as a crossing over the Pigeon River. Impacts related to Design Options 1-3 are considered minor and will result in the long-term preservation and use of the subject bridge.
2. Any proposed rehabilitation should be suitably planned and executed in a manner that limits the scale and magnitude of the intervention to addressing only the elements in need of repair, where feasible. All rehabilitation should be designed and executed in a manner that preserves the



legibility of the heritage value of the subject bridge as an early-twentieth-century construction type.

3. In order to mitigate any unanticipated indirect impacts to the subject bridge, construction and staging activities should be suitably planned and executed to ensure that all heritage attributes identified in Section 2.3 are avoided and protected. Suitable staging activities may include temporary barriers and the establishment of no-go zones throughout construction. On-site workers should be notified of the cultural heritage significance of the subject bridge in general and the western half through truss in particular in advance of the starting construction.
4. Should Design Option 4-Bridge Widening and Replacement be chosen as the preferred alternative, salvaged elements of the half-through truss component of the subject bridge should be retained for inclusion in the replacement structure, where feasible. Further, the replacement structure should be designed in a manner that is sympathetic to the identified cultural heritage attributes of the subject bridge. The contextual associations of the subject bridge as a vehicular and pedestrian crossing over the Pigeon River would be maintained in a sympathetically-designed replacement structure.
5. Should Design Option 4-Bridge Widening and Replacement or Option 5-Bridge Removal be chosen as the preferred alternative, the bridge and setting should be professionally documented. The CHER and HIA completed for Mill Pond Bridge is sufficient documentation.
6. Should the removal of the subject bridge be chosen as the preferred alternative (Design Options 4 or 5), salvaged elements of the half-through truss component of the subject bridge should be retained for inclusion in a new structure at another crossing, in future conservation work, or for commemorative displays, where feasible.
7. Should the removal of the subject bridge be chosen as the preferred alternative (Design Options 4 or 5), consideration should be given to a commemorative strategy, such as developing a plaque in the location of the bridge. In this respect, an interpretive historical plaque/commemoration could be prepared including historical information, images and featuring salvaged heritage components from the subject bridge, where feasible. Heritage staff at the City of Kawartha Lakes and the Heritage Victoria Committee should be consulted for input regarding this commemoration.
8. This report should be filed with the heritage staff at the City of Kawartha Lakes, Heritage Victoria Committee, and with the Ministry of Tourism, Culture and Sport for review.



## 8.0 REFERENCES

### ASI

- 2019 *Cultural Heritage Evaluation, Mill Pond (B 100018), Mary Street East, Former Emily Township, City of Kawartha Lakes, Ontario*. Draft report on file at ASI.

### AUE Structural Inc.

- 2017 *Ontario Structure Inspection Manual – Inspection Form, Mill Pond Bridge B 100018*. Report on file at ASI.

### D.M. Wills Associates Limited

- 2014 *Ontario Structure Inspection Manual – Inspection Form, Mill Pond Bridge B 100018*. Report on file at ASI.  
2019 *Mill Pond Bridge #100018 Rehabilitation / Replacement Municipal Class Environmental Assessment, Public Information Centre – Open House*. Presentation on file at ASI.

### Ministry of Culture, Ontario

- 1980 *Guidelines on the Man-Made Heritage Component of Environmental Assessments*  
1992 *Guidelines for Preparing the Cultural Heritage Resource Component of Environmental Assessments*  
2009 *Ontario Heritage Act*

### Ministry of Culture and Communications, Ontario

- 1991 *Ontario Heritage Bridge Program*. Toronto: Queen's Printer.

### Ministry of Environment, Ontario

- 2006 *Environmental Assessment Act*. Ministry of Municipal Affairs and Housing, Ontario  
2005 *Ontario Planning Act*

### Ministry of Tourism and Culture, Ontario

- 2006 *Ontario Heritage Tool Kit*  
2010 *Standards and Guidelines for the Conservation of Provincial Heritage Properties*  
2010 *Check Sheet for Environmental Assessments: Screening for Impacts to Built Heritage Resources and Cultural Heritage Landscapes*

### Ministry of Transportation, Ontario

- 2008 *Ontario Heritage Bridge Guidelines for Provincially Owned Bridges*. Toronto: MTO, Planning and Environment Office.



**APPENDIX A: PHOTOGRAPHIC PLATES**



Plate 1: View of Mill Pond Bridge from Mary Street East, looking east.



Plate 2: View of west approach of the bridge, looking east.



Plate 3: View of Mill Pond Bridge east approach, looking west. Note the galvanized steel flex-beam guardrails at the approaches.



Plate 4: View of eastern I-beam portion of the structure, looking west.



Plate 5: South elevation of the bridge.



Plate 6: North elevation of the bridge.



Plate 7: View of truss support along the south side of the bridge.

