VOLUME 1: CULTURAL HERITAGE EVALUATION REPORT

BLACK RIVER ROAD/VICTORIA FALLS BRIDGE (STRUCTURE ID 400019)
BLACK RIVER ROAD OVER THE BLACK RIVER

CITY OF KAWARTHA LAKES, ONTARIO

DRAFT REPORT

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

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ASI Providing Archaeological & Cultural Heritage Services
528 Bathurst Street Toronto, ONTARIO M5S 2P9
416-966-1069 F 416-966-9723 asiheritage.ca

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EXECUTIVE SUMMARY

ASI was contracted by D. M. Wills Associates Limited, on behalf of the City of Kawartha Lakes, to conduct a Cultural Heritage Evaluation Report and Heritage Impact Assessment for the Black River Road Bridge, also known locally as the Victoria Falls Bridge (Structure ID 400019). 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 subject bridge carries Black River Road over the Black River in the City of Kawartha Lakes, Ontario. This CHER is intended to evaluate the cultural heritage value of the subject bridge based on the evaluation criteria set under Ontario Regulation 9/06.

The Black River Road Bridge is a two-span bridge featuring a half-through Warren truss structure as the main span, crossing the river channel, with a deck girder approach span on the east bridging the rocks and slope to the east of the waterway. The bridge is oriented in an east-west direction and carries one lane of vehicular traffic over the Black River. Communications with the City of Kawartha Lakes indicated that the bridge was likely relocated to its currently location, most likely in 1937 based on the date stamp on the pier. Given the modular nature of truss bridges it is likely that only the main span was relocated. Once in place, the deck girder approach span along with the east abutment and pier were constructed. The subject bridge measures 21.7 metres in overall length with a width of 4 metres.

This report includes an evaluation of the cultural heritage value of the bridge as determined by the criteria in Ontario Regulation 9/06. This evaluation determined that the bridge has design and contextual value. Restrictions in place to limit the spread of COVID-19 prohibited access to all non-digitized archival material. As a result, it can not be determined at this time whether the bridge does or does not have historical or associative value.

Given the identified heritage value of the Black River Road Bridge, the following recommendations and mitigation measures should be considered and implemented:

1. Complete a HIA to identify alternatives and mitigation and monitoring commitments to avoid or lessen impacts on the heritage attributes of the structure, based on the Statement of Cultural Heritage Value.

2. This report should be submitted by the proponent to heritage staff at the City of Kawartha Lakes, the Ministry of Heritage, Sport, Tourism and Culture Industries, and any other heritage stakeholders that may have an interest in this project.

PROJECT PERSONNEL

Senior Project Manager:	Annie Veilleux, MA, CAHP Senior Cultural Heritage Specialist | Manager - Cultural Heritage Division
Project Coordinator	Katrina Thach, Hon. BA Archaeologist | Project Coordinator - Environmental Assessment Division
Project Manager:	Johanna Kelly, MSc Cultural Heritage Associate | Project Manager - Cultural Heritage Division
Historical Research:	Johanna Kelly
Field Review:	Johanna Kelly
Report Production:	Johanna Kelly
Graphics Production:	Andrew Clish, BES Senior Archaeologist - Planning Assessment Division
Report Reviewer(s):	John Sleath, MA Cultural Heritage Specialist | Project Manager - Cultural Heritage Division
	Lindsay Graves, MA CAHP Senior Cultural Heritage Specialist | Senior Project Manager - Cultural Heritage Division

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1.0 INTRODUCTION

ASI was contracted by D. M. Wills Associates Limited, on behalf of the City of Kawartha Lakes, to conduct a Cultural Heritage Evaluation Report (CHER) and Heritage Impact Assessment (HIA) for the Black River Road Bridge, also known locally as the Victoria Falls Bridge (Structure ID 400019). This report, Volume 1, provides the CHER. Volume 2 provides the HIA as a separate, stand-alone report. The subject bridge carries Black River Road over the Black River in the City of Kawartha Lakes, Ontario (Figure 1). This CHER is intended to evaluate the cultural heritage value of the subject bridge based on the evaluation criteria set under Ontario Regulation (O. Reg.) 9/06.

The Black River Road Bridge is a two-span bridge featuring a half-through Warren truss structure as the main span, crossing the river channel, with a deck girder approach span on the east bridging the rocks and slope to the east of the waterway. The bridge is oriented in an east-west direction and carries one lane of vehicular traffic over the Black River. Communications with the City of Kawartha Lakes indicated that the bridge was likely relocated to its currently location, most likely in 1937 based on the date stamp on the pier. Given the modular nature of truss bridges it is likely that only the main span was relocated. Once in place, the deck girder approach span along with the east abutment and pier were constructed.[1] The subject bridge measures 21.7 metres in overall length with a width of 4 metres.

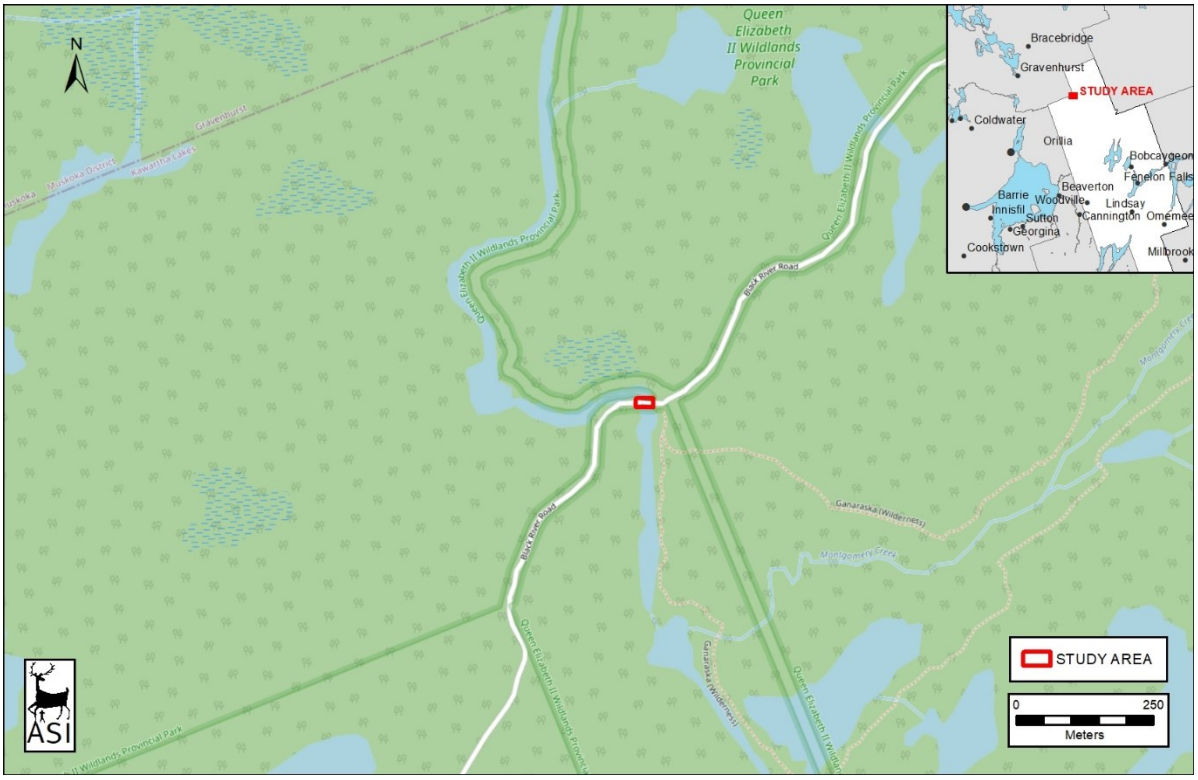

Figure 1: Location of the study area

[1] The information available for the bridge at the time of report writing could not confirm this statement. For the purposes of this assessment it is surmised that only the main truss structure was relocated in 1937.

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). Research was completed to investigate, document, and evaluate the cultural heritage value of the subject bridge. The CHER was conducted by Johanna Kelly, Cultural Heritage Associate, under the senior project management of Annie Veilleux, Senior Cultural Heritage Specialist, ASI.

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 detailed research outlining a historical overview of the design and construction of the bridge within the broader context of the surrounding township and bridge construction generally; 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 cultural heritage value or interest of the structure.

The information contained in this report is organized in such a way to inform the evaluation of the subject bridge against criteria outlined in *O. Reg 9/06*. These criteria are divided into three sections: Historical and Associative Value, Design and Physical Value, and Contextual Value.

1.1 Location and Study Area Description

A field review was undertaken by Johanna Kelly, Cultural Heritage Associate, ASI, on June 8, 2020 to conduct photographic documentation of the bridge crossing from the exiting right-of-way and to collect data relevant for completing a heritage evaluation of the structure. Photographic plates of the subject bridge and surrounding area are available in Appendix A.

The subject bridge carries one lane of vehicular traffic across the Black River in the City of Kawartha Lakes, Ontario (Figure 2). The structure is a half-through truss bridge with a deck girder approach span (Figure 3). The surrounding area consists of forest cover and the Black River waterway.

