

Meeting Date: June 6, 2022

Subject: Recommendation to Remove Structure from Heritage Register – Kennedy Road Bridge (B260-64020), Ward 1

Submitted By: Sally Drummond, Senior Planner, Heritage, Strategic Policy Planning, Planning Department

RECOMMENDATION

That the listed, non-designated bridge identified by reference number B260-64020 located on Kennedy Road, be removed from the Town of Caledon Heritage Register pursuant to Section 27 of the *Ontario Heritage Act*;

That the demolition of the bridge be permitted; and

That all efforts be made to salvage elements of the bridge for commemorative purposes as outlined in Staff Report-2022-0255 and an update on such efforts be provided to the Heritage Caledon Committee throughout the project.

REPORT HIGHLIGHTS

- Municipally owned structure B260-64020 is a c.1915 single lane bridge on Kennedy Road (the “Kennedy Road Bridge”) spanning the Little Credit River, 1.4 kilometres north of Olde Base Line Road.
- The Kennedy Road Bridge was identified on the Town’s 2009 Built Heritage Resources Inventory; further evaluation has determined its cultural heritage significance rests in its design, early construction date, associations with prolific bridge engineers/builders Wheelock, Christie and Mattaini, and general historic settlement in the region.
- An Environmental Assessment completed in 2018 by the Engineering Services Department determined that rehabilitation of the Kennedy Road Bridge is not feasible, and the preferred solution is replacement and commemoration.
- In May 2020, the Kennedy Road Bridge was listed as a non-designated structure on the municipal Heritage Register (Council resolution 2020-91) pursuant to section 27(3) of the *Ontario Heritage Act* (the “Act”).
- In September 2020, the Engineering Services Department awarded a contract for Detail Design of the replacement structure.
- On February 17, 2022, the Engineering Services Department had submitted a Notice of Intention to Demolish the structure, together with a Cultural Heritage Documentation Report. The submission was deemed complete by Heritage staff on February 18, 2022.
- Following discussion of the matter at the March 6, 2022, meeting of Heritage Caledon, the matter was referred back to Engineering staff for clarification regarding the structural integrity of the bridge, the status of the Environmental Assessment and consideration of alternatives.

- To facilitate this request for clarification within the timelines of the Act, Engineering Services staff withdrew the Notice of Intention to Demolish and subsequently resubmitted it on May 26, 2022.
- Council has until July 26, 2022, being 60 days from May 26, 2022, to determine whether to permit the removal of the Kennedy Road Bridge from the Heritage Register, or to conserve it through designation under Section 29 of the Act.
- Heritage staff recommend that the listed, non-designated Kennedy Road Bridge be removed from the Town of Caledon Heritage Register pursuant to Section 27 of the Act, and that demolition of the structure be permitted following salvage of elements for commemorative purposes.
- The recommendations are made in consultation with Heritage Caledon in accordance with Section 27(4) of the Act.

DISCUSSION

Background

The Kennedy Road Bridge is a municipally owned structure (B260-64020) located on Kennedy Road, 1.4 kilometres north of Olde Base Line Road. Built in 1915, the bridge is a single span, concrete solid slab structure that carries a single lane of vehicular traffic over the Little Credit River, a tributary of the Credit River. It is surrounded by a gravel road with little to no shoulder. It is the oldest known surviving example of a single span bridge of its classification in the Town of Caledon and Region of Peel.

The Kennedy Road Bridge was identified in Caledon's 2009 Built Heritage Resources Inventory of Pre-1946 Structures. It was also noted as an 'extremely important feature' of the candidate cultural heritage landscape known as "Lower Kennedy Road: Between The Grange Sideroad and Olde Base Line Road", which had been considered in Caledon's 2009 Cultural Heritage Landscape Inventory. Although this candidate area did not meet the established criteria for identification as a cultural heritage landscape, the bridge was noted as being worthy of recognition and preservation.

Heritage evaluations of the bridge were undertaken as part of the Town's Class Environmental Assessment process in 2015 (Cultural Heritage Evaluation Report, Unterman McPhail Associates) and 2017 (Heritage Impact Assessment, Archaeological Services Inc.). These reports determined that the cultural heritage significance of the bridge rests in its design, historical, and contextual value, its early construction date, and associations with prolific bridge engineers C.R. Wheelock and U.W. Christie and bridge builder Charles Mattaini, as well as the general historic settlement in the region. Based on the application of Ontario Regulation 9/06 *Criteria for Determining Cultural Heritage Value or Interest*, it was determined the bridge retained sufficient cultural heritage value to merit designation under Section 29 of the Act.

Under Section 27(3) of the Act, Council may include non-designated properties that it believes to be of cultural heritage value or interest on the municipal Heritage Register. In May 2020, Council approved the listing of the Kennedy Road Bridge as a non-designated property on the Heritage Register by resolution 2021-91.

Section 27(9) of the Act provides listed non-designated properties 60 days interim protection from demolition. The evaluation process for 'listing' purposes is preliminary in nature. As such, a 'listed' property may be subject to periodic re-evaluation by Heritage staff. Properties may also be evaluated in greater depth through a variety of studies undertaken to assess the cultural heritage value of a property and/or to assess the direct and/or indirect impacts to the property as a result of a proposed development application, demolition/removal, or alteration.

The most recent Environmental Assessment for the Kennedy Road Bridge, completed in 2018, determined that the preferred outcome was full replacement of the existing bridge with a two-lane structure.

Notice of Intention to Demolish

Pursuant to Sections 27(9) and 27(11) of the Act, a Notice of Intention to Demolish the Kennedy Road Bridge was initially received from the Town's Engineering Services Department on February 17, 2022, together with a Cultural Heritage Documentation Report (CHDR) (ASI, December 2021), and deemed complete on February 18, 2022.

Following discussion of the Notice at the March 6, 2022, meeting of Heritage Caledon, the matter was referred back to Engineering staff for clarification regarding the structural integrity of the Kennedy Road Bridge, the status of the 2018 Environmental Assessment and consideration of alternatives. To facilitate this request for clarification within the timelines of the Act, Engineering Services staff withdrew the initial Notice of Intention to Demolish; it was subsequently resubmitted on May 26, 2022 and deemed complete (Schedule A).

Council has until July 26, 2022, being 60 days from May 26, 2022, to determine whether to permit the removal of the Kennedy Road Bridge for the Heritage Register or to conserve it through designation under Section 29 of the Act.

Kennedy Road Bridge – Summary of Structural Integrity / Environmental Assessments

The following overview is provided in response to the discussion at the March 6, 2022 Heritage Caledon meeting. A more fulsome chronology of the various structural, cultural and environmental assessments and activities pertaining to the Kennedy Road Bridge from 2003 to 2021 is provided in Schedule C.

Starting in 2003, the biennial Ontario Structure Inspection Manual (OSIM) reports, undertaken over the years by different engineering consultants, noted that the Kennedy Road Bridge is functionally inadequate and recommended replacement.

In 2008, the Town's Environmental Assessment recommended rehabilitation of the single lane structure, although no details regarding the feasibility of rehabilitation were provided, nor consideration given to mitigation such as salvage and commemoration.

Between 2009 and 2014 no funding was committed for rehabilitating the Kennedy Road Bridge; funding was dedicated to other capital bridge projects.

In 2014, a detailed condition survey for the Kennedy Road Bridge was completed, which determined that the cast-in-place construction method of the bridge deck and parapet walls and the poor condition of its concrete did not allow for rehabilitation. Based on these findings, full replacement of the structure was recommended.

In 2015, a new Environmental Assessment (EA) of the Kennedy Road Bridge was initiated, which considered the following six alternatives:

1. Do Nothing – as required by the Municipal Class EA process
2. Remove the Existing Bridge
3. Rehabilitate the Existing Bridge – Vehicular
4. Rehabilitate the Existing Bridge – Pedestrian
5. Replace the Existing Superstructure
6. Replace the Existing Bridge with a Two-Lane Bridge

A summary of the evaluations of these alternatives is provided in Schedule D. Completed in 2018, the Environmental Assessment's preferred solution was replacement with a two-lane bridge based on the following rationale:

- If the bridge was to be rehabilitated as the current single lane structure, the entire deck and parapet walls would have to be replaced.
- If the deck and parapet walls have to be replaced, it is no longer considered rehabilitation but full replacement.
- If full replacement of the bridge is required, a single lane bridge is not allowed under the Provincial bridge code, thereby requiring replacement with a two-lane bridge.

The Bridge Condition Index (BCI) summary below, provided as part of most OSIM reports, indicates the continuing structural deterioration of the bridge.

Year	BCI*	Consultant	Recommendation
2015	55.45	EXP	Replacement
2017	55.45	GHD	Replacement
2019	51.15	GHD	Replacement
2021	49.89	GHD	Replacement

BCI Rating

	MIN	MAX
Good	70	100
Fair	60	69
Poor	0	59

The 2017 Heritage Impact Assessment of the Kennedy Road Bridge, undertaken as part of the Environmental Assessment process, recommended various conservation and mitigation strategies pending the preferred solution of the Environmental Assessment,

including the full recording and documentation of the bridge and its associated landscape prior to removal, by means of a Cultural Heritage Documentation Report (CHDR), and salvage and commemoration. The purpose of a CHDR is to provide precise and verifiable technical documentation of heritage resources and ensure that important information regarding the heritage resource is documented for future understanding. The CHDR for the Kennedy Road Bridge was completed in December 2021 (Schedule B).