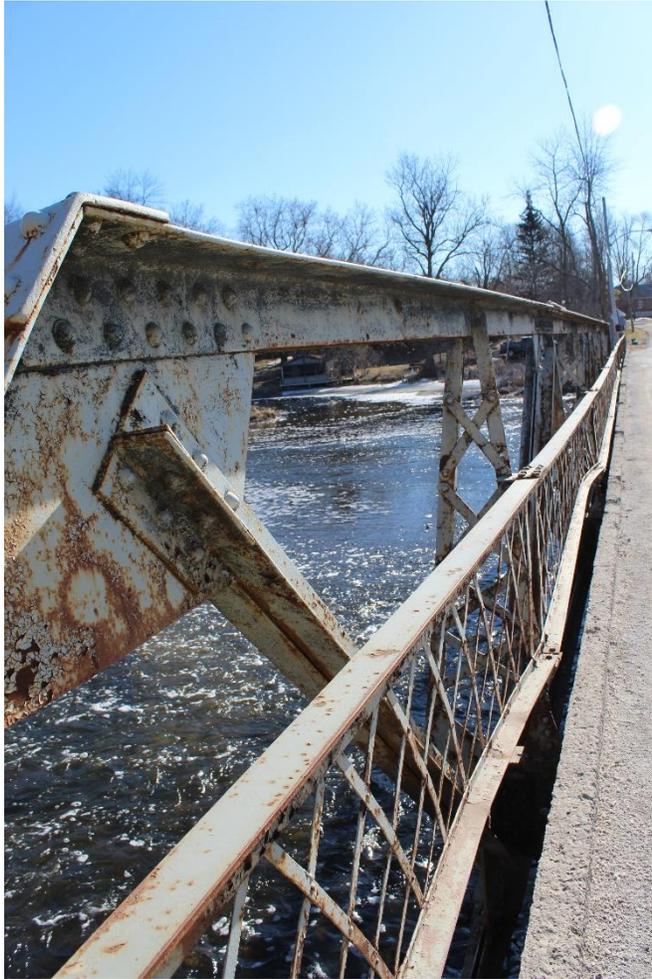


Plate 8: Oblique view of the northern truss and steel lattice railing from the west portal, looking northeast.



Plate 9:  
Westernmost  
panel on the south  
truss, looking  
north.



Plate 10: Riveted  
connection on the  
north portion of  
the west portal of  
the truss.



Plate 11: Oblique view of the south elevation, looking northeast.



Plate 12: Detail of the western steel expansion joint on the bridge.



Plate 13: View of top of the western pier with pointed upstream face.

**APPENDIX B: SITE PLAN OF THE SUBJECT BRIDGE**





**APPENDIX C: ENVIRONMENTAL ASSESSMENT OPTIONS**



**Welcome**

## **City of Kawartha Lakes**

# **Mill Pond Bridge #100018 Rehabilitation / Replacement Municipal Class Environmental Assessment**

## **Public Information Centre - Open House -**

February 4, 2019

Please sign in and take an information package and comment sheet.

Feel free to provide written input or comment using the comment sheets provided or by contacting the identified representatives of the City of Kawartha Lakes or its consultant for this project (D.M. Wills Associates Limited).

Representatives of the City of Kawartha Lakes and D.M. Wills Associates Limited are available to discuss questions or concerns you may have regarding this project.



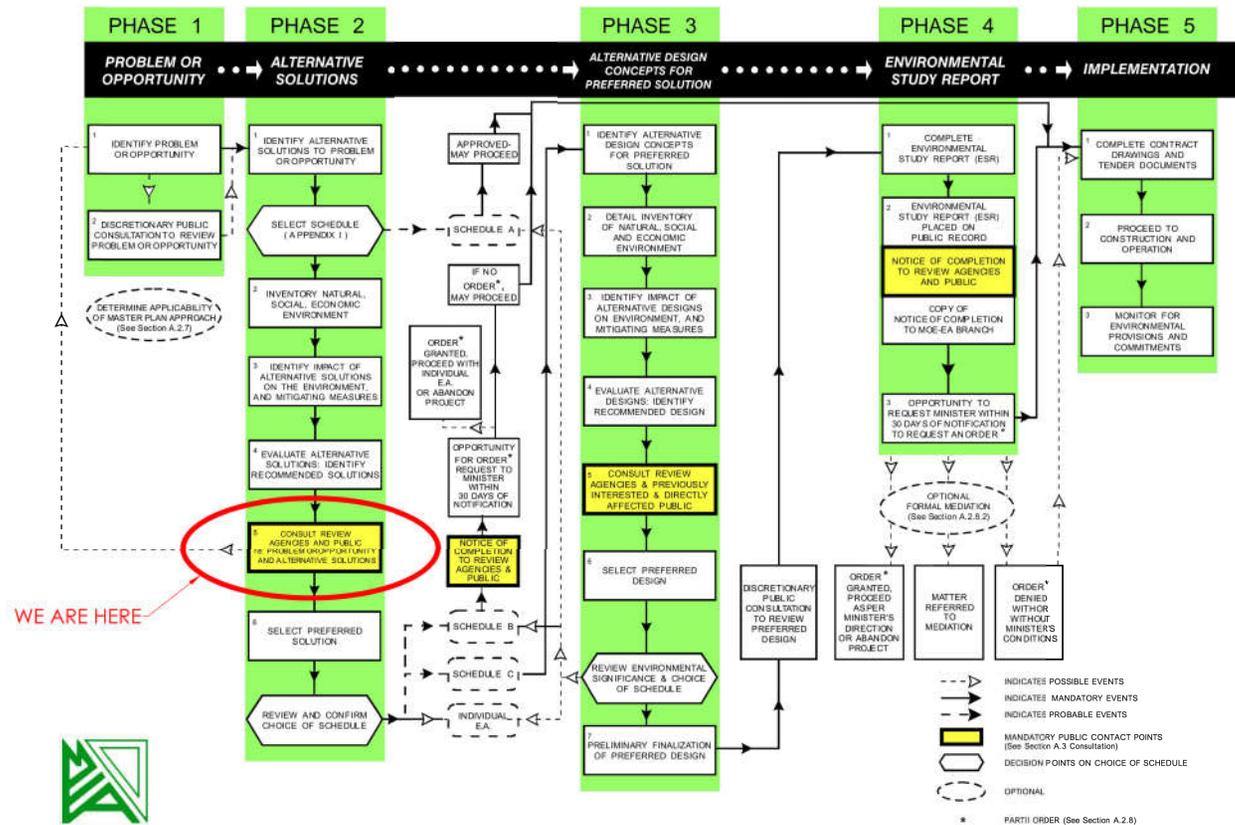
City of Kawartha Lakes  
Mill Pond Bridge #100018 - Municipal Class EA  
Public Information Centre