Figure 2: Aerial photo. The subject bridge is depicted in red

Base Map: Google

Figure 3: The subject bridge (ASI 2020)

The bridge is oriented in a roughly east-west direction and is surrounded by natural vegetation, bare rocks, and shallow soils. The Black River flows south beneath the bridge. The structure is owned and maintained by the City of Kawartha Lakes. Wooden posts line the approaches on both the east and west sides, although no barrier is currently attached. According to the 2017 inspection report, the bridge carries one lane of motor traffic with a total deck length of 21.7 metres (AUE Structural Inc. 2017). The deck has a travel width of 3 metres with an overall structure width of 4 metres. The OSIM Inspection Form indicates the posted speed limit is 80 km/hr and a current load limits of 3 tonnes (AUE Structural Inc. 2017).

The superstructure of Black River Road Bridge is a half-through (or pony) Warren truss structure with a deck girder approach span. The western, or main, span consists of a half-through Warren truss with riveted steel beams. The river channel flows beneath the main span. The eastern, or approach, span consists of a deck girder structure and connects the main span to the eastern bank, crossing rock and sloped land. Rolled steel I-beam stringers that extend the length of both spans, stamped with 'Jones & Laughlin', supporting a timber deck. Steel floor beams support the western truss span only. A timber deck surface extends the length of the bridge. The timber deck surface is protected further by longitudinal steel plates anchored to the wood deck at the wheel track locations. The gravel wearing surface of the road extends onto the bridge and an accumulation of gravel and dirt has resulted in grasses and vegetation growing along the curbs. A double steel pipe railing system spans the entire length of the bridge, providing the only barrier on the north and south sides on the eastern deck girder span. The substructure consists of stone abutments and a single concrete and stone pier. Stone abutments support the bridge at the east and west sides; natural rock is utilized on the west side and a dry fit stacked stone wall atop the natural rock outcrop forms the abutment on the east side. The single pier is constructed of stone and concrete and consists of a random-coursed stone footing with concrete mortar, two square cast-in-place concrete support columns, and a later stone and concrete addition to the centre, likely for additional reinforcement. The stone footing was likely originally parged with concrete, as remnants of this parging are evident on the top and the west side. Two square columns support the eastern most floor beam of the western truss span. The south column has '1937' stamped into the top, visible when looking down towards the pier from the bridge deck. The stone and concrete addition shows visible striations where the rough timber formwork was used during construction.

1.2 Policy Framework

The authority to request this CHER arises from the *Ontario Heritage Act* (1990), *Environmental Assessment Act* (1990), the City of Kawartha Lakes *Official Plan* (City of Kawartha Lakes 2012), and the City of Kawartha Lakes *Heritage Master Plan* (Richard Fortin Associates 2012).

The following resources were among those reviewed in the preparation of this CHER:

- *Environmental Assessment Act* (Ministry of the Environment 1990)
    - *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (MHSTCI 1992)
    - *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (MHSTCI 1980)
    - *Municipal Heritage Bridges: Cultural, Heritage and Archaeological Resources Assessment Checklist* (Municipal Engineers Association 2014)

- *Ontario Heritage Act* (MHSTCI 1990) and the following documents prepared by the Ministry of Tourism and Culture (MTC), now administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI):
    - The *Ontario Heritage Toolkit* (MHSTCI 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 *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (MHSTCI 2016)
- Ministry of Transportation's (MTO) *Ontario Heritage Bridge Guidelines for Provincially Owned Bridges* (2008)

1.3 Cultural Heritage Evaluation Process

The purpose of the CHER is to examine a property as whole, its relationship to surrounding landscapes, and its individual elements. Conducting archival 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 MHSTCI 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 *Ontario Heritage Toolkit* (Ministry of Tourism, Culture and Sport 2006, now administered by the Ministry of Heritage, Sport, Tourism and Culture Industries). 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) (Ministry of Culture and Ministry of Transportation, Ontario (MTO) 2008) and the *Ontario Heritage Bridge Program* (Ministry of Culture and Communications 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.

Additionally, during the site visit and as part of the evaluation process, attention is paid to surrounding cultural heritage resources that are situated in close proximity to the bridge. The identification of cultural heritage resources within the study area is based on the following definitions and concepts:

> *Built heritage resources* mean one or more buildings, structures, monuments, installations or remains associated with architectural, cultural, social, political, economic, or military history, identified as being important to a community, or reflective of contextual values.
>
> *Cultural heritage landscapes* mean a defined geographical area of heritage significance that has been modified by human activities. Such an area is valued by a community and is of significance to the understanding of the history of a people or place.

The term "significant" in the context of cultural heritage and archaeology resources refers to those that are valued for the important contribution they make to our understanding of the history of a place, an event, or a people.

Criteria for determining significance for the resources are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used. While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation.

1.4 Project Consultation

The following organizations, websites, online heritage documents, and online heritage mapping tools were consulted to confirm the existing or potential cultural heritage value of the subject bridge and to request additional information generally:[2]

[2] Reviewed 3 June 2020

- City of Kawartha Lakes Heritage Register (2020);
- The *Ontario Heritage Act Register* (Ontario Heritage Trust n.d.);
- The inventory of Ontario Heritage Trust easements (Ontario Heritage Trust n.d.);
- The Ontario Heritage Trust's *Ontario Heritage Plaque Database* (Ontario Heritage Trust n.d.);
- *Ontario's Historical Plaques* website (Brown 2019);
- Database of known cemeteries/burial sites curated by the Ontario Genealogical Society (Ontario Genealogical Society n.d.);
- Parks Canada's *Canada's Historic Places* website (Parks Canada n.d.);
- Parks Canada's *Directory of Federal Heritage Designations* (Parks Canada n.d.);
- Canadian Heritage River System (Canadian Heritage Rivers Board and Technical Planning Committee n.d.); and
- United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites (UNESCO World Heritage Centre n.d.).

The following stakeholders were contacted with inquiries regarding the heritage status and for information concerning the Black River Road Bridge and any additional adjacent cultural heritage resources (Table 1).

Table 1: Results of Stakeholder Consultation

Contact	Organization	Date(s) of Communications	Description of Information Received
Emily Turner Economic Development Officer, Heritage Planning Economic Development	City of Kawartha Lakes	10, 11, 22 June 2020	Confirmed that the bridge is of interest, particularly because of the dry stone abutment. Suggested that it is generally understood that the bridge was moved from somewhere else but acknowledged that there is not any specific documentation that evidences this.
Angela Fornelli Manager of Corporate Records	City of Kawartha Lakes	11 and 22 June 2020	Confirmed that there are no records relating to the bridge at the City's Records Centre.
Karla Barboza, (A) Team Lead, Heritage	Ministry of Heritage, Sport, Tourism and Culture Industries	10 and 15 June 2020[3]	Confirmed that the bridge and adjacent properties are not designated by the Minister or considered to be provincial heritage properties.
Kevin DeMille, Natural Heritage Coordinator	Ontario Heritage Trust	10 and 12 June 2020	Confirmed that the OHT does not have any conservation easements or Trust-owned properties adjacent to the bridge.
Garin Kirwan, Group Lead	Archives of Ontario	5 and 8 June 2020	A response indicated that staff were unable to conduct research on the bridge as requested due to restrictions in place resulting from the Provincial State of Emergency

[3] A follow up email was sent to the Ministry of Heritage, Sport, Tourism and Culture Industries on 30 June 2020 requesting guidance on how to address significant research limitations resulting from archival material being largely inaccessible. A response received 14 July 2020 indicated that where significant research limitations exist further research may be required to fulfill the requirements for a Statement of Cultural Heritage Value.

Table 1: Results of Stakeholder Consultation

Contact	Organization	Date(s) of Communications	Description of Information Received
Online request form	City of Kawartha Lakes Archives	5 June 2020	A response was still outstanding at the time of report submission
Rick McNamee	Ramara-Carden-Dalton Historical Group	2, 4, and 6 July 2020	A response provided contextual information about the development of Black River Road and early logging activities in the township

2.0 HISTORICAL AND ASSOCIATIVE RESEARCH

A review of available primary and secondary source material was undertaken to produce a historical overview of the study area, including a general description of Indigenous and Euro-Canadian settlement and land-use. This section provides the results of this research.

Research for this report was conducted in June 2020, during the COVID-19 global pandemic. Research limitations resulted from mitigation measures recommended by federal, provincial, and local governments. Of particular impact were the restrictions resulting from the Provincial State of Emergency declared initially on 17 March 2020, and subsequently extended, most recently on 2 June 2020 (Government of Ontario 2020a; Government of Ontario 2020b) that made access to all non-digitized archival material prohibited.

The Black River Road Bridge was constructed in c.1924 and is a half-through Warren truss structure with a deck girder approach span on the east that carries Black River Road over the Black River in, what is presently, the City of Kawartha Lakes, Ontario. 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*.