Proposed Salvage and Commemoration

The proposed salvage and commemoration measures for the Kennedy Road Bridge entail:

- Salvage/retention of a section(s) of the side barrier wall(s) with inscribed initials/dates for re-installation by the Town at the Kennedy Road entrance to the Caledon Trailway, together with an interpretive plaque detailing the bridge history;
- incorporation of the historic pressed-panel barrier design element in the replacement bridge.

The extent of the barrier walls to be salvaged and the preferred commemoration site (east or west side of Kennedy Road) will be determined through further assessment by the Town during the detail design process. The intent of salvaging the original barrier wall is to be able to illustrate the pressed-panel design characteristic of early 20th century concrete bridges, and to retain a number of the unique inscriptions made by the bridge building crew at the time of construction, a known trait of the Wheelock, Christie, and Mattaini bridge building company.

Placing the commemorative elements near the creek crossing is not feasible for safety reasons. Placement of the interpretive plaque and salvaged bridge element(s) on the Caledon Trailway provides an opportunity to share the bridge's unique history with the broader public in proximity to its original setting.

Listing of Bridge on Heritage Register

The Kennedy Road Bridge was listed on the Heritage Register in 2020 after Council had approved the budget request for the Detailed Design of a replacement bridge and shortly before that contract was awarded. Removal of the bridge from the Heritage Register under the provisions of the Act is required for bridge design to be completed and construction to proceed.

Recommendation

Heritage staff have reviewed the CHER, HIA and CHDR for the Kennedy Road Bridge and are satisfied that the structure and its history have been appropriately evaluated and documented.

Heritage staff concur with the proposed salvage and commemoration plans for the Kennedy Road Bridge and recommend that the structure be removed from the Town of Caledon's Heritage Register.

Pursuant to Section 27(4) of the Act, this report constitutes consultation with the municipal heritage advisory committee (Heritage Caledon) as required prior to removal of any properties from the municipal Heritage Register.

FINANCIAL IMPLICATIONS

There are no immediate financial implications associated with this report.

COUNCIL WORK PLAN

The subject matter of this report is not relevant to the Council Workplan.

ATTACHMENTS

- Schedule A: Notice of Intention to Demolish – Kennedy Road single lane bridge (B260-64020), Ward 4
- Schedule B: Cultural Heritage Documentation Report – Kennedy Road Bridge (ASI, December 2021)
- Schedule C: Summary of Kennedy Road Bridge Structural Assessment Chronology
- Schedule D: 2018 Summary of Evaluation of Class Environmental Assessment Alternatives

May 26, 2022

Town Clerk and Heritage staff
The Corporation of the Town of Caledon
6311 Old Church Road
Caledon, ON, L7C 1J6

RE: Listed Heritage Property
Kennedy Road Bridge (Structure B26064020)
Council Resolution #(Approving Inclusion on Heritage Register): 2020-91
Kennedy Road, 1.4 km North of Old Base Line Road, Caledon, Ontario

To Whom It May Concern:

Please accept this letter as Notice of Intention to Demolish the bridge on Kennedy Road (1.4 km North of Old Base Line Road, Structure B26064020), pursuant to sections 27(9) and 27(11) of the Ontario Heritage Act.

The Kennedy Road Bridge was built in 1915 and rehabilitated in 1950. It is a one-span, concrete solid slab structure that carries a single lane of vehicular traffic over the Little Credit River.

The bridge was identified on the Town of Caledon's Built Heritage Resources Inventory of Pre-1946 Structures (ID #1453), and subsequently listed on the municipal Heritage Register as a non-designated property under Section 27(1) of Ontario Heritage Act(OHA) by means of Council Resolution 2020-91.

The Kennedy Road bridge is recommended to be replaced with a 2-lane bridge based on the outcome of the Environmental Assessment study in 2015 and the biennial OSIM inspection in 2021. Engineering Services Department from the Town of Caledon is anticipated to start construction in 2023.

As part of the Environmental Assessment process, the bridge was subject to a Cultural Heritage Evaluation Report (CHER) (Unterman McPhail Associates ,2015) as well as a Heritage Impact Assessment (HIA) (ASI, 2016), both of which determined the bridge to have cultural heritage value. However, physical assessment of the bridge determined that it could not be satisfactorily rehabilitated.

The HIA outlined a number of mitigation measures, including commemoration and the full recording and documentation of the bridge and its associated landscape prior to removal in the form of a Cultural Heritage Documentation Report (CHDR). Proposed commemoration entails installation of an interpretive plaque and salvaged sections of the bridge sidewalls at the Kennedy Road entrance to the Caledon Trailway.

In support of this Notice, I am enclosing the CHDR (ASI, 2021). The CHER, HIA and CHDR have been reviewed by Heritage Staff from the Town of Caledon.

If you require any further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Youk', with a stylized, cursive script.

Steve Youk P.Eng
Project Manager
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Town of Caledon
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CULTURAL HERITAGE DOCUMENTATION REPORT:

KENNEDY ROAD BRIDGE (B260-64020)

**LOT 3, CONCESSIONS I AND II EHS
GEOGRAPHIC TOWNSHIP OF CALEDON
TOWN OF CALEDON, REGIONAL MUNICIPALITY OF PEEL, ONTARIO**

FINAL REPORT

Prepared for:

R. J. Burnside & Associates Limited
3 Ronell Crescent
Collingwood, ON L9Y 4J6

ASI File: 20CH-114

May 2021 (revised December 2021)



**CULTURAL HERITAGE DOCUMENTATION REPORT:
KENNEDY ROAD BRIDGE (B260-64020)**

TOWN OF CALEDON, ONTARIO

EXECUTIVE SUMMARY

ASI was contracted by R. J. Burnside & Associates Limited to conduct a Cultural Heritage Documentation Report (CHDR) of the Kennedy Road Bridge (B260-64020) in the Town of Caledon, Ontario.

Built in 1915 and rehabilitated in 1950, the Kennedy Road Bridge is a one-span, concrete solid slab structure that carries a single lane of vehicular traffic over the Little Credit River, a tributary of the Credit River, in the Town of Caledon, Regional Municipality of Peel. The bridge was subject to a Cultural Heritage Evaluation Report (CHER) in 2015 (Unterman McPhail Associates 2015) as well as an Heritage Impact Assessment (HIA) in 2016 (ASI 2016), with subsequent updates made in 2017 (ASI 2017). The CHER and HIA confirmed that the bridge is included on the Town of Caledon's *Inventory of Built Heritage Resources* (#1453) and is identified as an "extremely important feature" in the Town of Caledon's *Cultural Heritage Landscape Inventory* (Scheinman 2009). In 2020, the subject bridge was added as a Listed property on the Town of Caledon Heritage Register (Town of Caledon 2020), however the bridge is not Designated under Part IV of the *Ontario Heritage Act*. Based on the results of archival research, an analysis of bridge design and construction in Ontario, field investigations, and application of Ontario Regulation 9/06, the Kennedy Road Bridge was determined to retain cultural heritage value (Unterman McPhail Associates 2015). Its heritage significance centres on its design, historical, and contextual value, its early construction date and associations with prolific builders Wheelock, Christie, and Mattaini, as well as general historic settlement in the region.

The purpose of this documentation report is to provide a heritage recording of the Kennedy Road Bridge. Heritage recording provides precise and verifiable technical documentation of heritage resources and ensures that important information regarding the heritage resource is documented for future understanding. Given the identified cultural heritage value of the Kennedy Road Bridge and the preferred course of action being carried forward as part of the Environmental Assessment involving its complete removal and replacement, the HIA (ASI 2017) outlined a number of recommendations and mitigation measures, including the full recording and documentation of the bridge and its associated landscape prior to removal (Recommendation #6). The present report satisfies this recommendation.

As the subject bridge is listed as a non-designated structure in the Town of Caledon Heritage Register, the Town of Caledon Council's approval will be required to remove the property from the register prior to structure replacement.

Once finalized, this report should be filed with the heritage staff at the Town of Caledon, the Peel Art Gallery, Museum and Archives, the Ministry of Heritage, Sport, Tourism, and Culture Industries, and any other relevant local heritage stakeholders.



PROJECT PERSONNEL

<i>Senior Project Manager:</i>	Lindsay Graves, MA CAHP Senior Cultural Heritage Specialist Senior Project Manager - Cultural Heritage Division
<i>Project Coordinator</i>	Katrina Thach, Hon. BA Associate Archaeologist Project Coordinator - Environmental Assessment Division
<i>Project Manager:</i>	Johanna Kelly, MSc Cultural Heritage Analyst Project Manager - Cultural Heritage Division
<i>Report Production:</i>	Michael Wilcox, PhD Cultural Heritage Technician Technical Writer and Researcher - Cultural Heritage Division
<i>Field Review:</i>	Michael Wilcox
<i>Graphics Production:</i>	Peter Bikoulis Archaeologist GIS Technician – Operations Division
<i>Report Reviewer(s):</i>	Lindsay Graves Johanna Kelly



QUALIFIED PERSONS INVOLVED IN THE PROJECT

Lindsay Graves, MA, CAHP

Senior Cultural Heritage Specialist | Senior Project Manager - Cultural Heritage Division

The Senior Project Manager for this Cultural Heritage Report is **Lindsay Graves** (MA, Heritage Conservation), Senior Cultural Heritage Specialist and the Environmental Assessment Coordinator for the Cultural Heritage Division at ASI. She was responsible for: overall project scoping and approach; development and confirmation of technical findings and study recommendations; application of relevant standards, guidelines and regulations; and implementation of quality control procedures. Lindsay is academically trained in the fields of heritage conservation, cultural anthropology, archaeology, and collections management and has over 15 years of experience in the field of cultural heritage resource management. This work has focused on the assessment, evaluation, and protection of above ground cultural heritage resources. Lindsay has extensive experience undertaking archival research, heritage survey work, heritage evaluation and heritage impact assessment. She has also contributed to cultural heritage landscape studies and heritage conservation plans, led heritage commemoration and interpretive programs, and worked collaboratively with multidisciplinary teams to sensitively plan interventions at historic sites/places. In addition, she is a leader in the completion of heritage studies required to fulfil Class EA processes and has served as Project Manager for over 100 heritage assessments during her time at ASI. Lindsay is a member of the Canadian Association of Heritage Professionals.