# Municipal Class Environmental Assessment Process

## EXHIBIT A.2 MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA



City of Kawartha Lakes  
 Mill Pond Bridge #100018 - Municipal Class EA  
 Public Information Centre



# Phase 1 - Problem or Opportunity

## Phase 1: Identification of Problem or Opportunity

### General Location Plan



### Problem / Opportunity Statement

- The study will identify and evaluate alternatives to rehabilitate the Mill Pond Bridge #100018 with respect to cultural heritage, archeological significance, and environmental impacts.

### Study Area

- The Study Area generally covers the Village of Omemees, ON, with specific attention being given to the area within the immediate vicinity of the bridge and the surrounding residential areas.
- The Study Area includes the central business and residential lands adjacent to the bridge, in addition to commercial lands within the Village of Omemees.
- Mill Pond Bridge #100018 conveys single lane traffic in the east-west direction over Pigeon River, which flows to the north from Mill Pond through the Mill Pond Dam and under Mill Pond Bridge #100018 before crossing King Street East (Highway 7).
- The Study Area meets the following criteria indicative of archaeological potential (MTCS Standards & Guidelines for Consultant Archaeologists, Section 1.3.1):
  - A. Water sources: primary, secondary, or past water source (Pigeon River);
  - B. Early historic transportation routes (King St., Mary St.); and
  - C. Proximity to early settlements (Village of Omemees).

### Purpose of Study

- Mill Pond Bridge #100018 has been identified through structural inspection to be in need of structural rehabilitation or replacement in the near future. The deterioration of the bridge brings into question its ability to perform its functional requirements without structural intervention in the form of rehabilitation. The purpose of this Study is to evaluate alternatives for the rehabilitation / replacement, or repurposing of the Mill Pond Bridge #100018 with respect to the cultural heritage of the bridge, archeological significance of the surrounding area, and potential environmental impacts of the respective alternatives. The findings of the Study will allow the City of Kawartha Lakes to proceed with preferred solution identified throughout the Environmental Assessment process.

### Public and Review Agency Consultation

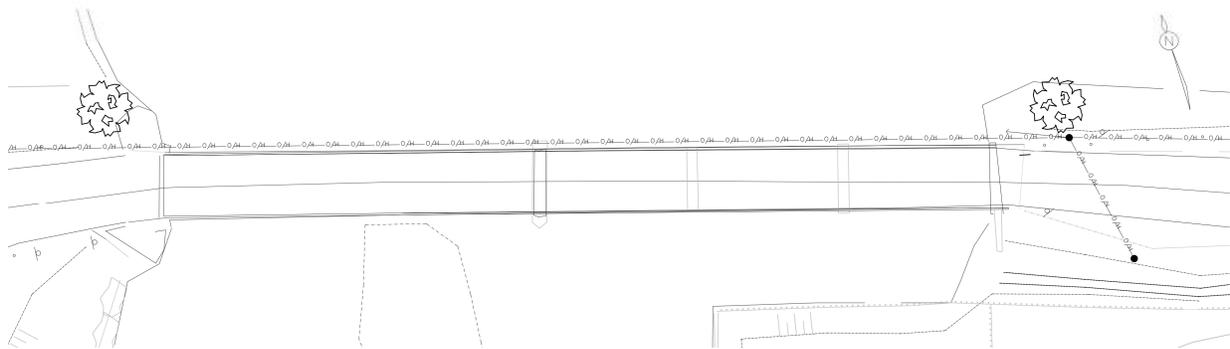
- A "Notice of Study Commencement" was previously published and sent to review agencies and identified stakeholders.
- This Public Information Centre (PIC) is intended to provide an opportunity for members of the public to review and discuss the project with the City of Kawartha Lakes and its representatives, provide input for consideration during the planning of this project, express any concerns with respect to proposed alternatives and discuss potential impacts associated with construction related to the project.