2.1 Overview of Indigenous Land Use

Southern Ontario has a cultural history that begins approximately 11,000 years ago. The land now encompassed by the City of Kawartha Lakes has a cultural history which begins approximately 10,000 years ago and continues to the present. Table 2 provides a general summary of the history of Indigenous land use and settlement of the area.[4]

Table 2: Outline of Southern Ontario Indigenous History and Lifeways

Period	Archaeological/ Material Culture	Date Range	Lifeways/ Attributes
PALEO-INDIAN PERIOD			
Early	Gainey, Barnes, Crowfield	9000-8500 BCE	Big game hunters
Late	Holcombe, Hi-Lo, lanceolate	8500-7500 BCE	Small nomadic groups
ARCHAIC			

[4] While many types of information can inform the precontact settlement of the City of Kawartha Lakes, this summary table provides information drawn from archaeological research conducted in southern Ontario over the last century. As such, the terminology used in this review related to standard archaeological terminology for the province rather than relating to specific historical events within the region. The chronological ordering of this summary is made with respect to two temporal referents: BCE – before Common Era and CE – Common Era.

Period	Archaeological/ Material Culture	Date Range	Lifeways/ Attributes
Early	Nettling, Bifurcate-base	7800-6000 BCE	Nomadic hunters and gatherers
Middle	Kirk, Stanley, Brewerton, Laurentian	6000-2000 BCE	Transition to territorial settlements
Late	Lamoka, Genesee, Crawford Knoll, Innes	2500-500 BCE	Polished/ground stone tools (small stemmed)
WOODLAND PERIOD			
Early	Meadowood	800-400 BCE	Introduction of pottery
Middle	Point Peninsula, Saugeen	400 BCE-CE 800	Incipient horticulture
Late	Algonkian, Iroquoian	CE 800-1300	Transition to village life and agriculture
	Algonkian, Iroquoian	CE 1300-1400	Establishment of large palisaded villages
	Algonkian, Iroquoian	CE 1400-1600	Tribal differentiation and warfare
POST-CONTACT PERIOD			
Early	Huron, Neutral, Petun, Odawa, Ojibwa	CE 1600-1650	Tribal displacements
Late	Six Nations Iroquois, Ojibwa	CE 1650-1800's	
	Euro-Canadian	CE 1800-present	European settlement

The land in which the subject bridge is located was included in Treaty No. 20, the Williams Treaties. 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 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 Chippewas and the Crown, which opened up colonization for settlers (Crown-Indigenous Relations and Northern Affairs 2016). The Williams Treaties First Nations are comprised of 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).

2.2 Township and Settlement History

Historically, the subject bridge is located in the former Dalton Township, Victoria County in part of Lot 1, Concession 13.

2.2.1 Victoria County

The first settlers in Victoria County were Protestant Irishmen in the southern portion once land opened up for settlement in 1821. The first wave of settlement brought 630 immigrants. The northern townships, including Dalton, remained unoccupied for years. The County was named after Queen Victoria in 1851. Once settlement expanded into the northern township the lumbering industry resulted in the removal of most of the vast pine forests. The primeval forests that covered northern Victoria County were stripped, resulting in soil unfit for farming. Reforestation was not undertaken until the 1920s (Mika and Mika 1983; Rayburn 1997). The chain of lakes that drain the region were named “Kawartha”, in 1895, from the Indigenous word which means “bright waters and happy land” (Mika and Mika 1983:580). The Kawartha Lakes have drawn recreational visitors since the nineteenth century. Both

Susanna Moodie and Catherine Parr Traill described picnicking among the County's lakes and rivers (The Canadian Encyclopedia 2015). Today the area is a popular camping and cottage destination. with the historical Trent-Severn Waterway running through the area. In 2001 the townships of former Victoria County amalgamated, creating the City of Kawartha Lakes, named so after the lakes of the region (The Canadian Encyclopedia 2015; Ministry of Municipal Affairs and Housing 2018).

2.2.2 Former Dalton Township

Established in 1860, the Township was named for Dr. John Dalton, an English scientist who contributed to the foundations of atomic theory. The land within Dalton Township was rugged and swampy and not suited for agriculture. Early industry was primarily logging related. The earliest settlers in the Township were predominantly Scottish and Irish Presbyterians, with the Kett and Stein families pioneering settlement in the northern portion. (Mika and Mika 1977).

Ragged Rapids, once a logging hamlet located to the west of the study area, once featured a post office and a dance hall. Early families in the area included the Coopers, Hunters, Camicks, Steins, and Quinns (Ontario Abandoned Places 2009).

Black River Road was constructed in 1858 to carry settlers from Lindsay north to Uphill. The road was constructed through to the north end of Lanford Township. The primary beneficiary of the route was the Longford Lumber Company [R. McNamee, Ramara-Carden-Dalton Historical Group, email communication 4 July 2020].

2.2.3 Queen Elizabeth II Wildlands Provincial Park

Queen Elizabeth II Wildlands Provincial Park was established on July 16, 1999 as part of the Ontario Government's *Living Legacy Land Use Strategy*. The strategy provided a guide to managing Crown lands in central and parts of northern Ontario. A key part of this plan was the establishment 378 new protected areas, including the Queen Elizabeth II Wildlands. The park was formerly known as Dalton Digby Wildlands Provincial Park, for two of the five townships the park is located in, and was formally regulated on May 8, 2002. Shortly after the park was renamed Queen Elizabeth II Wildlands Provincial Park to commemorate her Majesty's Golden Jubilee visit to Ontario, officially amended under O. Reg. 238/03 on June 28, 2003. The park is the second largest provincial park south of Algonquin Provincial Park, second to the Kawartha Highlands Signature Site Provincial Park (Government of Ontario 2001; Ontario Parks 2006).

2.2.4 Review of Nineteenth and Twentieth-Century Mapping

Historically, the subject bridge is located in former Dalton Township, Victoria County in part of Lot 1, Concession 13. The subject bridge is located within in an undeveloped context over the Black River, a tributary of the Trent-Severn.

The 1881 *Illustrated Historical Atlas of the County of Victoria* (Belden 1881), was examined to determine the presence of historic features within the study area during the nineteenth century. Unfortunately, the map shows no features for the township (Figure 4).

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases. For instance, they were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can be often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

In addition to nineteenth-century mapping, historical topographic mapping and aerial photographs from the twentieth century are typically examined. This report presents maps from 1957, 1994, and 2015 (Figure 6 to Figure 7).[5]

Mid twentieth-century mapping shows that Black River Road terminated at the subject bridge. The roadway extends beyond the bridge by 1994. Recent park mapping shows the subject bridge (labelled Victoria Bridge) as well as the falls. Black River Road is illustrated as a "loose or stabilized surface" road. The area is noted as a backcountry access point, labelled as B1.

[5] Access to the archives was not possible due to the restrictions in place caused by the COVID-19 pandemic, making review of all non-digitized mapping impossible. Both the National Air Photo Library and the Ontario Archives collection of Ministry of Natural Resources photos were unavailable during the pandemic. As a result, the mapping presented in this report represents only what was digitally available for review.

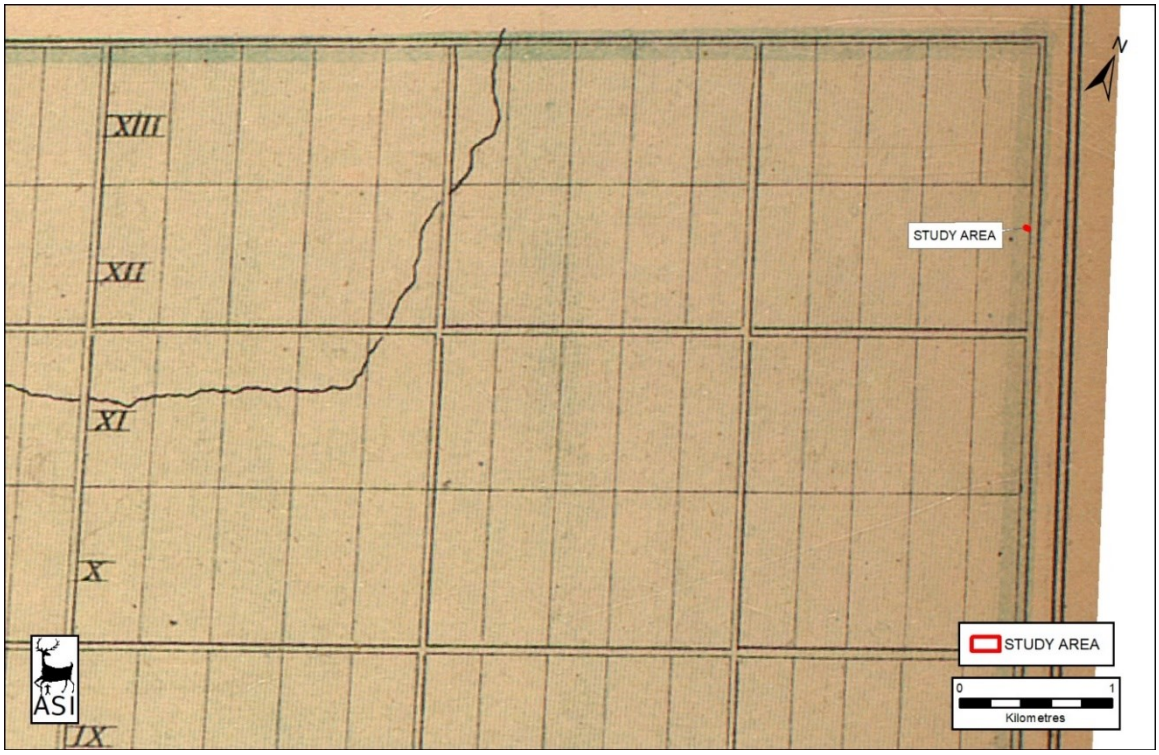

Figure 4: The study area overlaid on the 1881 Historical Atlas of the County of Victoria
Base Map: (Belden 1881)