Johanna Kelly, MSc

Cultural Heritage Analyst | Project Manager - Cultural Heritage Division

The Project Manager and Cultural Heritage Analyst for this report is **Johanna Kelly** (MSc), of ASI. She was responsible for the day-to-day management activities, including scoping of research activities and drafting of study findings and recommendations. With over ten years of experience in the field, Johanna has focused on the identification and evaluation of cultural heritage resources both above and below ground. With a background in archaeology, her current focus is the assessment, evaluation, and protection of above ground cultural heritage resources. Johanna has been involved in numerous large scale and high profile projects in various capacities, including built heritage and cultural heritage landscape assessments under the *Ontario Environmental Assessment Act* for Class Environmental Assessments and Individual Environmental Assessments, and as required for various planning studies throughout the Province of Ontario.

Michael Wilcox, PhD

Cultural Heritage Technician | Technical Writer and Researcher - Cultural Heritage Division

The report writer for this report is **Michael Wilcox** (PhD, History), who is a Cultural Heritage Technician and Technical Writer and Researcher within the Cultural Heritage Division at ASI. He was responsible for preparing technical reporting and fieldwork for this project. His current responsibilities focus on identifying and researching historical documents as well as background research, assessment, and evaluation of cultural heritage resources in Ontario. He has over a decade of combined academic and workplace experience in conducting historical research and crafting reports, presentations, articles, films, and lectures on a wide range of Canadian history topics.



GLOSSARY

Term	Definition
Adjacent	“contiguous properties as well as properties that are separated from a heritage property by narrow strip of land used as a public or private road, highway, street, lane, trail, right-of-way, walkway, green space, park, and/or easement or as otherwise defined in the municipal official plan” (Ministry of Tourism, Culture and Sport 2010).
Built Heritage Resource (BHR)	“...a building, structure, monument, installation or any manufactured remnant that contributes to a property’s cultural heritage value or interest as identified by a community, including an Indigenous community. Built heritage resources are located on property that may be designated under Parts IV or V of the <i>Ontario Heritage Act</i> , or that may be included on local, provincial, federal and/or international registers” (Government of Ontario 2020:41).
Cultural Heritage Resource (CHR)	Includes above-ground resources such as built heritage resources and cultural heritage landscapes, and built or natural features below-ground including archaeological resources (Government of Ontario 2020).
Known Cultural Heritage Resource	A known cultural heritage resource is a property that has recognized cultural heritage value or interest. This can include a property listed on a Municipal Heritage Register, designated under Part IV or V of the <i>Ontario Heritage Act</i> , or protected by a heritage agreement, covenant or easement, protected by the <i>Heritage Railway Stations Protection Act</i> or the <i>Heritage Lighthouse Protection Act</i> , identified as a Federal Heritage Building, or located within a UNESCO World Heritage Site (Ministry of Tourism, Culture and Sport 2016).
Impact	Includes negative and positive, direct and indirect effects to an identified cultural heritage resource. Direct impacts include destruction of any, or part of any, significant heritage attributes or features and/or unsympathetic or incompatible alterations to an identified resource. Indirect impacts include, but are not limited to, creation of shadows, isolation of heritage attributes, direct or indirect obstruction of significant views, change in land use, land disturbances (Ministry of Tourism and Culture 2006). Indirect impacts also include potential vibration impacts.
Potential Cultural Heritage Resource	A potential cultural heritage resource is a property that has the potential for cultural heritage value or interest. This can include properties/project area that contain a parcel of land that is the subject of a commemorative or interpretive plaque, is adjacent to a known burial site and/or cemetery, is in a Canadian Heritage River Watershed, or contains buildings or structures that are 40 or more years old (Ministry of Tourism, Culture and Sport 2016).
Significant	With regard to cultural heritage and archaeology resources, significant means “resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the <i>Ontario Heritage Act</i> . While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation” (Government of Ontario 2020:51).



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1.0 INTRODUCTION

1.1 Report Purpose

ASI was contracted by R. J. Burnside & Associates Limited to conduct a Cultural Heritage Documentation Report (CHDR) of the Kennedy Road Bridge (B260-64020) in the Town of Caledon, Ontario. The purpose of this documentation report is to provide a heritage recording of the Kennedy Road Bridge. Heritage recording provides precise and verifiable technical documentation of heritage resources and ensures that important information regarding the heritage resource is documented for future understanding. Given the identified cultural heritage value of the Kennedy Road Bridge and the preferred course of action being carried forward as part of the Class Environmental Assessment (EA) involving the complete removal and replacement, the HIA (ASI 2017) outlined a number of recommendations and mitigation measures, including the full recording and documentation of the bridge and its associated landscape prior to removal (Recommendation #6). The HIA further suggested that consideration be given to a commemorative strategy (Recommendation #5c). Historical information and images provided in this documentation report could provide the basis for an interpretive historical plaque/commemoration if this is deemed appropriate. Further consultation with heritage staff at the Town of Caledon should be consulted if a commemorative strategy moves forward.

1.2 Project Overview and Description of Study Area

The Town of Caledon is undertaking a Class EA study and detailed design for the rehabilitation and replacement of several bridges and culverts within its jurisdiction. The study area for this report consists of the Kennedy Road Bridge, which is located approximately 1.5 km north of Olde Base Line Road (Figure 1).



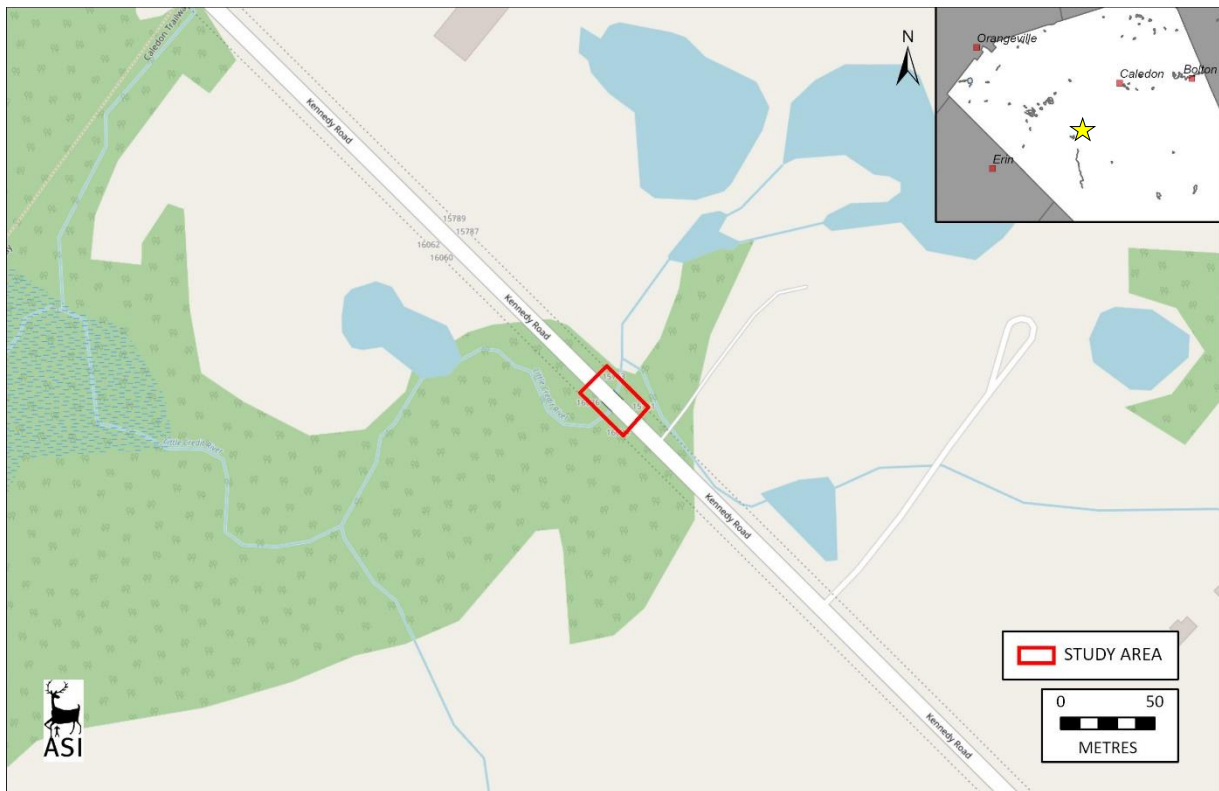


Figure 1: Location of subject bridge in the Town of Caledon

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

The principal aims of this report are:

- To describe the methodology that was employed (Section 2.0);
- To prepare a historical summary of the study area and a historical overview of the design and construction of the bridge within the broader context of the surrounding area (Section 3.0);
- To describe existing conditions (Section 4.0);
- To provide a summary of cultural heritage value and conclusions (Sections 5.0 and 6.0); and
- To provide a heritage recording of the bridge crossing (Appendices).

2.0 METHODOLOGY

2.1 Regulatory Requirements

This report has been undertaken to satisfy heritage mitigation measures recommended as part of the *Heritage Impact Assessment: Kennedy Road Bridge (B260-64020)* (ASI 2017).