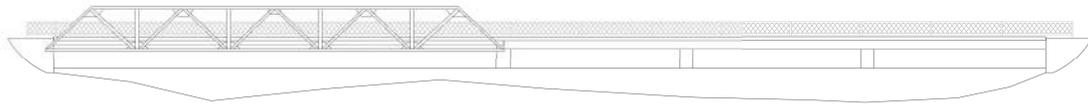
# EXISTING STRUCTURE



ROAD NETWORK



PLAN  
1150



UPSTREAM ELEVATION  
1125



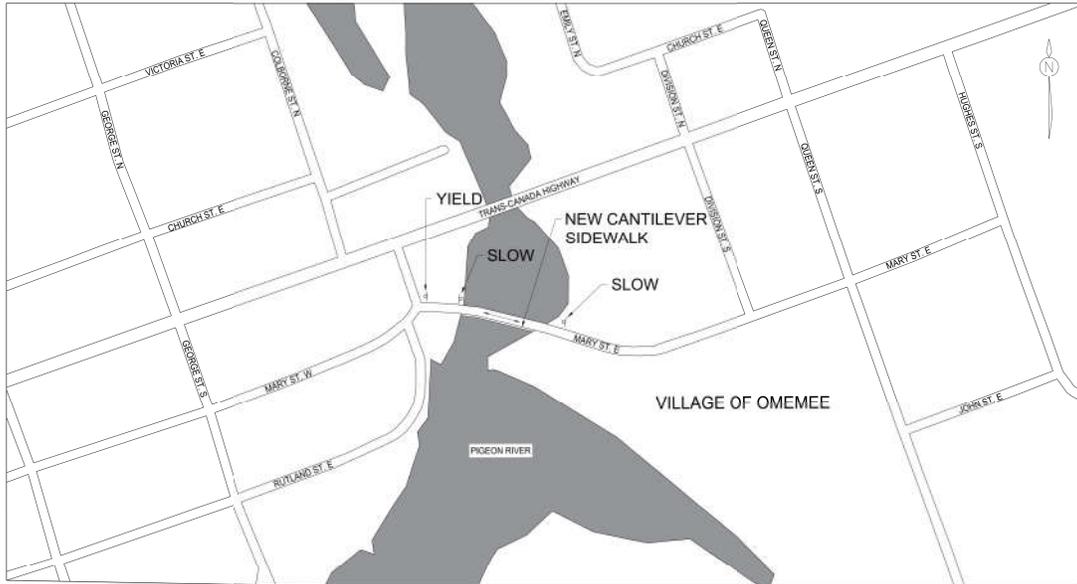
LOOKING WEST OVER DECK TOP



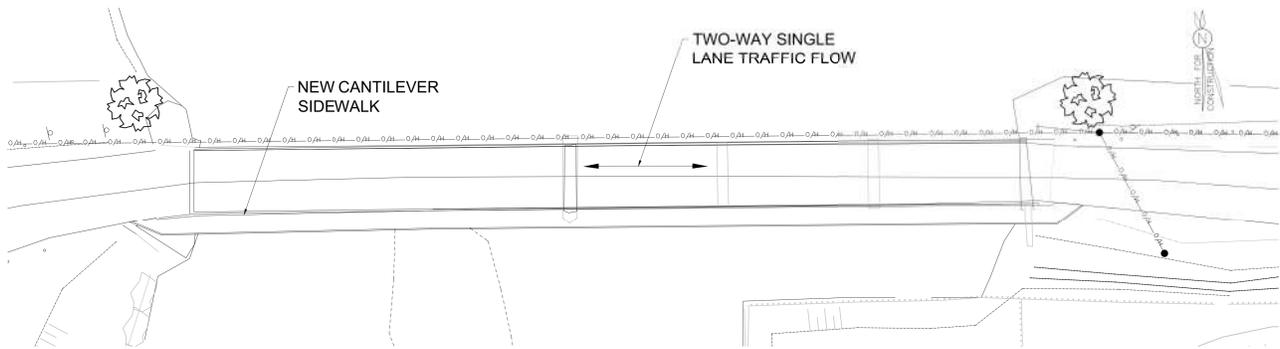
DOWNSTREAM ELEVATION LOOKING SOUTHEAST

# ALTERNATIVE 1

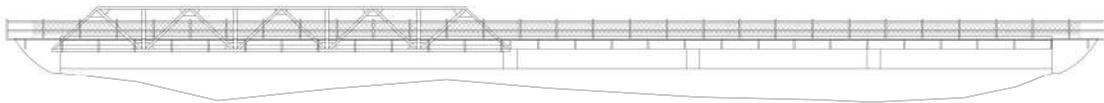
## TWO-WAY TRAFFIC FLOW



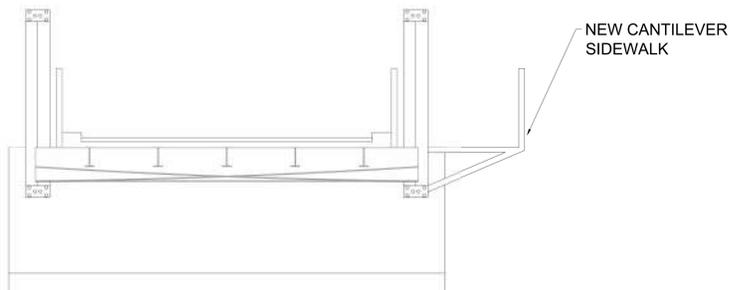
ROAD NETWORK



PLAN  
1:150



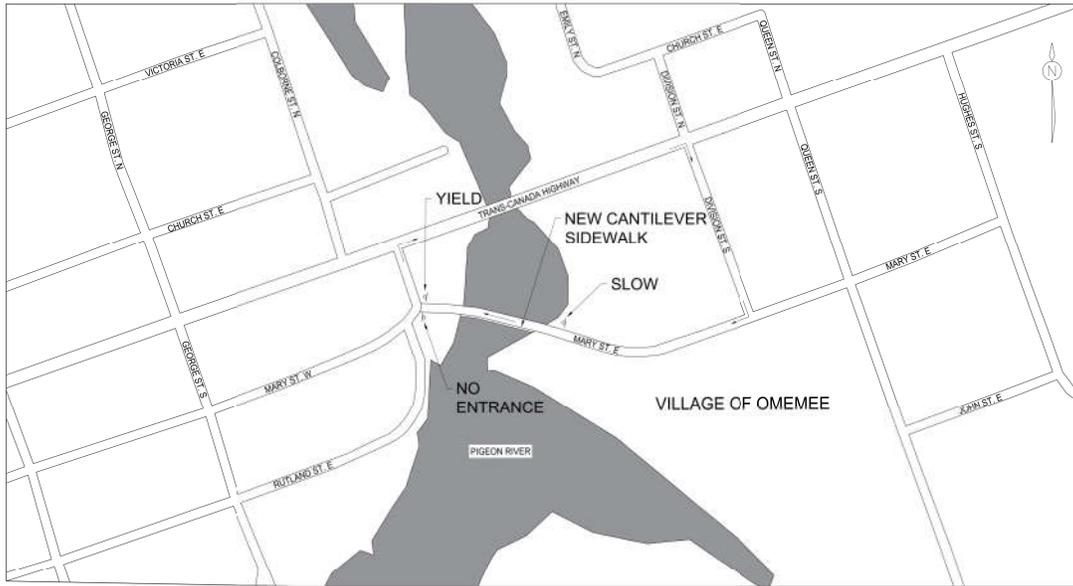
UPSTREAM ELEVATION  
1:125



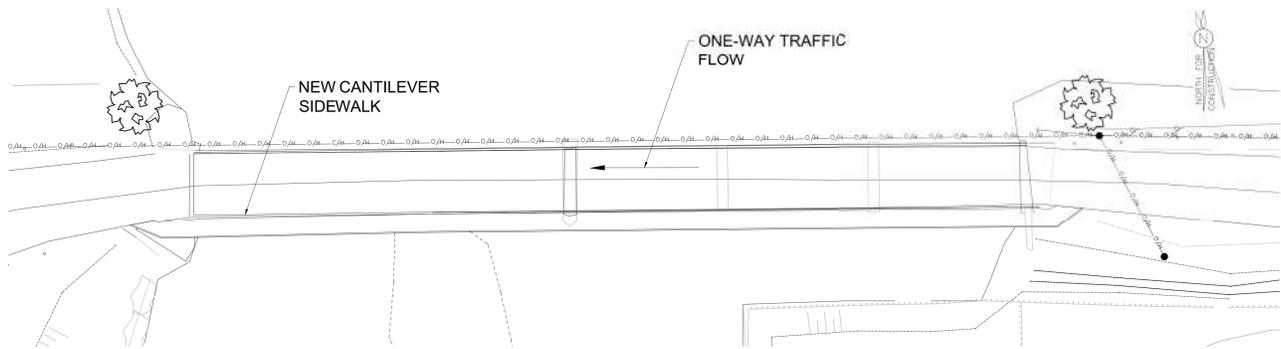
CROSS SECTION - ALTERNATIVE 1  
1:30

# ALTERNATIVE 2

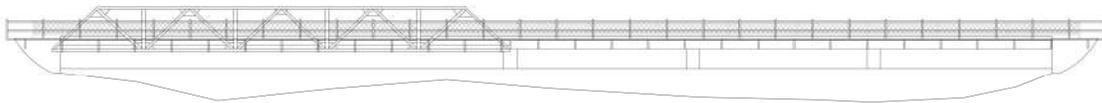