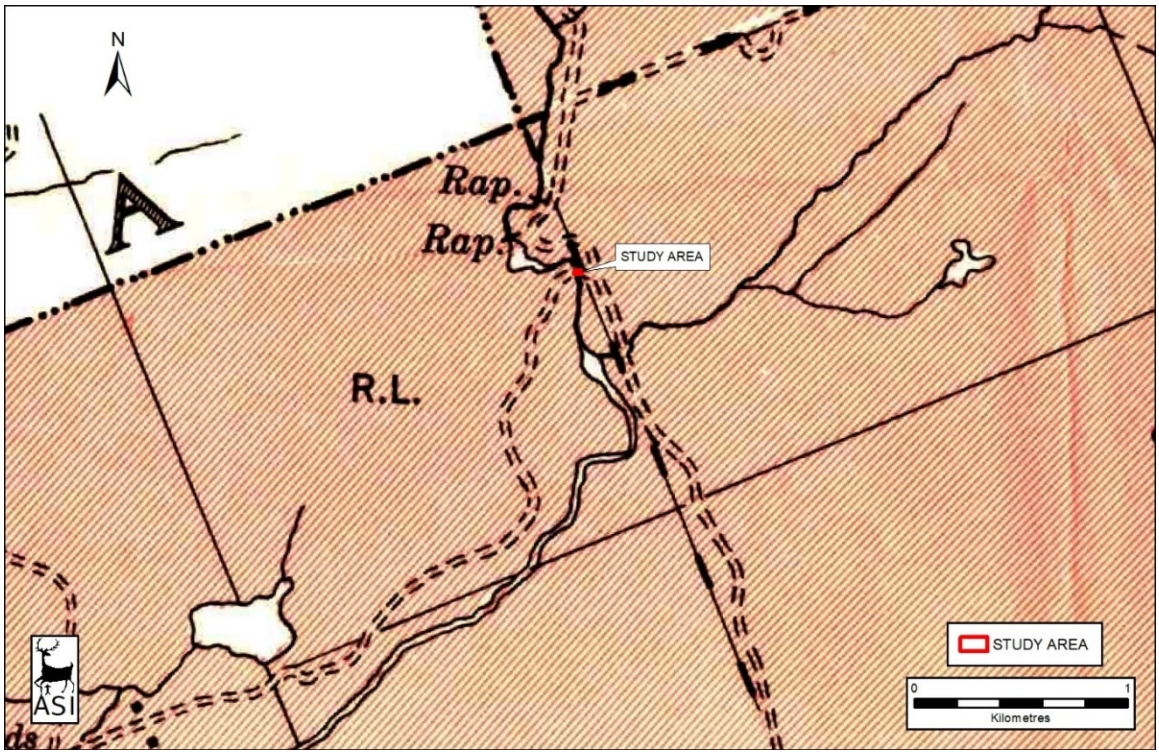

Figure 5: The study area overlaid on the 1957 soil survey map of the area
Base Map: (Canada Department of Agriculture 1957)

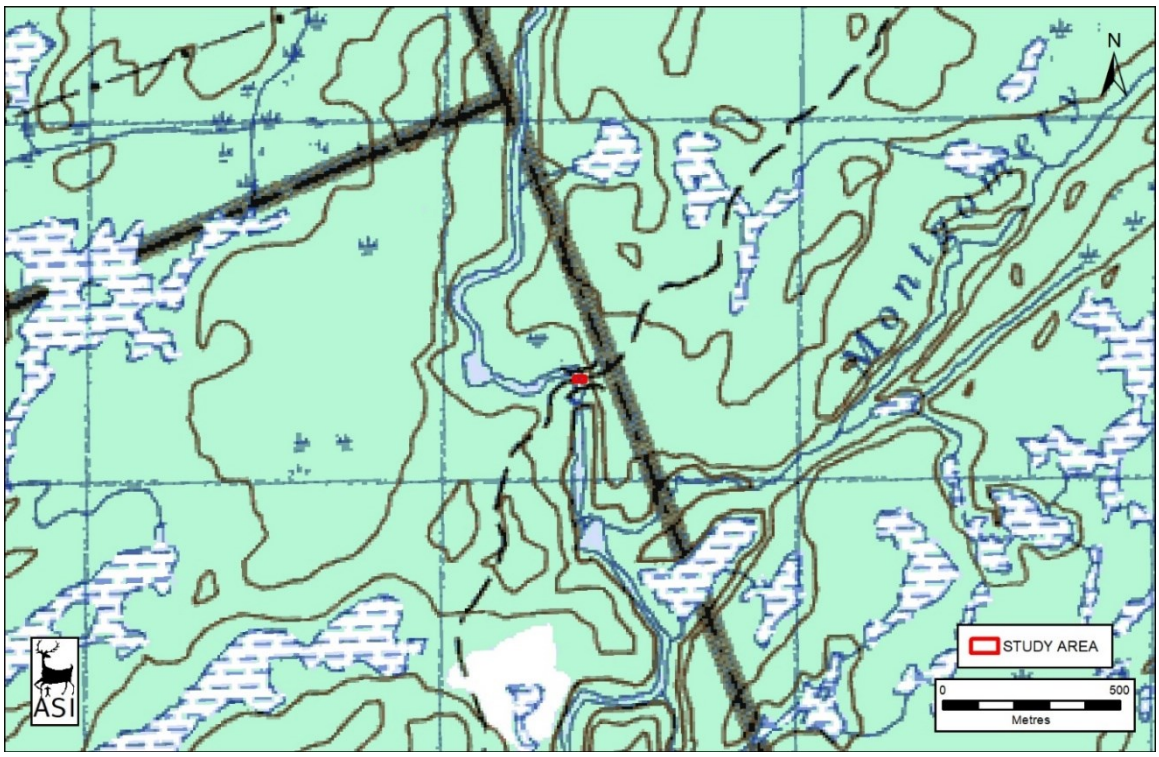

Figure 6: The study area overlaid on the 1994 NTS map of the area

Base Map: (Department of Energy, Mines and Resources 1994)

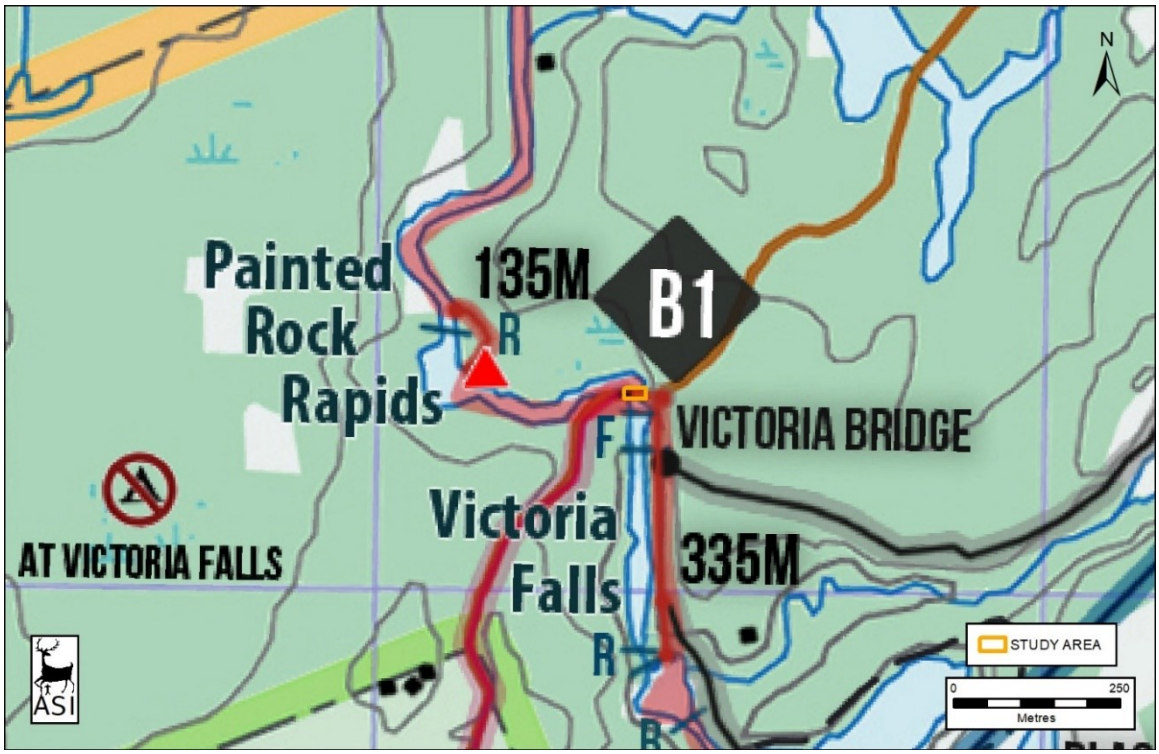

Figure 7: The study area overlaid on the 2015 topographic map of the area

Base Map: (Jennings 2015)

2.3 Transportation History

2.3.1 Previous Bridges

The extant bridge is the only structure evidenced to have existed at this crossing.[6]

2.3.2 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).