The *Ontario Heritage Act* (OHA) (Ministry of Culture 1990) is the primary piece of legislation that determines policies, priorities and programs for the conservation of Ontario's heritage. There are many



other provincial acts, regulations and policies governing land use planning and resource development that support heritage conservation including:

- The *Planning Act* (Ministry of Municipal Affairs and Housing 1990), which states that “conservation of features of significant architectural, cultural, historical, archaeological or scientific interest” (cultural heritage resources) is a “matter of provincial interest”. The Provincial Policy Statement (Government of Ontario 2020), issued under the Planning Act, links heritage conservation to long-term economic prosperity and requires municipalities and the Crown to conserve significant cultural heritage resources.
- The *Environmental Assessment Act* (Ministry of the Environment 1990), which defines “environment” to include cultural conditions that influence the life of humans or a community. Cultural heritage resources, which includes archaeological resources, built heritage resources and cultural heritage landscapes, are important components of those cultural conditions.

The Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) is charged under Section 2.0 of the OHA with the responsibility to determine policies, priorities, and programs for the conservation, protection, and preservation of the heritage of Ontario. The Ministry of Tourism, Culture and Sport (now administered by MHSTCI) published *Standards and Guidelines for Conservation of Provincial Heritage Properties* (Ministry of Tourism, Culture and Sport 2010) (hereinafter “Standards and Guidelines”). These Standards and Guidelines apply to properties the Government of Ontario owns or controls that have cultural heritage value or interest (CHVI). The Standards and Guidelines provide a series of guidelines that apply to provincial heritage properties in the areas of identification and evaluation; protection; maintenance; use; and disposal. For the purpose of this report, the Standards and Guidelines provide points of reference to aid in determining potential heritage significance in identification of BHRs and CHLs. While not directly applicable for use in properties not under provincial ownership, the Standards and Guidelines are regarded as best practice for guiding heritage assessments and ensure that additional identification and mitigation measures are considered.

Similarly, the *Ontario Heritage Tool Kit* (Ministry of Culture 2006) provides a guide to evaluate heritage properties. To conserve a BHR or CHL, the *Ontario Heritage Tool Kit* states that a municipality or approval authority may require a heritage impact assessment and/or a conservation plan to guide the approval, modification, or denial of a proposed development.

In addition, the *Environmental Guide for Built Heritage and Cultural Heritage Landscapes* (Ministry of Transportation 2007) and the *Ontario Heritage Bridge Guideline for Provincially-Owned Bridges* (OHBG) (Ministry of Culture and Ministry of Transportation 2008) contain the policies pertaining to the documentation and recording of Provincially-owned heritage bridges. While intended for use in the assessment of provincially-owned structures and not directly applicable to the municipal context, the OHBG is regarded as current best practice for conserving heritage bridges in Ontario and ensures that heritage concerns and appropriate mitigation options are considered. Specific policies related to this assessment include:

Environmental Guide for Built Heritage and Cultural Heritage Landscapes (Ministry of Transportation 2007)

6.3.1.4 Cultural Heritage Resource Documentation Report for Built Heritage Resources



Where the resource is to be relocated or demolished, the Cultural Heritage Specialist should develop a full historical site research, photographic and map recording and documentation of the resource to be displaced or disrupted (see the MCL Guidelines listed in Section 2). Photographs and a written report will document most resources; however, some resources may need to be documented with measured drawings.

6.3.2 Heritage Bridges

The *Ontario Heritage Bridge Guideline for Provincially-Owned Bridges* is the primary reference for developing preservation / mitigation details for heritage bridges. The following information has been provided to supplement that document.

6.3.2.3 Documentation

Prior to deconstruction or demolition, a heritage bridge must be documented if it is deemed to be significant (as per the *Ontario Heritage Bridge Guideline for Provincially-Owned Bridges*). The documentation (Heritage Bridge Conservation Manual) should include the collection and preservation of documents describing the resource, including photographs, historical records, etc.

2.2 Municipal/Regional Heritage Policies

The study area is located within the Town of Caledon in the Region of Peel. Policies relating to cultural heritage resources were reviewed from the following sources:

- Town of Caledon Official Plan (Town of Caledon 2018)
- Region of Peel Official Plan (Region of Peel 2018)
- Niagara Escarpment Plan (Niagara Escarpment Commission 2020)

3.0 HISTORICAL CONTEXT AND CONSTRUCTION

3.1 Introduction

Built in 1915 and rehabilitated in 1950, the Kennedy Road Bridge is a one-span, concrete solid slab structure that carries a single lane of vehicular traffic over the Little Credit River, a tributary of the Credit River, in the Town of Caledon, Regional Municipality of Peel. The bridge has a generally north-south orientation and is located on Kennedy Road approximately 1.5 km north of Olde Base Line Road. According to the CHER, the “maximum clearance of the structure is 1.7 m (5-ft. 7-in.). The carriageway is 4.4 m (14-ft. 5-in.) wide and the overall width is 5.5 m (18-ft.). The overall deck length measures 13.42 m (44-ft)” (Unterman McPhail Associates 2015). The span measures approximately 12.1 m (A. Dawson, R.J. Burnside, email communication 21 June 2021).

The CHER and HIA noted that the Kennedy Road Bridge was not included on the Town of Caledon Heritage Register and did not have any status under the *Ontario Heritage Act* at the time of each report’s writing. However, it should be noted that the subject bridge was added as a Listed property on the Heritage Register in 2020 (Town of Caledon 2020). Based on the results of archival research, an



analysis of bridge design and construction in Ontario, field investigations, and application of Ontario Regulation 9/06, the Kennedy Road Bridge was determined to retain cultural heritage value (Unterman McPhail Associates 2015). Its heritage significance centres on its design, historical, and contextual value, its early construction date and associations with prolific bridge builders Wheelock, Christie, and Mattaini, as well as general historic settlement in the region.

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. This section of the 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 and the key people associated with its creation.

3.2 Historical Summary

The following information (Section 3.2.1 – Section 3.2.7) is copied from the CHER (Unterman McPhail Associates 2015:2–14).

3.2.1 Township of Caledon

Following the purchase of the southern part of the Mississauga Tract on the shore of Lake Ontario from the Credit River Mississaugas by the British Crown, the County of Peel was created in 1805. The remainder of the Mississauga Tract was acquired by the Crown from the Mississaugas in 1818 under the terms of the Ajetance Purchase, or Treaty 19 (Crown-Indigenous Relations and Northern Affairs 2016). This treaty excluded lands within one mile on either side of the Credit River, Twelve Mile Creek, and Sixteen Mile Creeks. Following the Ajetance Purchase, the “New Survey”, which extended north of the northern boundary of the county and included the townships of Albion, Caledon and Chinguacousy, was undertaken. The lot and concession grid pattern of the “New Survey” had a different orientation of concessions and lot dimensions from the “Old Survey” and its 200 acre lots were granted typically in square 100 acre parcels, to facilitate farming and access to surveyed road allowances. Surveyed in 1818-1819 by Samuel Ryckman, the Township Caledon, named after the Roman name for Scotland, was surveyed in a double-front lot system that set out north to south concession roads and east to west lots across a rugged topography. This resulted in offset lots that were 100 acres in size rather than the usual 200 acre lots. Six concessions were laid out on either side of Centre Road, or Hurontario Street (Highway 10). The concessions on either side of Centre Street were referred to as 'West of Hurontario Street' (WHS) or 'East of Hurontario Street' (EHS).

Caledon was opened for settlement in 1820, and by 1821, had a population of 100 people.¹ The first inhabitants tended to be the children of United Empire Loyalists, veterans of the War of 1812 as well as

¹ Nick and Helma Mika, *Places in Ontario* (Belleville: Mika Publishing Company, 1977), 320.



English, Scottish and Irish immigrants. More settlers arrived in the township in the latter part of the 1820s and by the mid 1830s the population of the township numbered over 1,400 people.² The first township meeting was held in 1824 near Belfountain and a township clerk, tax collector and a constable were elected. Historical settlements developed around water-powered mill sites on the rivers such as the Credit River and at strategic road intersections. The first post office in the township was opened in 1835. In 1846, *Smith's Canadian Gazetteer* refers to Caledon Township as:

*A township in the Home District [...] with 43,661 acres taken up and 9,307 acres under cultivation. The north of the township is hilly and broken, with a considerable quantity of pine; in the south the land is much better, and the timber principally hardwood. There are some good farms in the township. There are three grist-mills and one saw-mill in the township [...] Population in 1842, 1920.*³

Kennedy Road, one concession east of Hurontario Street, was opened as a north to south road in the early to mid 1800s. Olde Base Line Road was opened as an east to west road between Caledon Township and Chinguacousy Township around the same time as was the Grange Sideroad running east to west between Lots 5 and 6. All three roads are shown as open on the Tremaine Map (1859) and the *Illustrated Historical Atlas* map (1877) (Appendix A). During the late 19th century many sugar maple trees were planted along Kennedy Road. In the 20th century the road was maintained with a gravel surface.

The historical settlement area of Silver Creek, named after the Silver Creek branch of the Credit River system, developed along Kennedy Road to the north of the Grange Road. Dating from the early 1820s, the area had a large number of settlers of Irish Catholic descent. By 1840 the post office known as Caldwell had opened. Both names appear on the Tremaine Map (1859). By 1877, Silver Creek was described as having a grist mill, a general store, and a population of about 100 people with an impressive Roman Catholic Church.⁴ A schoolhouse was built at the northeast corner of Grange Sideroad and Kennedy Road in 1884.