## ONE-WAY TRAFFIC FLOW



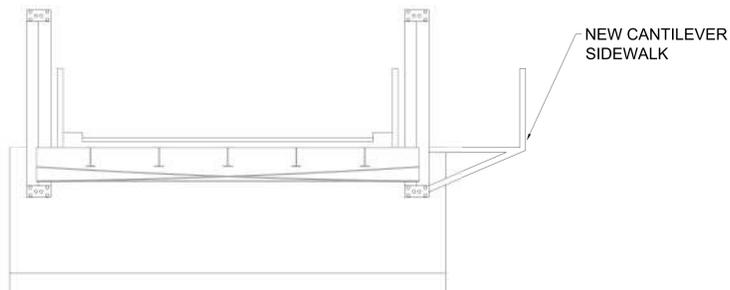
ROAD NETWORK



PLAN  
1:150

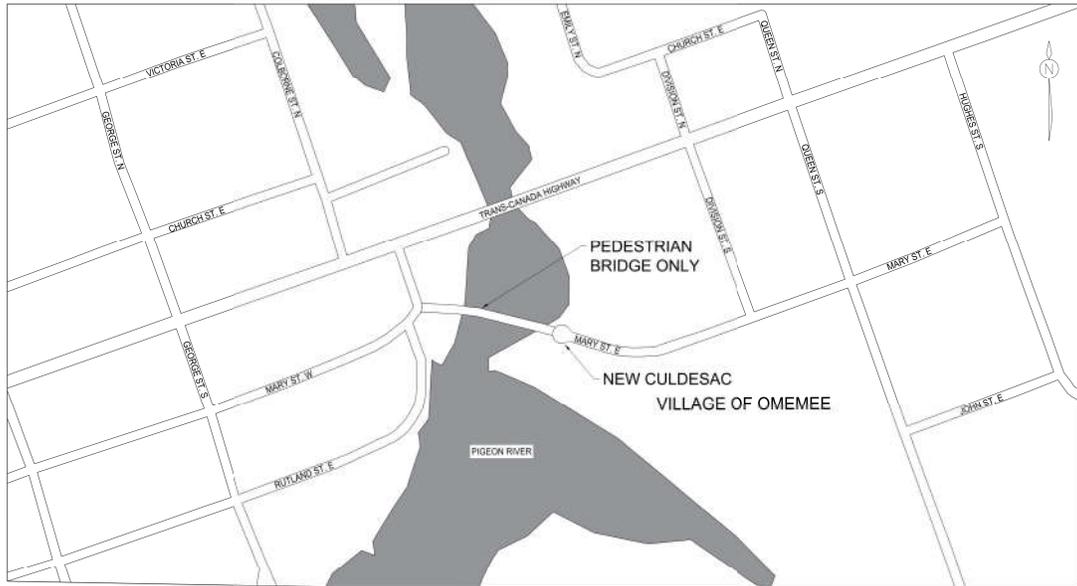


UPSTREAM ELEVATION  
1:125

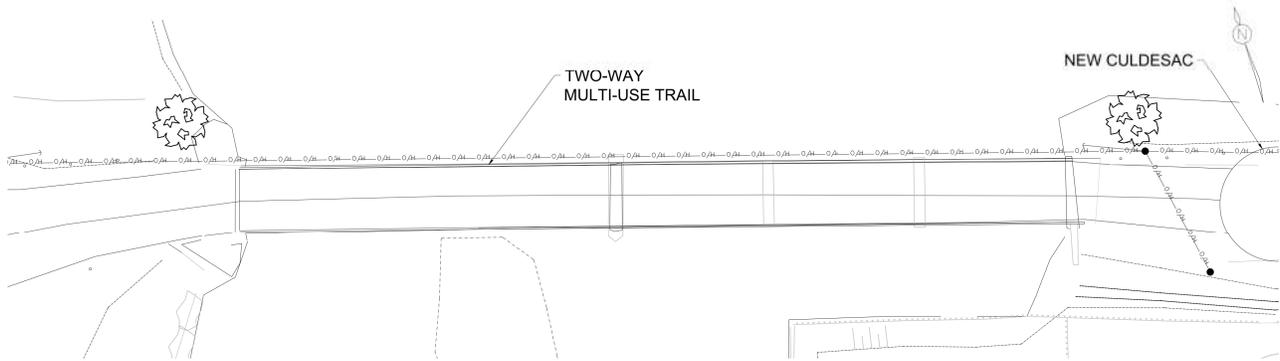


CROSS SECTION - ALTERNATIVE 2  
1:30

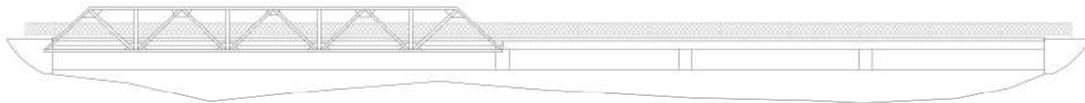
# ALTERNATIVE 3 PEDESTRIAN BRIDGE ONLY



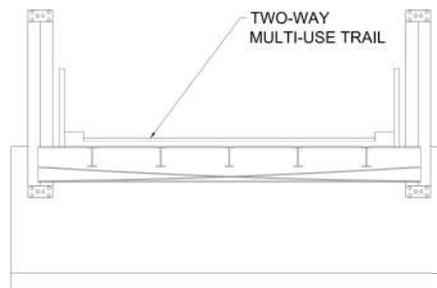
**ROAD NETWORK**



**PLAN  
1:150**

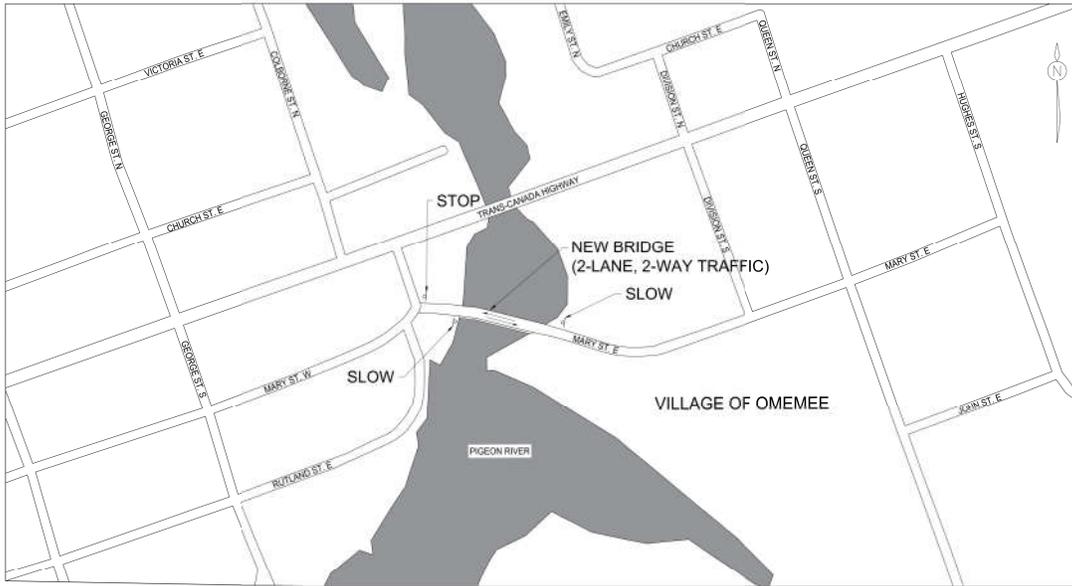


**UPSTREAM ELEVATION  
1:125**

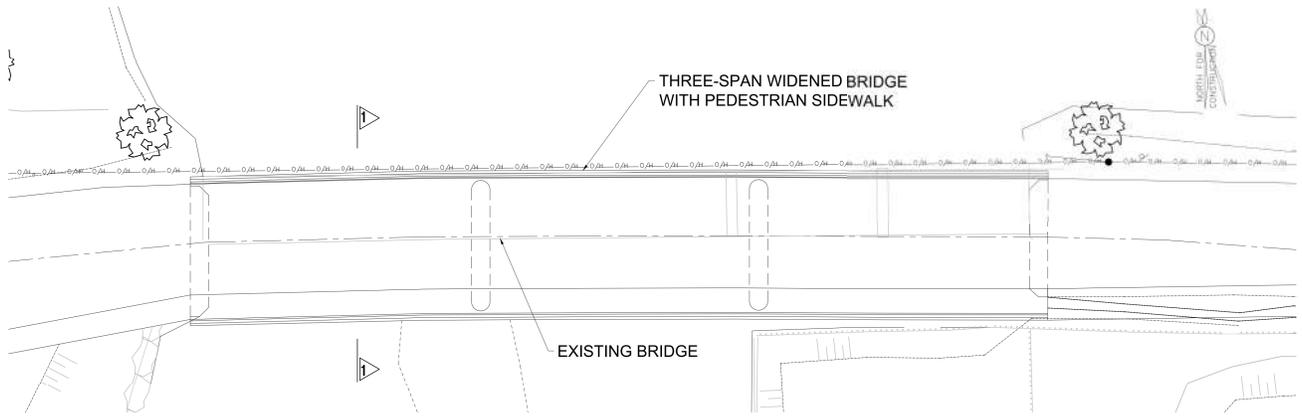


**CROSS SECTION - ALTERNATIVE 3  
1:30**

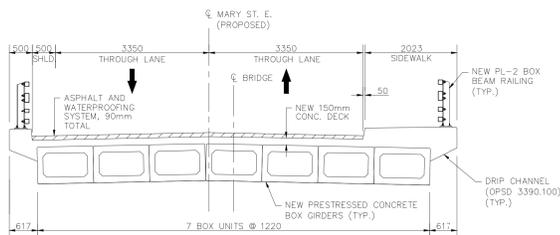
# ALTERNATIVE 4 BRIDGE WIDENING AND REPLACEMENT



**ROAD NETWORK**

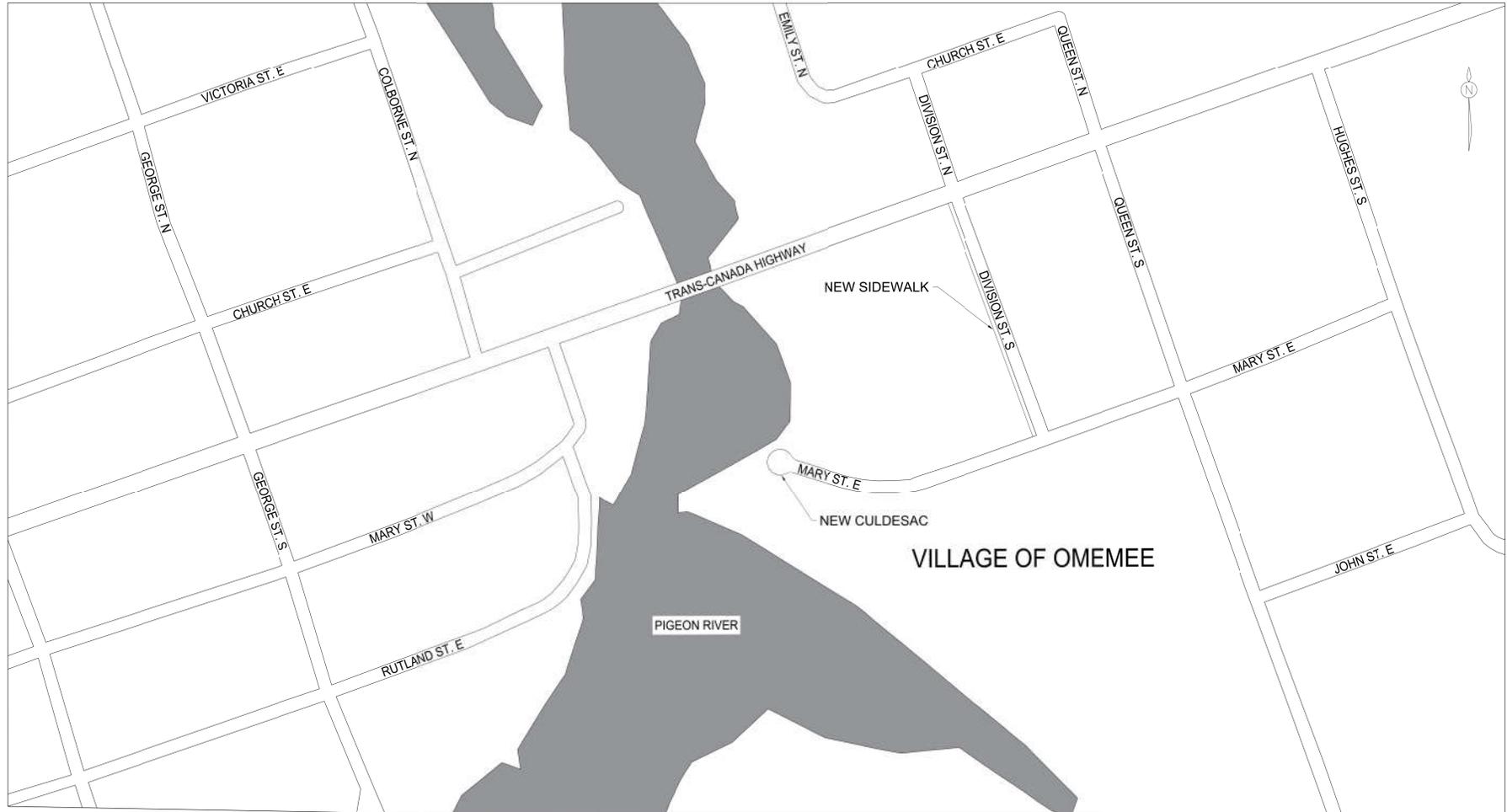