Factors impacting bridge design included increasing road allowances and clearance requirements, heavier traffic, higher speeds, safety standards, and most importantly, cost limitations (Cuming 1983). 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 (Region of Waterloo: Planning, Housing, and Community Services (PHCS)) 2007). 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). The rigid frame, hollow concrete box beam and post-tensioned voided slab are some of the bridge types to develop during this period.

2.3.3 Truss Bridge Construction

Steel truss and steel girder structures were very common by 1900, and 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. 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).

The Warren truss design has been widely used and adapted in North America, particularly in the twentieth century. The design was patented by James Warren and Theobald Willoughby Monsani in 1848 and consists of a "W" pattern of alternately placed members in tension and compression (Cleary

[6] Access to the archives was not possible due to the restrictions in place caused by the COVID-19 pandemic, however, a review of early twentieth century mapping would show whether a bridge crossing existed prior to 1937 at this location.

2007). The addition of a vertical member intersecting the horizontal members was a common modification to the design. The Warren truss type became the design of choice for steel rail and road bridges in the mid-twentieth century, with Warren deck trusses common for multiple span structures (Cleary 2007).

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.

2.4 Relevant People and Organizations

The bridge engineer responsible for the design and construction of the subject bridge is unknown.[7]

3.0 DESIGN AND PHYSICAL VALUE RESEARCH

Original structural drawings, rehabilitation drawings, and archival photographs were unavailable for review. The 2017 OSIM report (AUE Structural Inc. 2017) of the subject bridge was reviewed as part of this assessment. A field review was undertaken by Johanna Kelly, Cultural Heritage Associate, ASI, on 10 June 2020 to conduct photographic documentation of the bridge crossing and to collect data relevant for completing a heritage evaluation of the structure. The following description of the construction, including the dates of the interventions, and existing conditions is based on a combination of the results of the field review and historical background research on the subject bridge. The City of Kawartha Lakes was contacted by D. M. Wills and indicated that there are no existing original structural or rehabilitation drawings for the subject bridge available (Z. Staples, D.M. Wills, email communication, 8 June 2020).

3.1 Construction and Integrity of the Black River Road Bridge

Original bridge drawings were requested but unavailable. The 2017 OSIM report and the municipal inventory both note that the bridge was constructed in 1924. Communications with the City of Kawartha Lakes indicate that the bridge was likely relocated to its present location at some point (E. Turner, City of Kawartha Lakes, email communication, 10 June 2020). Given the modular nature of truss bridges it is most likely that only the main span, the half-through Warren truss, was moved. The deck girder approach span was likely constructed in place to connect the main truss span to the eastern slope. It is surmised that the dry laid stone abutment (the east abutment) and the stone and concrete pier were constructed at the time the bridge was moved and the approach span was constructed. A date stamp on the top of the southmost column of the pier indicates the possible date of relocation, 1937. It is possible

[7] Access to the archives was not possible due to the restrictions in place caused by the COVID-19 pandemic, however, it is likely the bridge was commissioned by the municipality and so council minutes from 1924 would likely provide some insight into discussions surrounding construction of the bridge and who was hired to do the work. Additionally, council minutes from 1936 or 1937 would similarly provide information on the decision to relocate the bridge.

that the bridge featured cantilevered sidewalks in its original location, evidenced by the raw edges of the floor beams, below the outriggers, which appear to have been cut off (Holth 2020).[8]

The use of stone in the substructure is representative of bridge construction techniques prior to the rise of concrete in the mid-twentieth century. Considering the remote location of the bridge and rocky nature of the environment it is likely that local stone was used for the construction of the central pier and east abutment. Utilizing local stone as well as existing natural stone, for the west abutment, were prudent decisions when constructing the substructure of the bridge.

No rehabilitation drawings were available for review. A visual inspection of the bridge indicates that it is unlikely that any major rehabilitation has occurred. Original riveted connections are intact, all exposed steel has consistent corrosion, and the wooden deck appears to be unaltered.

The OSIM Inspection Form recommended repairs and rehabilitation for the approaches, barriers, coatings, and abutments to extend the useful life of the structure. The following deficiencies were documented in 2017 (AUE Structural Inc. 2017):

- Dry stone abutment walls with concrete top – deterioration of concrete at corners, light spall under the deck at northeast and southeast bearings, efflorescence stains;
- Load posting signs – sign at south is vandalized;
- Gravel wearing surface – light to severe wheel track rutting (re-grade approaches);
- Steel posts – existing barrier is substandard and should be replaced with a code compliant barrier, two posts are severely bent, light corrosion throughout;
- Double pipe steel rail - existing barrier is substandard and should be replaced with a code compliant barrier, severe sections are bent due to impact, light corrosion throughout;
- Steel floor beam; light corrosion throughout;
- Steel stringer – light corrosion throughout;
- Steel pipe bracing – light corrosion throughout;
- Structural steel coating – coating loss noted throughout structural steel members;
- Timber deck – longitudinal steel plates have been anchored to the deck at wheel track locations, steel plates are loose and are a hazard (anchor steel plates), underside of timber deck is generally in good condition;
- Embankment – code compliant approach guiderail is required;
- Reinforced concrete pier shaft – light to medium honeycombing was noted;
- Steel bottom chord of truss – light corrosion throughout;
- Steel connection plate of truss – light corrosion throughout;
- Steel top chord of truss – light corrosion throughout; and
- Steel diagonal of truss – two diagonals with local buckling or impact damage, light corrosion throughout.

3.2 Comparative Analysis

[8] Original bridge drawings, rehabilitation or relocation drawings, or possibly even council minutes from either 1924 or 1937 would confirm the bridges construction date, the date it was moved, as well as those elements of the bridge which are original to the structure and those that were constructed or modified during its relocation.

The Black River Road Bridge is a half-through Warren truss structure with a deck girder approach span on the east with an east-west orientation that carries one lane of vehicular traffic across the Black River. The subject bridge was most likely constructed in 1924 and relocated to its present location in 1937, and measures 21.7 metres in overall length with a width of 4 metres.

The OSIM report refers to the structure as a truss bridge, and so the subject bridge was compared with similar half-through truss structures found in the City of Kawartha Lakes Structural Inventory, MTO Bridge Inventory – Northeastern Region[9], the Ontario Heritage Bridge List, and the historical bridge inventory on *Historicbridges.org*. According to this comparative sample, there are 51 known half-through Warren truss structures, in addition to the Black River Road Bridge, in Ontario (list of comparative bridges in Appendix B). Of these, the Black River Road Bridge is one of nine known structures of this type in the City of Kawartha Lakes. The closest structures from a geographic and temporal perspective are those located in the northern half of the City of Kawartha Lakes, including:

- Brook's Bridge (B 006754), constructed in 1916 with a length of 32.6 metres across three spans this bridge carries Chisolm Trail over the Black River;
- Taylor Road Bridge (B 400012), constructed in 1920 with a length of 36.0 metres across two spans, this bridge carries Taylor Road over an unnamed creek;
- Gilberts Bridge (B 400011), constructed in 1920 with a length of 25.0 metres across one span, this bridge carries Hills Road over an unnamed creek; and
- Burnt River Bridge (B 89406), constructed in 1920 with a length of 40.7 metres across one span, this bridge carries Main Street over the Burnt River.

The Madawaska Railway Bridge (Plate 14) is the earliest example of a half-through Warren truss bridge in the comparative sample. It was built in 1894, predating the subject bridge by more than 50 years (Holth 2020b). Of the bridges in the comparative sample within the City of Kawartha Lakes, the Victoria Rail Trail Bridges 003 and 004 are the oldest, constructed in 1910 and 1911, respectively. The subject bridge is one of the most recent with only two half-through Warren truss bridges constructed at a later date: the Mill Pond Bridge and Victoria Rail Trail Bridge 008. Of the 27 bridges in the comparative sample with a known construction date, 15 (or approximately 55%) were constructed in 1923 or earlier, prior to the subject bridge. Using the date of relocation, 1937, approximately 18 (or 66%) were constructed prior to the subject bridge being moved to its current location. The subject bridge is not considered significant in terms of age.

The subject bridge, measuring 21.7 metres in overall length, is longer than 9 and shorter than 13 of the 23 half-through Warren truss bridges that have recorded lengths in this comparative sample. The Prune Creek Bridge, with a total length of 104.8 metres, across three spans, is the longest bridge in this sample. The subject bridge is not significant in terms of the overall length or number of spans.

Based on the review and comparison of the available bridges in this comparative sample, the subject bridge is not considered to be significant in terms of age, overall length, and overall number of spans.

[9] The subject bridge is located near the border of MTO's Eastern and Northeastern regions. As there are no half through truss structures listed in MTO's Eastern Region Inventory the Northeastern Region Inventory list was used for comparison.