Three railway lines arrived in Caledon Township in the 1870s, the Toronto Grey & Bruce (TG&B), the Hamilton & Northwestern Railway (H&NW) and the Credit Valley Railway (CVR). Their arrival precipitated economic growth in the vicinity of the important railway stations along the routes. The H&NW received its charter in 1872 and construction began in 1877. In Caledon, the railway ran east to west across the bottom of the township, crossing over Kennedy Road at Lot 3, Concession 1 and 2 EHS. In 1879, the rival Northern Railway and the H&NW were united as the Northern & North Western Railway (N&NW). In early 1888 the Grand Trunk Railway (GTR) took over the N&NW. The Canadian National Railway took over the original N&NW lines in 1923. The rail line was decommissioned in the 1980s and the Town of Caledon bought the line in 1989. The rails were removed and the line was converted into a section of the Trans Canada Trail.

Topographic maps indicate most of the township remained largely rural and agricultural in character during the 20th century. Kennedy Road remained a local gravel surfaced road with its single lane bridge

² Ibid.

³ Wm. H. Smith, *Smith's Canadian Gazetteer* (Toronto: H. & W. Rowsell, 1846), 27.

⁴ *Illustrated Historical Atlas of the County of Peel, Ontario* (Toronto, Ontario: Walker and Myles, 1877), 64.



over the Little Credit River. Some residential subdivision began to occur along Kennedy Road between Olde Base Line Road and the Grange Sideroad in the latter part of the 20th century.

The Town of Caledon was created on January 1, 1974 with the amalgamation of the Village of Bolton, the Village of Caledon East, the Townships of Caledon and Albion, and the north half of Chinguacousy Township.

3.2.2 Kennedy Road Bridge, Bridge No. 1, Site # B26064020

Kennedy Road was opened between Concessions 1 and 2 EHS in the early 1800s. A bridge probably spanned the Little Credit in the location of the subject bridge soon after the road was passable to vehicular traffic. Most early bridges were typically built of timber. Tremaine's Map (1859) shows the surveyed allowance and the *Illustrated Historical Atlas* (1877) shows the open road allowance (Appendix A). An early 20th century topographic map shows the bridge on the site in 1914 with a 'W' indicating it was a wood structure (Appendix A).

In the early 1900s, the counties were responsible for the maintenance of the main roads while townships and villages looked after for the local roads. In 1910, statute labour maintained the country roads primarily under the control of township councils. Money for repairs was raised by levy on the township assessment rolls.⁵ County councils were allowed, by by-law, to assume a system of county roads, with council deciding which roads to assume, and to seek aid and approval for improvements through the Ontario Minister of Public Works. The portion of Kennedy Road on which the bridge is located is believed to have been a local road at this time (ASI email communication with PAMA, 7 December 2021).

In 1911, sections of the Consolidated Municipal Act (1903), as enacted by the Municipal Amendment Act (1907), were repealed and new directives for bridge design were provided to municipalities. These new instructions were enacted in response to a concern over the construction of inferior bridges throughout the province. The Act noted that every iron, steel, concrete or stone bridge constructed by or under the jurisdiction and control of the corporation of a county was to be built in accordance with specifications approved by the Engineer of Highways of the Department of Public Works Ontario.⁶ As well the Province began to emphasize that counties employ civil engineers to design and supervise bridge construction due to a concern for the quality of the construction work and bridge longevity.

If a road superintendent is not a civil engineer, the services of a civil engineer should be engaged from time to time as required, to prepare plans and specifications and let contracts for, and certify as to the completion of, all steel, concrete, or other permanent bridges. The design of the bridge abutments, piers and arches and the erection of steel bridges is work requiring the special training of an engineer, and municipalities will save money and best serve their ratepayers by recognizing this fact. A recent amendment of the Municipal Act requires that all county bridges shall

⁵ Legislative Assembly of Ontario Sessional Papers, *The Report Upon the Department of Provincial Highways for 1911*, no. 14, 12.

⁶ *Ibid.*, 22.



be built in accordance with specifications approved by the Engineer of Highways for Ontario.⁷

As early as 1908, Peel County had engaged C.R. Wheelock on a per diem rate basis as its county engineer. Wheelock operated his own survey and engineering firm based in Orangeville and entered into a partnership with Uriah Christie to become Wheelock and Christie in 1915. It was common for a county engineer to also act on behalf of the townships in the county as well. Wheelock is known to have acted as a consultant to Caledon Township.

The minutes of the Caledon Township Council for May 18, 1915, indicate a committee was struck to examine all township bridges for necessary repairs during the year.⁸ The review appears to have been completed in June of that year. As part of this review, the wood bridge on Lot 3, 1st Concession EHS (Kennedy Road), was noted as being deficient and recommended for replacement. On July 6, 1915, the Council approved a motion that it would act as the committee to supervise the construction of the new bridge opposite Lot 3, 1st Line East.⁹ At the same time, Council instructed the township clerk to notify the Grand Trunk Railway Company to clear the beds of the stream on Lot 3, Concession 1 EHS, at the bridge location and to lower water levels where the new bridge was to be built.

A design for the new concrete solid slab bridge appears to have been completed by July. The Council engaged Charles Mattaini to build the bridge. Payments to contractors for steel deliveries to the bridge were authorized on August 10, 1915, and then again on September 7, 1915.¹⁰ On November 16, 1915, Reeve Thomas Quinn requested that a payment of \$157.82 for the steel used for the bridge on Lot 3, 1st Line East be made.¹¹ At the following meeting on December 15, 1915, Reeve Quinn reported that a reinforced concrete bridge had been completed opposite Lot 3, Concession 1 EHS, at a total cost of \$1128.82. He recommended the payment of \$644.86 be approved with \$87.00 to Wheelock & Christie Engineers for services and \$644.80 to be paid to Charles Mattaini for the bridge construction. It was indicated that the bridge work had been inspected and done to the satisfaction of the engineer.¹²

3.2.3 Concrete Solid Slab Structures

The Kennedy Road Bridge, Site No. 26064020, is classified as a concrete solid slab structure. The superstructure is constructed of reinforced cast-in-place concrete. It is important to note the terms “deck” and “slab” are used interchangeably at times to describe the same bridge component. A deck is properly defined as the traffic-carrying component that is supported by the bridge superstructure, such as beams (girders), arches or other structural component. A slab is the superstructure that is supported by the bridge substructure, such as an abutment, pier, column or bent.

⁷ Ibid., 72.

⁸ PAMA, Township of Caledon Council Minutes, May 18, 1915.

⁹ Ibid., July 6, 1915.

¹⁰ Ibid., August 10, 1915, and September 7, 1915.

¹¹ Ibid., November 16, 1915.

¹² Ibid., December 15, 1915.



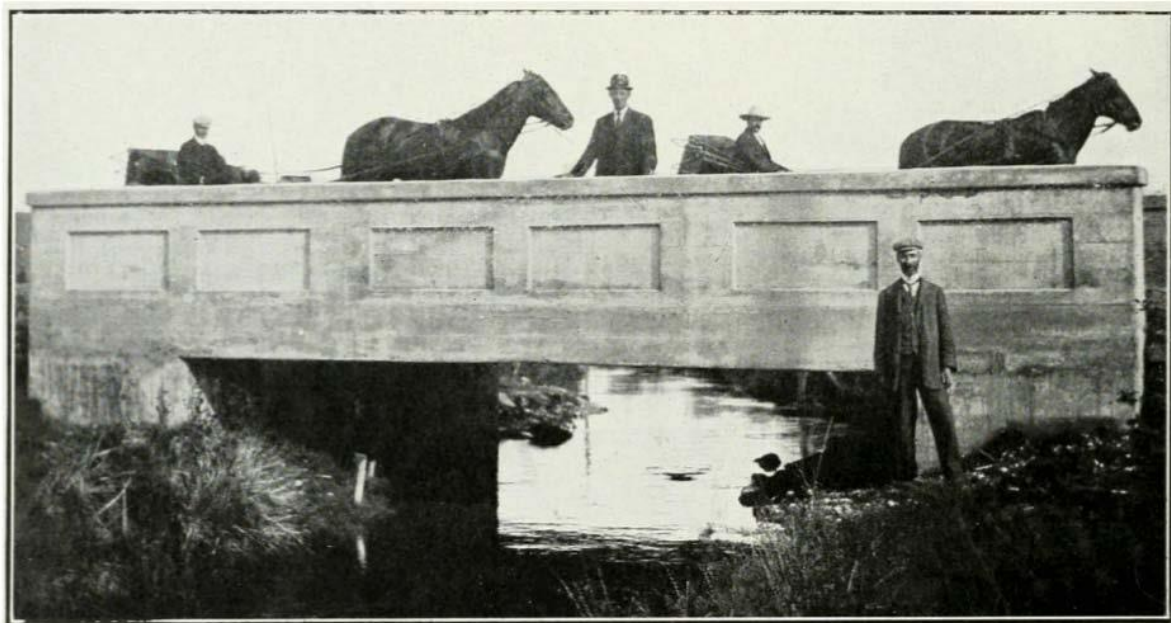
The solid slab is the simplest form of a reinforced cast-in-place concrete bridge. The earliest solid slab bridges were simple spans usually not more than 30-ft. (9.14 m) in length and generally less than 20-ft. (6.10 m) in length (Unterman McPhail Associates 2015:6). The rectangular shape flat solid slab rests on abutments or piers (Figure 2 to Figure 4). The bridge type proved to be economical and easy to construct when the overall length was kept short. Continuous multi-span solid slabs were also built from the 1910s through the early 1940s, although the need for supporting piers tended to increase the cost. The principal disadvantage of a solid slab bridge is its weight. For each incremental increase in length of the slab there was a corresponding increase in the depth or thickness of the slab. This resulted in more structural weight and the need for supporting piers made multi-span slab structures more expensive.¹³ Circular and rectangular voided slabs or ribbed slabs were developed as a means of lightening the structure, which permitted longer spans.