**PLAN  
1:150**



**CROSS SECTION - ALTERNATIVE 4  
1:50**

# ALTERNATIVE 5 BRIDGE REMOVAL



## Next Steps and Project Contacts

### Next Steps

- Review Public and Review Agency Input from the PIC.
- Identify Preferred Alternative.
- Identify Alternative Design Concepts for Preferred Solution.
- Detailed Inventory of Natural, Social and Economic Environment.
- Identify Impact of Alternative Designs on Environment and Mitigating Measures.
- Evaluate Alternative Designs: Identify Recommended Design.
- Prepare Draft Environmental Study Report
- Publish "Notice of Study Completion" and place Draft Environmental Study Report on Public Record.
- Review Public and Review Agency comments on Environmental Study Report.
- Detailed Design and Approvals.
- Construction.

### Public Input and Comment

- Feel free to provide written input or comment, for consideration by the project team, using the comment sheets provided or by contacting the identified representatives of the City of Kawartha Lakes or D.M. Wills Associates Limited.
- Information and comments received are collected under the authority of the Municipal Act and will be subject to the requirements of the Freedom of Information and Protection of Privacy Act.
- Should you have any questions or concerns at any time during the project, or would like additional information please contact the identified representatives of the City of Kawartha Lakes or D.M. Wills Associates Limited.

# THANK YOU FOR ATTENDING

#### City of Kawartha Lakes

Martin Sadowski, C.Tech.  
Senior Engineering Technician  
12 Peel Street, Lindsay, ON K9V 3L8  
Phone: 705-324-9411  
Email: msadowski@kawarthalakes.ca

#### D.M. Wills Associates Limited

David Bonsall, P.Eng.  
Manager, Structural Engineering  
150 Jameson Drive, Peterborough, ON K9J 0B9  
Phone: 705-742-2297 Ext. 240  
Email: dbonsall@dmwills.com



City of Kawartha Lakes  
Mill Pond Bridge #100018 - Municipal Class EA  
Public Information Centre