4.0 CONTEXTUAL RESEARCH

4.1 Setting and Character

The Black River Road Bridge is located along Black River Road, approximately 10 kilometres east of Lewisham Road, crossing the Black River within the Queen Elizabeth II Wildlands Provincial Park in the northern portion of the City of Kawartha Lakes. The structure carries one lane of vehicular traffic across the Black River and Victoria Falls. The bridge is surrounded by densely wooded land, natural vegetation and waterways, and bare rock. Black River Road is a narrow dirt and gravel municipal road that leads to the subject bridge and Victoria Falls, a popular destination spot within the park. The road is closed during the winter and the months of March and April to preserve the surface during spring melt (Ontario Parks 2006).

The bridge is built in a way that does not detract from the landscape. Built into the natural landscape, using as many natural local materials as possible, the subject bridge creates an aesthetic that supports and maintains the semi-wilderness setting. Using the natural stone outcrops as a west abutment allows for minimal visual intrusion to the landscape. The dry laid stone abutment is likely made from local materials and as a result supports the natural rocky character of the area. The configuration of the trusses and railings allow for views of the surrounding landscape from the deck of the bridge and do not obscure any landscape elements when looking towards the bridge and beyond from the surrounding lands and outcrops. The bridge has potential contextual value in that it is physically, visually, and historically linked to its surroundings and is important in maintaining or supporting the character of the area.

4.2 Community Landmark

The Black River Road Bridge is located within the Queen Elizabeth II Wildlands Provincial Park, a 33,505 hectare park known for its rock barrens and semi-wilderness setting. The bridge is known as a picturesque vantage point from which to observe the small falls and rapids which pass below. The bridge and falls serves as a marker for canoe access and the area surrounding is heavily used by visitors during summer weekends, an estimated 300-400 campers visit the area on a Victoria Day weekend alone (Ontario Parks 2006:7). It should be stated that park mapping notes that there is no camping allowed at Victoria Falls (Figure 7). A photo of the view from the Black River Road Bridge appears on the cover of the background information document for the park (credited as the Victoria Bridge) (Ontario Parks 2006). The bridge is a well-known structure within the Queen Elizabeth II Wildlands Provincial Park and serves as a local tourist attraction and marker within the park. As such, the Black River Road Bridge is a significant community landmark.

5.0 CULTURAL HERITAGE VALUE

5.1 Ontario Regulation 9/06 Evaluation

Table 3 contains the evaluation of the Black River Road Bridge within the framework set out in O. Reg. 9/06. 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 Black River Road Bridge (Structure ID 400019) using *Ontario Regulation 9/06*

1. The property has design value or physical value because it:	
Ontario Heritage Act Criteria	Analysis
i. is a rare, unique, representative or early example of a style, type, expression, material or construction method;	The subject bridge meets this criterion. Black River Road Bridge was constructed in c. 1924 and was mostly likely relocated to its present location in 1937. The bridge's main span is a half-through Warren truss structure that features a deck girder approach span on the east. The bridge has an overall deck length of 21.7 metres and an overall width of 4 metres. The substructure consists of stone abutments and a central stone and concrete pier. Stone was a common construction material prior to the introduction of concrete, and in remote locations was useful as a material that could be locally sourced. The west abutment utilizes the natural rock of the western riverbank. The east abutment is made of dry laid stone, most likely locally sourced. The substructure is considered to be a representative example of early twentieth century construction techniques.
ii. displays a high degree of craftsmanship or artistic merit, or;	The subject bridge does not demonstrate a high degree of craftsmanship or artistic merit.
iii. demonstrates a high degree of technical or scientific achievement.	The subject bridge does not demonstrate a high degree of technical achievement or scientific achievement.
2. The property has historical value or associative value because it:	
Ontario Heritage Act Criteria	Analysis
i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community;	Restrictions in place to limit the spread of COVID-19 prohibited access to all non-digitized archival material. As such, it cannot be determined if the subject bridge does or does not meet this criterion at this time. Based on available documentation, the subject bridge does not appear to have any direct associations with a theme, event, belief, person, activity, organization, or institution that is significant to the City of Kawartha Lakes.
ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or;	Restrictions in place to limit the spread of COVID-19 prohibited access to all non-digitized archival material. As such, it cannot be determined if the subject bridge does or does not meet this criterion at this time. This bridge does not appear to 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.	Restrictions in place to limit the spread of COVID-19 prohibited access to all non-digitized archival material. As such, it cannot be determined if the subject bridge does or does not meet this criterion at this time.

	It is unknown who designed, constructed, and relocated the subject bridge.
3. The property has contextual value because it:	
Ontario Heritage Act Criteria	Analysis
i. is important in defining, maintaining or supporting the character of an area;	The subject bridge meets this criterion. The subject bridge carries Black River Road over the Black River in a forested and natural context within the Queen Elizabeth II Wildlands Provincial Park in the City of Kawartha Lakes. The surrounding landscape features bare rock and rocky soils. The use of natural rock and local stone in the substructure supports the character of the area. The materials used create an aesthetic appeal that is harmonious with the landscape. The truss style allows for minimal visual intrusion and provides unobscured views of the river, both from the bridge itself when driving or walking across and also when looking beyond the bridge from the river.
ii. is physically, functionally, visually or historically linked to its surroundings, or;	The subject bridge meets this criterion. The bridge is functionally linked to its surroundings as part of the transportation network providing access to the park. The bridge is physically integrated into the landscape, using local and natural materials in the substructure. The use of the natural rock for the west abutment and local stone for the pier and east abutment creates a harmonious link with the landscape. The bridge is visually linked to its surroundings and is visible from several rocky outcrops along the waterway.
iii. is a landmark.	The subject bridge meets this criterion. The bridge is a well-known structure within the Queen Elizabeth II Wildlands Provincial Park and serves as a local tourist attraction and marker within the park. It is known as a picturesque vantage point from which to observe Victoria Falls and rapids below. The area around the bridge is heavily used for camping by visitors to the park and, together with the falls, serves as a marker for canoe access to the Black River.

The above evaluation confirms that the Black River Road Bridge in the City of Kawartha Lakes 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 substructure of the bridge is a representative example of early twentieth-century construction techniques. It is also determined that the subject bridge is important in maintaining or supporting the character of the area, as the materials used are harmonious with the landscape and the design allows for unobscured views of the river; is functionally, physically, and visually linked to its surroundings, as the bridge is part of the transportation network providing access to the park, its use of local materials fuses the bridge to the landscape, and the bridge is visible from several rocky outcrops along the waterway; is a landmark, well known as a picturesque vantage point for the falls as well as a marker for canoe access and campsites. Restrictions in place to limit the spread of COVID-19 prohibited access to all non-digitized archival material. As such, it cannot be determined if the subject bridge does or does not

meet historical or associative criteria at this time. Given that the Black River Road Bridge meets at least one of the criteria contained in O. Reg. 9/06, this structure is considered to have cultural heritage value.

5.2 Proposed Statement of Significance

Description of Property

The Black River Road Bridge was constructed in c. 1924 and relocated to its current site in 1937, where it is situated in an east-west orientation over the Black River in the former Township of Dalton, former County of Victoria. It is unknown who designed or constructed the bridge. The bridge is a steel structure consisting of a half-through Warren truss main span and a deck girder approach span on the east with an overall deck length of 21.7 metres and an overall width of 4 metres.

Draft Statement of Cultural Heritage Value or Interest

The Black River Road Bridge was determined to retain physical value as its substructure is a representative example of early twentieth-century construction techniques. The bridge also retains contextual value as it is important in maintaining or supporting the character of the area; is physically functionally, and visually linked to its surroundings; and is a landmark.

The bridge is a representative example of early twentieth-century construction techniques. Stone was a common construction material prior to the introduction of concrete, and in remote locations was useful as a material that could be locally sourced. The substructure consists of stone abutments and a central stone and concrete pier. The west abutment utilizes the natural rock of the western riverbank. The east abutment is made of dry laid stone, most likely locally sourced. The substructure is considered to be a representative example of early twentieth century construction techniques.

The bridge is important in maintaining or supporting the character of the area, which features bare rock and rocky soils. The use of the natural rock and local stone in the substructure supports the character of the surrounding wilderness. The truss style allows for minimal visual intrusion and provides unobscured views of the river, both from the bridge itself and when looking beyond the bridge from the river.

The bridge is physically, functionally, and visually linked to its surroundings. Functionally, the bridge is part of the transportation network that allows access to the Queen Elizabeth II Wildlands Provincial Park, carrying Black River Road over the Black River and Victoria Falls below. The bridge is physically integrated into the landscape, beyond simply being present, it uses local and natural materials for the substructure. The use of natural rock for the west abutment and local stone for the pier and east abutment creates a harmonious link with the landscape. The bridge is visually linked to its surroundings and is visible from several rocky outcrops along the waterway.

The bridge is a landmark. It is a well known structure within the Queen Elizabeth II Wildlands Provincial Park, serving as a local tourist attraction and marker. It is well known as a picturesque vantage point from which to observe the Victoria Falls and rapids of the river below. The area around the bridge is heavily used for camping by visitors to the park and, together with the falls, serves as a marker for canoe access to the Black River.