Solid slab bridges can be simply supported on bearings or cast integral with the abutments. Bearings and expansion joints are some of the most troublesome components of bridges, contributing to the deterioration of substructures due to water leaking through expansion joints, in particular, when de-icing salt is used. Bridges that are cast integral with the abutments are described as continuous and eliminate the need for bearings and expansion joints.

The solid slab structure type began to appear in significant numbers in the United States of America around 1905 and increased rapidly in popularity after 1910. The Bureau of Public Roads and the American Concrete Institute promoted the use of this structure type and many states adopted standard plans for solid slab bridges in the first quarter of the 20th century. The solid slab bridge continued to be built generally for small rural road bridges into the early 1940s.

¹³ Parsons Brinckerhoff and Engineering and Industrial Heritage. *A Context for Common Historic Bridge Types* (Prepared for The National Cooperative Highway Research Program, Transportation Research Council, National Research Council, October 2005), 3-85.





Reinforced Concrete Beam Bridge over the Credit near Orangeville. Clear Span, 22 feet ; Length over all, 34 feet ; Clear Width of Roadway, 20 feet ; Height of Walls, 13 feet 6 inches. Walls, Floor, and Girders are Concrete, Reinforced with Steel Rods. Cost —Concrete, \$448.00 ; Steel Reinforcing, \$85.00.

Figure 2: “Reinforced Concrete Beam Bridge over the Credit Near Orangeville.” The solid concrete handrails with recessed panels are similar to the Kennedy Road Bridge [Annual Report on Highway Improvement Ontario for 1911, No. 14, 106].

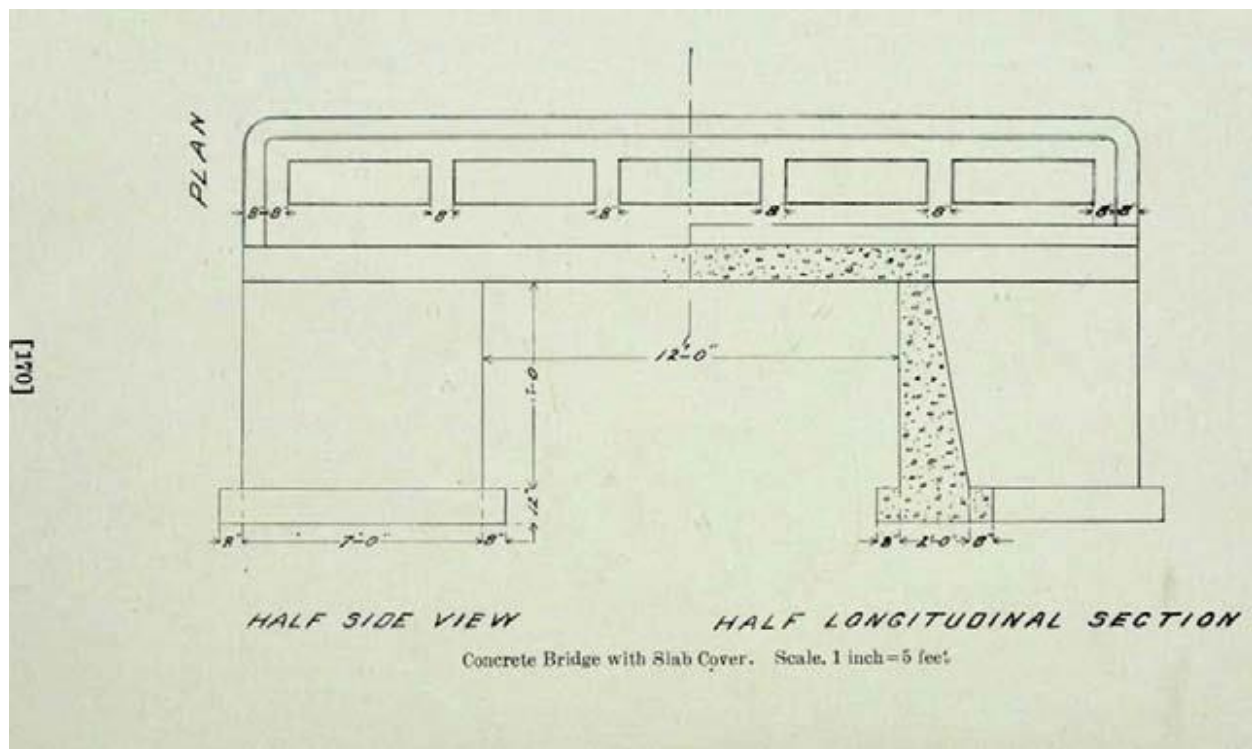


Figure 3: Half longitudinal section of a typical concrete bridge design with slab cover [Annual Report on Highway Improvement Ontario for 1910, No. 14, 170].

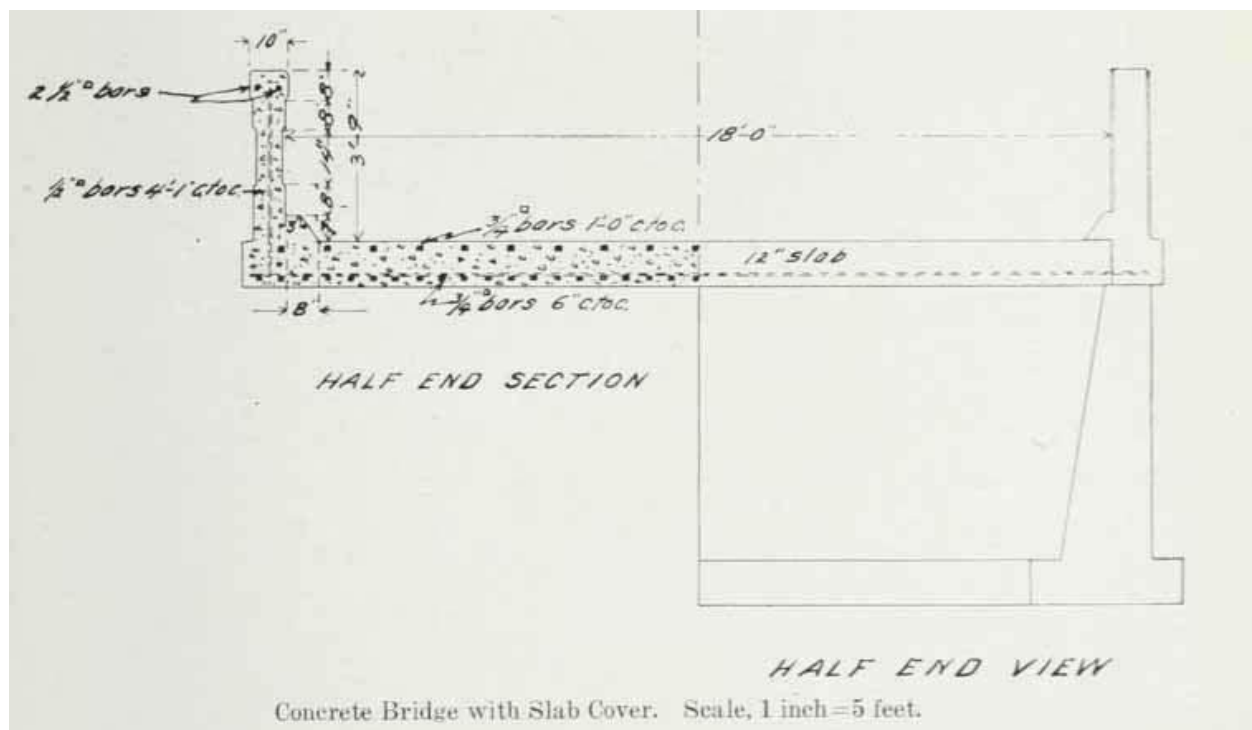


Figure 4: Half end view of a typical concrete bridge design with slab cover [Annual Report on Highway Improvement Ontario for 1910, No. 14, 171].

Canadian civil engineers did not use concrete widely as a material for bridge superstructures until about 1907. Many municipalities in the province began to build concrete structures around this time for local bridges. Solid slab structures were a popular choice. In contrast, only two concrete bridges had been built on the Ontario highway system by the end of 1923.¹⁴

The *Report Upon Highway Improvement for 1909* noted concrete superstructures in Ontario could be classified into four types, including a simple concrete slab with or without steel reinforcement. The simple concrete slab was considered to be very useful for spans up to 18-ft. and generally was designed with a suitable handrail of concrete, steel lattice or pipe.¹⁵ In the same year, the Highways Branch issued directions for building simple short-span concrete bridges that complemented their environment.¹⁶ It stated,

*Not only should bridges be strong and durable, but they should also be of good architectural type. This does not mean that they should be covered with tawdry ornamentation. On the contrary, country bridges should, as a rule, be severely simple, but at the same time harmonize with their surroundings as far as possible, and should be built on true engineering principles.*¹⁷

The report also emphasizes that the practice of an average councilor or a pathmaster in drawing up plans and specifications for bridges of concrete and steel was misguided, bridge building should be strictly within the sphere of the civil engineer and all councils should employ the services of a civil engineer.¹⁸

In 1916, it became mandatory in Ontario that every iron, steel concrete and stone bridge built by a county and every bridge exceeding 20-ft. in clear span built by a township was to be designed and built in accordance with general specifications approved by the Department of Public Highways. Plans in duplicate for any such bridge were to be submitted by the county or township to the Department for approval and certification. In 1917, the province issued the document, *General Specifications for Concrete Highway Bridges*.¹⁹

3.2.4 Handrails for Concrete Bridges

The first concrete bridge structures in Ontario typically had solid concrete handrails built to standard plans provided by the province. The earliest examples of concrete handrails were designed with either squared or rounded ends. Later, some bridges exhibited square end posts with square caps. The walls varied in thickness with the earlier examples tending to be thicker in width and heavier in appearance. Often the sides of the bridge handrails were decorated with rectangular recessed panels.

¹⁴ C.R. Young, "Bridge Building", *The Engineering Journal* (June 1937), 490.

¹⁵ Legislative Assembly of Ontario Sessional Papers, *The Report Upon Highway Improvement for 1909*, No. 31, 46.

¹⁶ Ibid.

¹⁷ Ibid., 41.

¹⁸ Legislative Assembly of Ontario Sessional Papers, *Annual Report on Highway Improvement Ontario for 1910*, No. 14, 73-74.

¹⁹ "General Specifications for Concrete Highway Bridges 1917", Appendix to the *Annual Report on Highway Improvement, Ontario for 1917* (Toronto, 1917), 3.



The *Annual Report Upon Highway Improvement for 1910* noted bridge handrails were a safety concern as well as an aesthetic component of the structure. The report stated,

*[...] attention should be given to their appearance as this is the only part of the work to be seen by the travelling public. Strongly-built railings of good appearance give a feeling of safety and security in passing over the bridges, and with little, if any, added expense, they may be made a matter of ornament to the highway.*²⁰

After the First World War, open concrete bridge railings with balusters became the preferred design and began to replace the solid concrete walls of the earlier structures. Standard metal railings with decorative open panels designed by the Department of Highways began to replace concrete handrails with balusters in the 1930s.

3.2.5 Bridge Engineer/Builder

The Township of Caledon Council Minutes for 1915 record a payment to Wheelock & Christie Engineering for services in the construction of the bridge on Lot 3, 1st Line East, namely, Kennedy Road Bridge, Bridge No. 1. Since no original drawings are available from the Town or in archival repositories with the engineer's name, this township council reference provides evidence as to the name of the bridge designer of the subject bridge.

3.2.6 Wheelock & Christie Engineers

C.R. Wheelock

Charles Richard (C.R.) Wheelock was born on April 27, 1864, in Orangeville, Ontario, the son of Irish immigrants Charles James Wheelock and Margaret Reed, both born in Ireland. His father, Charles J. Wheelock, Provincial Land Surveyor (P.L.S.), was noted as the first civil engineer and land surveyor to settle in Orangeville.²¹ Amongst his many works, C.J. Wheelock surveyed the village plan of Alton in Caledon Township,²² the Wheelock Map of Wellington County with Charles Leslie in 1861 and the Map of Bolton, Township of Albion in 1868. He also surveyed the Credit Valley Railway line starting in 1873.²³

C.R. Wheelock was educated in the local public and high schools in Orangeville and then worked for his father's land surveying business located in Orangeville, Ontario.²⁴ C.R. Wheelock married Gertrude Chippawa Tuck on January 15, 1891. At the time of his marriage, Wheelock was noted as a land surveyor

²⁰ Legislative Assembly of Ontario Sessional Papers, *Annual Report on Highway Improvement for 1910*, No. 14, 73.

²¹ "Chas. R. Wheelock, County Treasurer, Called Away on Friday Evening", *The Orangeville Banner* (June 11, 1925), 2.

²² Town of Caledon, et. al. *Alton Village Study Phase I, Background Issues Report* (November 2008), 40.

²³ Kathleen A. Hicks, *Dixie: Orchards to Industry* (Mississauga, Ontario: The Friends of the Mississauga Library System, 2006), 98.

²⁴ *Ibid.*



by profession. C.J. Wheelock died in 1897 and C.R. Wheelock continued to operate his father's business. In the following year, on January 28, 1898, C.R. Wheelock was appointed Treasurer of the County of Dufferin.²⁵

C.R. and Gertrude Wheelock lived in Orangeville, Ontario. They had seven children – Charles Herbert (1892), Gertrude “Aileen” (1894), Helen Margaret (1900), Kathleen Chippawa (1901), Richard (Jock) Swinton (1903), Arthur Stancliffe (1905) and Edgar Fellows (1905). Their son Second Flight Lieutenant Charles H. Wheelock of the Royal Flying Corps (R.F.C.) was a casualty of the First World War in 1918.

C.R. Wheelock was admitted as a member of the Association of Ontario Land Surveyors on January 7, 1886.²⁶ In 1896, his business firm was referred to as C.R. Wheelock & Son and its function as surveyors.²⁷ The 1901 census notes Wheelock as county treasurer by profession and the 1911 census as a county engineer. In 1915, C.R. Wheelock was noted as a land surveyor living in Orangeville.²⁸ The 1921 census return notes Wheelock was a civil engineer by profession. The Wheelock household included C.R. Wheelock, his wife Gertrude, and their five children, Eileen (Aileen), Helen, Kathleen, Richard and Arthur, and Wheelock's widowed sister Bessie Swinton in 1921.

C.R. Wheelock was the Peel County Engineer in 1908.²⁹ He held this position until 1925.³⁰ In 1912, the Township of Caledon Council appointed Wheelock as its township engineer.³¹ Around 1914, Wheelock formed a business partnership, Wheelock & Christie, Engineers, with Uriah W. Christie, a certified civil engineer. The company provided surveying and engineering services. As well as his private employment and his position as Dufferin County Treasurer, Wheelock also served as Dufferin County Engineer (1898-1925). Through his private practice and his public employment as county engineer, C.R. Wheelock is known to have designed bridges and been involved in numerous bridge works, for both the Counties of Dufferin and Peel and their respective townships in the early 20th century. Known bridge projects associated with C.R. Wheelock and/or Wheelock & Christie are contained in *Appendix C*.

Wheelock was also active in the Ontario Good Roads Association, having served as President and a member of the Executive, and the Association of Ontario Land Surveyors, where he served on its engineering committee.

²⁵ *Annual Report of the Association of Ontario Land Surveyors, (No. 22) and Proceedings of the Minutes of the Fifteenth Annual Meeting* (February 1907), 186; Steve Brown, Archivist, DCMA, October 16, 2014.

²⁶ *Annual Report of the Association of Ontario Land Surveyors (No. 32) and Proceedings of the Minutes of the Twenty-fifth Annual Meeting* (22 February 1917), 18, 184, and 218.

²⁷ *The Union Publishing Co.'s (of Ingersoll) farmers and business directory for the counties of Dufferin, Peel and York* (Ingersoll, Ontario: Union Publishing Co. of Ingersoll, 1896), A38.

²⁸ *Vernon's farmers and business directory for the counties of Dufferin, Halton, Peel, Waterloo & Wellington for the year 1915* (Hamilton, Ontario: Henry Vernon & Sons), 64.

²⁹ PAMA, Peel County Council Minutes for 1908. References to C.J. Wheelock as Peel County Engineer.

³⁰ *A History of Peel County To Mark Its Centenary* (The Corporation of the County of Peel: November 1967), 134. This publication notes Newton Powell served as Peel County Engineer from 1920-1937; however, the obituary for C.R. Wheelock reports he was Peel County Engineer until his death in 1925.

³¹ PAMA, Township of Caledon Council Minutes (May 21, 1912), 165.



C.R. Wheelock died at his home on Third Avenue, Orangeville, on June 5, 1925. His death certificate noted he was 61 years of age and his profession was “Surveyor”. He was noted as the Treasurer of the County of Dufferin and Engineer of the Counties of Dufferin and Peel”.³² His obituary noted,

*His training as a civil engineer and his special knowledge of road problems and methods of road construction made him a particularly valuable public servant and one whose opinion and expert advice will be seriously missed by the county councils of Peel and Dufferin as well as many of the township councils in these and adjoining counties. Deceased was a recognized authority on road construction and had much to do with the preparation of the plans for county and provincial highways in Dufferin and Peel. He took keen interest in the activities of the Ontario Good Roads Association, being a Past President and member of the Executive of that organization. His geniality and affable good nature made the late Mr. Wheelock a man among men.*³³

Attending his funeral in Orangeville, were many Dufferin County officials as well as Peel County officials including former and sitting township reeves from Streetsville, Port Credit, Toronto Gore, Albion, Chinguacousy and the Peel County Warden, County Treasurer, the Clerk, County Good Roads Superintendent. He is buried in Forest Lawn Cemetery, Orangeville, Dufferin County.³⁴

Uriah W. Christie

Uriah Wesley (Wes) Christie seems to have been born in Hanover, Ontario on November 22, 1872, to parents Robert Christie and Elizabeth Ford Curtis. Robert Christie was a lumber merchant in Chesley, Ontario. In 1891 and 1901, Christie lived with his family in Sullivan Township, Grey County. Uriah W. Christie was employed as a teacher for a number of years before undertaking training in civil engineering at the University of Toronto, where he graduated in 1906. Following his graduation, he worked with the federal government. Mr. Christie was a member of the Association of Ontario Land Surveyors.³⁵

Christie married Rebecca (Reba) Machin in September 1908 in Oxford County. His marriage certificate indicates his profession was “Dominion Land Surveyor” and his usual abode at the time of his marriage was in Ottawa. Christie appears to have moved to Orangeville, Ontario around 1911.³⁶ Around 1914, he joined C.J. Wheelock in a partnership known as Wheelock and Christie, Engineering Consultants. The 1921 Census notes Uriah Christie lived in Orangeville. His profession was noted as “Engineer”. The partnership ended with Wheelock’s death in 1925. Christie then formed a partnership in an engineering firm with R.L. Beatty, which operated as Christie and Beatty. Mr. Christie was appointed County Engineer and County Road Superintendent for Dufferin County in 1925, a position he held until his death

³² “Chas. R. Wheelock, County Treasurer, Called Away on Friday Evening”, *The Orangeville Banner* (June 11, 1925), 2.