Description of Heritage Attributes:

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

- c. 1937 stone and concrete substructure.

Key attributes that express the contextual value of the bridge include:

- The continued use of the location as a crossing point;
- The use of local and natural materials in the substructure;
- The incorporation of natural stone elements of the surrounding landscape into the substructure; and
- The unobstructed views of the river and falls both from the bridge itself as well as through the bridge when viewed from the river and surrounding landscape.

6.0 CONCLUSION AND RECOMMENDATIONS

The Black River Road Bridge was originally constructed in c. 1924. It is unknown who designed or constructed the bridge, as well as the original location of the bridge before it was relocated, most likely in 1937, to carry Black River Road in an east-west orientation over the Black River in the former Township of Dalton, former County of Victoria. The bridge is a steel structure consisting of a half-through Warren truss main span and a deck girder approach span on the east with an overall deck length of 21.7 metres and an overall width of 4 metres.

Based on the results of background research, an analysis of bridge design and construction in Ontario, field investigations, and application of Regulation 9/06 of the *Ontario Heritage Act*, the Black River Road Bridge was determined to possess heritage value. The Black River Road Bridge was determined to retain contextual value as it is important in maintaining or supporting the character of the area; is physically functionally, and visually linked to its surroundings; and is a landmark. Restrictions in place to limit the spread of COVID-19 prohibited access to all non-digitized archival material. As such it can not be determined at this time whether the bridge does or does not also have historical or associative value. Given that the Black River Road Bridge met at least one of the criteria contained in Regulation 9/06, this structure is considered to be a cultural heritage resource and is eligible for designation under the *Ontario Heritage Act.*

The rehabilitation or replacement alternatives are still under consideration for the Black River Road Bridge however replacement has been identified as the preferred alternative.

Given the identified heritage value of the Black River Road Bridge, the following recommendations and mitigation measures should be considered and implemented:

1. Complete a HIA to identify alternatives and mitigation and monitoring commitments to avoid or lessen impacts on the heritage attributes of the property, based on the Statement of Cultural Heritage Value.

2. This report should be submitted by the proponent to heritage staff at the City of Kawartha Lakes, the Ministry of Heritage, Sport, Tourism and Culture Industries, and any other heritage stakeholders that may have an interest in this project.

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APPENDIX A: PHOTOGRAPHIC PLATES

Plate 1: Western approach towards the Black River Road Bridge from Black River Road, looking east.

Plate 2: Eastern approach towards the Black River Road Bridge from Black River Road, looking west.

Plate 3: View across Black River Road Bridge, looking east.

Plate 4: View across Black River Road Bridge, looking west.

Plate 5: View of the north truss and double steel rail-barrier and bridge deck.

Plate 6: View of the south truss and double steel rail-barrier and bridge deck.

Plate 7: Close-up of the riveted steel connections of the truss. The steel pipe railing system is visible below.

Plate 8: Underside of the western Warren truss span, stringers and floor beams visible.

Plate 9: Underside of the eastern deck girder span, rolled steel I-beam stringers visible.

Plate 10: Natural rock that makes up the western abutment.

Plate 11: Dry fit stone of the eastern abutment.

Plate 12: View of the west elevation of the pier.

Plate 13: East elevation of the pier.

Plate 14: Madawaska Railway Bridge (Holth 2020b).

APPENDIX B: COMPARATIVE HALF-THROUGH WARREN TRUSS TYPE BRIDGES

Compiled by ASI from the Ontario Heritage Bridge List (Ministry of Transportation 2008), MTO Northeastern Region Structural Inventory (Ministry of Transportation n.d.), and information available at Historicbridges.org

Table 4: Comparative Half-Through Truss Bridges in the City of Kawartha Lakes Structure Inspection Inventory (<3m)

Struct. No.	Bridge Name	Location	Year Constructed	No. Spans	Deck Length (m)	Deck Width (m)
VRT 003	n/a	Lot 23, Conc XII, Manvers	1910	1	10.2	3.0
VRT 004	n/a	Lot 24, Conc XIV, Manvers	1911	1	10.2	3.2
B 006754	Brook's Bridge	Lot 25/26, Conc. XII, Dalton	1916	3	32.6	5.0
B 89406	Burnt River	COUNTY ROAD 121 SMV	1920	1	40.7	13.2
B 400011	Gilbert's Bridge	Lot 25/26, Conc. I, Dalton	1920	1	25.0	4.9
B 400012	Taylor's Bridge	Lot 28, Conc. I/II, Dalton	1920	3	36.0	5.7
B 400019	Victoria Falls Bridge	Lot 1, Conc. XIII, Dalton	1924	2	21.7	4.0
B 100018	Mill Pond Bridge	Lot 7, Conc. III, Omemee	1952	4	54.9	4.3
VRT 008	n/a	Ken Reid Park	2000	1	36.2	3.2

Table 5: Comparative Half-Through Truss (Pony) Bridges in the MTO Structural Inventory

Structure OID	Name	Highway	Year Constructed	No. Spans	Deck Length	Deck Width
1705359	Blanche River Bridge	569	1923	3	92.5	4.9
1366523	Naiscoot River Bridge	529	1937	3	40.8	9.8
1986248	Prune Creek	n/a	1950	3	28.6	5.8
1670071	Leeburn Bridge, Thessalon River	n/a	1950	3	46	4.2
1706250	Blanche River Bridge	65	1960	3	104.8	12.6
1706417	Wright Creek Bridge	65	1960	1	32.3	12.1

Table 6: Comparative Steel Pony Truss Bridges in the Heritage Bridge List

Bridge List No.	Bridge Name	Roadway	Location	Bridge Type	Year Constructed	Ownership	MTO Region	Heritage Recognition
41	Big Otter Creek	Lot 14, conc 10, Middletown Line	Norwich Township (Oxford)	Steel pony truss	1900	Municipality	SW	Ontario Heritage Bridge List OHA designation – Part IV
50	Reinbird Street	Village of Coldwater	Coldwater (Simcoe)	Steel pony truss	1931	Municipality	Central	Ontario Heritage Bridge List
51	Mill Street	Village of Coldwater	Coldwater (Simcoe)	Steel pony truss	1931	Municipality	Central	Ontario Heritage Bridge List

Table 7: Comparative Metal 4 Panel Rivet-Connected Fixed Warren Pony Truss Bridges in Ontario found in Historic Bridges.org.

Name	Location	Year Constructed	No. Spans	Deck Length	Deck Width	Notes
5th Line Bridge	Over Nottawasaga River, Dufferin County	Unknown	1	n/a	n/a	This is a small pony truss a short distance off the main road on a dead-end road.
9 Mile Road Bridge	Over Black Creek, Stormont Dundas and Glengarry United Counties	Unknown	1	19.81 m	n/a	This small Warren pony truss bridge retains good historic integrity but has been closed to traffic.
Artemesia Glenelg Townline Bridge	Over Saugeen River, Priceville, Grey County	Unknown	1	n/a	n/a	This small riveted pony truss sits on the edge of the small community of Priceville.
Ausable Road Bridge	Over Ausable River, Middlesex County	1906-1909	1	n/a	n/a	A lightweight pony truss bridge built by the Hamilton Bridge Works in the first decade of the 20th century.
B Line	Over Snake Creek, Bruce County	Unknown	1	n/a	n/a	This small, traditionally composed structure is largely unaltered.

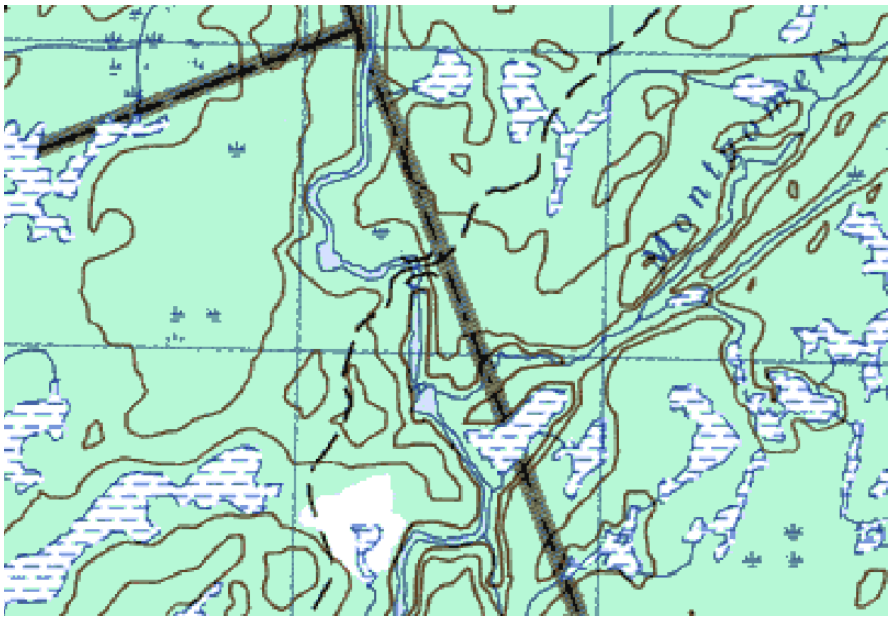
Name	Location	Year Constructed	No. Spans	Deck Length	Deck Width	Notes
Babtiste Creek Private Bridge	Private Trail over Babtiste Creek, Chatham-Kent Region	Unknown	1	n/a	n/a	This unusual lightweight Warren pony truss has some unusual design to it.
Barklay Boulevard Bridge	Over Syndenham River, Middlesex County	Unknown	1	n/a	n/a	An abandoned former trunkline pony truss bridge with poor deck condition.
Brock Thorah Townline Bridge	Over Beaver River, Durham Region	Unknown	1	n/a	n/a	This is a traditional Warren pony truss that adds interest to an otherwise typical agricultural landscape.
Concession A Road Bridge	Over Big Creek, Norfolk County	c. 1920	1	n/a	n/a	This bridge has been closed to traffic but would be worth rehabilitating and reopening for vehicular use.
Concession Road 14 Bridge	Over Beatty Saugeen River, West Grey, Grey County	Unknown	1	n/a	n/a	Big ugly modern guardrails all but hide this tiny pony truss.
Concession Road 2 Sunnidale Bridge	Over Mad River, Simcoe County	Unknown	1	18.29 m	n/a	This is a small pony truss on a quiet rural road on the edge of Minesing Wetlands Conservation Area.
Conley Bridge	Over Jock River, Ottawa City	c. 1940s	1	18.29 m	n/a	This bridge is a traditional Warren pony truss bridge from the 1940s.
Dennison Road Bridge	Over Keptville Creek, Leeds and Grenville United Counties	Unknown	1	16.76 m	n/a	This classic riveted pony truss bridge is in good condition and has the potential for many more years of service if maintained.
Glasgow Road Bridge	Over Humber River, Bolton, Peel Region	Unknown	1	n/a	n/a	This bridge is an extremely rare example of a bridge built by the Stratford Bridge Company.

Name	Location	Year Constructed	No. Spans	Deck Length	Deck Width	Notes
Glass Avenue Bridge	Abandoned alignment of Glass Avenue over 15 Mile Creek (old channel), Niagara Region	Unknown	1	n/a	n/a	This abandoned bridge is a reminder that Glass Avenue once went in a different direction in this area.
Hummel Bridge	South River, Alsace, Nipissing Township, Parry Sound District	Unknown	3 (1 main Pony Truss span, 2 approach spans)	Total = 36.58 m Main Span = 14.63 m	n/a	This is a rare documented example of a bridge built by the Toronto plant of the Dominion Bridge Company.
Madawaska Railway Bridge	Rail-Trail over Madawaska River, Nipissing District	c. 1894	3 (1 main Pony Truss span, 2 approach spans)	n/a	n/a	This rare railroad pony truss bridge was reconfigured and reused as a trail bridge.
Middletown Line Bridge	Over Otter Creek, Oxford County	Unknown	1	n/a	n/a	This pony truss is noted for its extremely lightweight truss members.
Misner Dam Bridge	Silver Lake Drive (Patterson Street CR-5) over Lynn River, Port Dover, Norfolk County	Unknown	1	n/a	n/a	This unusual bridge was built as an integral part of a dam and has today been bypassed by a new bridge.
Normanby Bentinck Townline Bridge	Over Beatty Saugeen River, West Grey, Grey County	Unknown	1	n/a	n/a	This is a small riveted pony truss with lattice railing.
Porter Bridge	Marburg Road over Black Creek, Norfolk County	Unknown	1	n/a	n/a	This attractive heritage pony truss is at risk for replacement despite significant local support for preservation.

Name	Location	Year Constructed	No. Spans	Deck Length	Deck Width	Notes
River Street Bridge	Over Nonquon River, Seagrave, Durham Region	c.1916-1917	1	n/a	n/a	This is a small Warren pony truss on a quiet road.
Road 129 Bridge	Over Smith Creek, Pearth East, Pearth County	Unknown	1	n/a	n/a	This largely unaltered truss bridge sits in a traditional agricultural setting.
Rothsay Bridge (Bridge No. ML1)	CR-7 over Mallet River, Mapelton Township, Wellington County	Unknown	1	18.68 m	8.29 m	This pony truss enjoys good historic integrity.
RR-20 Bridge	Over Beaverdams Creek (Power Canal), Thorold, Niagara Region	Unknown	1	23.47 m	n/a	An attractive 1930s pony truss that carries a lot of traffic.
Schenk Bridge	Over Saugeen River, West Grey, Grey County	Unknown	1	n/a	n/a	This is a locally uncommon example of a lightweight pony truss design composed of paired angles.
Sideroad 3 Bridge	Over Sauble River, Chatsworth Township, Grey County	Unknown	1	n/a	n/a	This pony truss appeared to be in good condition, yet was closed to traffic perhaps due to abutment problems.
Sideroad 6 Bridge	Over Mallet River, Mapleton Township, Wellington County	Unknown	1	17.01 m	5.49 m	This is a small but complete example of a riveted pony truss, and it has a slight skew.
Sneath Road Bridge	Over Humber River, Bolton, Peel Region	c.1910-1920	1	14.94 m	n/a	This bridge is one of the few heritage truss bridges in Ontario to be spared demolition and instead preserved!
South Pine River Private Bridge	Over South Pine River in Huron-	c.1900-1910	1	n/a	n/a	Now a private driveway, this former highway truss bridge noted for its lightweight members remains in place.

Name	Location	Year Constructed	No. Spans	Deck Length	Deck Width	Notes
	Kinloss, Bruce County					
South Saugeen River Private Bridge	Over Saugeen River, Southgate, Grey County	Unknown	1	n/a	n/a	This pony truss has been supplemented with what appear to be salvaged roof trusses.
Southgate Road 10 Bridge	Over Saugeen River, Southgate, Grey County	Unknown	1	n/a	n/a	This pony truss was apparently hit by a vehicle and subsequently repaired.
Troyer Road Bridge	Over Venison Creek, Norfolk County	c.1920	1	n/a	n/a	This pony truss has been closed to traffic for some time and is today quite overgrown with vegetation.
Victoria Falls Bridge	Black River Road over Black River, City of Kawartha Lakes	Unknown	1 main span and 1 approach span	n/a	n/a	This pony truss bridge rests upon a unique dry laid stone abutment which itself sits on a natural rock outcrop.
Windham 19 Road Bridge	Over Big Creek, Norfolk County	c.1930	1	n/a	n/a	This is one of the few truss bridges in Norfolk County that remains open to vehicular traffic.

APPENDIX C: ONTARIO HERITAGE BRIDGE SURVEY FORM

Bridge Name: Black River Road/Victoria Falls Bridge	
Highway: Black River Road	
Date: July 2020	
Structure ID: 400019	
Recorder: Archaeological Services Inc.	
Lot: 1 **Con:** 13	
Municipality: City of Kawartha Lakes	
1:50,000 Map Ref: NTS Gravenhurst Sheet 31D/14 1994	
Lat/long: 44.83335 -79.06089	
Air Photo Ref: n/a	**Map:** (Department of Energy, Mines and Resources 1994)
Description:	The Black River Road Bridge is a two-span steel truss/steel girder bridge located in Queen Elizabeth II Wildlands Provincial park that carries Black River Road over the Black River, approximately 10.10 km east of Lewisham Lane
BRIDGE ENVIRONMENT & USES	
Water/Road/Rail/Other Crossing	Water, the bridge spans the Black River
Surrounding Land-Uses & Landscape	Black River road is a single lane gravel vehicle road. The posted speed is 80 km/hr. The surrounding area is the semi-wilderness of the broader Provincial Park, characterized by natural vegetation, bare rocks, and shallow soils
Bridge Uses	Carries one lane of vehicular and pedestrian traffic over the Black River
DESIGN	
Materials	Steel, stone, concrete
Construction Techniques	Half-through Warren truss (main span) and a deck girder approach span on the east
Decorative Features	n/a
Landscape Quality	The bridge structure is unobtrusive, providing relatively unobstructed views of the surrounding landscape and river
State of Preservation	The OSIM Inspection Form notes deterioration and honeycombing of concrete and light corrosion of steel (AUE Structural Inc. 2017)
Other Comments	n/a
DIMENSIONS	
Carriageway Width	3 m
No. of Lanes	1
Sidewalks	n/a

Capacity	3 t
No. of Spans	2
Longest Span	12.8 m
Shortest Span	4.9 m
Overall Deck Length	21.7 m
Overall Width	4 m
Clearance	n/a
HISTORY	
Date Built	c. 1924, relocated c. 1937
Engineer/Designer	Unknown
Construction Firm	Unknown
Drawings/Specifications	n/a
Photos	Historical photos were unavailable for review. See Appendix A for additional current photos.
Historical Association	Unknown
Previous Bridges	Unknown
Other Comments	Access to archival material was not possible due to the restrictions in place caused by the COVID-19 pandemic, making review of all non-digitized sources impossible
PROPERTY RIGHTS & RESPONSIBILITIES	
Owner	City of Kawartha Lakes
Maintenance	City of Kawartha Lakes
PLANNED UNDERTAKING	
The preferred option is bridge replacement	
GENERAL COMMENTS	
n/a	