³³ Ibid.

³⁴ Ibid.

³⁵ *Minutes of the Twenty-fifth Annual Meeting of the Association of Ontario Land Surveyors* (22 February 1917), 18, 184 and 210.

³⁶ AO, Registration of Death #012509, Dufferin County, Orangeville, March 10, 1932, Uriah Wesley Christie.



at the age of 59 years. He died at his home in Orangeville on March 10, 1932.³⁷ At the time of his death his profession was noted as civil engineer for Dufferin County. Mr. Christie is buried in Forest Lawn Cemetery, Orangeville, Dufferin County. His partner J.E. Beatty succeeded Christie as County Engineer for Dufferin County in May 1932.³⁸

Known bridge projects in the County of Wellington associated with U.W. Christie and Christie & Beatty include:

- 1921, MacPherson Bridge (East Garafraxa Bridge 7), 12th Line, U.W. Christie, double concrete bowstring arch;³⁹
- 1929, Keldon Bridge (Hooker Bridge), Sideroad 27-28, Keldon, Christie and Beatty, concrete bowstring arch;⁴⁰ and
- c1929, Jonston Bridge (Amaranath Structure No. 12), Town of East Garafraxa, Christie and Beatty, two span tied, concrete bowstring arch.⁴¹

3.2.7 Charles Mattaini, Builder

The Township of Caledon Council Minutes for 1915 record a payment to builder Charles Mattaini for services in the construction of the bridge on Lot 3, 1st Line East, namely, Kennedy Road Bridge, Bridge No. 1. Mattaini was a well-known bridge builder in Wellington County in the early 20th century. He also undertook bridge work in the other counties and townships.

Charles [Carlo] Borromeo Mattaini was born in Vergiate, Lombardy, Italy in February 1874. He immigrated to Canada in 1896, living with his sister Assumpta Mattaini and her husband Romeo Landoni in West Garafraxa Township, Wellington County. Brothers Romeo and Faustino Landoni and Faustino's wife Carolina had emigrated from Italy to Canada to live with their uncle Luigi [Louis] Landoni earlier in 1886. Romeo Landoni married Assumpta Mattaini in 1890.

Family history recounts that after Charles Mattaini arrived in Canada, he was employed in the brickyard of Luigi Landoni located on the 6th Line, West Garafraxa Township. Mattaini then worked for Louis Martinoni of Everton, building a barn foundation for William Jackson at the 7th Line and Highway 24, Eramosa Township. From 1898 to 1903 Mattaini established a construction business. He advertised in the Fergus Paper (1903) that his company built all type of buildings and construction projects, in particular barn foundations, cisterns, water troughs, culverts, bridges, sidewalks, etc. During this period he bought the old Melville Church building on Shiloh Street, Fergus, and used the building as a barn/stable for his horses and equipment.⁴² Between 1900 and 1929 Charles Mattaini was responsible

³⁷ AO, Registration of Death #012509, Dufferin County, Orangeville, March 10, 1932, Uriah Wesley Christie.

³⁸ *The Orangeville Citizen*, "Dipping into the Past", 75 YEARS AGO Thursday, May 5, 1932.

Access: --<<http://orangeville.our-hometown.com/news/2007-05-03/columns/029.html>> (October 2014).

³⁹ Heritage Resources Centre, *Arch, Truss & Beam* (March 2013), 321.

⁴⁰ *Ibid.*, 329.

⁴¹ *Ibid.*, 336.

⁴² WCMA, A1990.17 file 36, item 1: Builders of Wellington County by Mrs. Edith A. Mattaini of Fergus, April 26, 1979.



for a great deal of the bridge construction in Wellington County, employing as many as fifty men in his construction company.⁴³

The Census Return (1901) records that 16-year old Marie Landoni resided with her parents Faus [Faustino] and Carolina Landoni in East Garafraxa Township. Charles Mattaini married Marie Landoni in Arthur in 1903. The Mattaini family settled in Fergus, Ontario. The Census Return (1911) records their sons Charles, France and Neil were born in June 1906, 1908 and 1910, respectively. In total they had seven children. Charles Mattaini died in 1947 and Maria Mattaini in 1970, and both are buried in Fergus, Ontario. Mattaini's business ledgers list many construction projects undertaken by his company between 1908 and 1928, many of which were Wellington County and local bridge structures. Family history states Mattaini was involved in the construction of over sixty concrete bowstring arch bridges throughout Ontario.⁴⁴ It is also stated that Mattaini built over 70 concrete reinforced bowstring arch bridges and culverts in Wellington and Waterloo counties between 1902 and 1930.⁴⁵ He also worked in Saskatchewan in 1910, and in 1921.

Mattaini's clients included such municipalities as Clifford, Fergus, Orangeville, Palmerston, the townships of Arthur, Erin, Eramosa, Minto, Nichol, West Garafraxa, and the County of Wellington. Mattaini also worked for the Beatty Bros., of Fergus on several occasions. He built the Long Point Lighthouse in Port Dover (1915-16).⁴⁶ According to his family, Charles Mattaini had his bridge crew camp at the construction site, with some taking their meals at local farmhouses, and others at the camp. Mattaini is also known for allowing the job foremen to sign their name in the wet concrete at the end of the construction project. Mattaini often signed his bridges with his initials.⁴⁷

4.0 EXISTING CONDITIONS

A field review was undertaken by Michael Wilcox, ASI, on 31 March 2021 to conduct photographic documentation of the crossing for this report. Results of the field review, combined with the HIA and CHER, were 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 5 and photographic plates are contained in Appendix B.

The Kennedy Road Bridge has a generally north-south orientation and is located on Kennedy Road, 1.5 km north of Olde Base Line Road in the Town of Caledon, Region of Peel. This is a single span bridge carrying a single lane of vehicular traffic across the Little Credit River. The span measures 12.1 m and the overall deck length measures 13.42 m. The carriageway is 4.4 m wide and the overall width is 5.5 m (Plate 1 and Plate 2).

⁴³ LAC, Mattaini-Landoni family fonds 1871-1979. Mattaini Biography/Administrative History.

⁴⁴ Pat Mestern, "Bridges of Fergus' past include bowstring beauties, swinging and Pig Bridge" (*News Express*, November 3, 1999) 18-19.

⁴⁵ "Bowstring bridge builder", *Grand Actions. The Grand River Watershed newsletter*, Volume 17, Number 1 (January/February 2012).

⁴⁶ WCMA, Ms. Edith A. Mattaini, "Builders of Wellington County".

⁴⁷ Pat Mestern, "Gleanings from old account books", *Fergus-Elora News Express* (August 10, 2005), 19.



The bridge is a reinforced concrete solid slab structure, comprising cast-in-place concrete wingwalls, north and south abutments, parapet walls and handrails, and deck (Plate 3 to Plate 16). The parapet walls are approximately 13.4 m in length and one m in height. Both the inside and outside sides of the parapet walls have four recessed, decorative, rectangular panels. Each one measures 30.48 cm high by 2.48 m wide. Each panel is spaced 38 cm apart and 61 cm from the south and north ends of the wall. The thick top handrail projects over the wall and has a chamfer detail on its edges (Plate 17 to Plate 24).

The tops of both the east and west handrails have inscriptions etched into the concrete surface which date to the bridge's construction in 1915. While some of the inscriptions remain clear, many have been made indecipherable over time and require some guesswork to identify (Plate 25 to Plate 31). Images noting the location of these etchings on the structure are provided in Appendix B of the CHER (Unterman McPhail Associates 2015), and reproduced here in Plate 40 and Plate 41.

The vicinity of the bridge crossing is characterized by a straight gravel roadway with limited shoulders. Mature trees line the road on both sides of the bridge. There are residences on the east and west sides of the road, both north and south of the bridge. The posted speed limit on Kennedy Road is 60 km/hr. The bridge's load limit is 10 tonnes. The banks of the Little Credit River are heavily vegetated and include many willow trees (Plate 32 to Plate 33).

There have been no major modifications to the original bridge design. However, a 2013 inspection report notes that the structure underwent rehabilitation in 1950 without providing any additional details (Engineered Management Systems, Inc. 2013). Consultation with the Town of Caledon confirmed that there were no records in their files of any rehabilitations being completed in 1950 (HDR email communication following discussions with the Town of Caledon, 21 July 2021). A review of Township of Caledon Council Minutes from 1949-1951 note various payment amounts for bridge repairs, however they do not specify which bridge in the Township the repairs were completed on. Further, a review of the structure did not uncover any areas where obvious concrete rehabilitation was undertaken. Based on the absence of additional supporting physical or documentary evidence, it is unclear if work was undertaken in 1950 as noted in the OSIM report or if this is an error.





Figure 5: The location of the Kennedy Road Bridge overlaid on a current ortho image (Satellite imagery)

5.0 SUMMARY STATEMENT OF CULTURAL HERITAGE VALUE

The following draft statement of Cultural Heritage Value was prepared in the CHER (Unterman McPhail Associates 2015:25–26).

Name: Kennedy Road Bridge

Dating to 1915, the one-span, single lane Kennedy Road Bridge is an excellent example of a surviving concrete solid slab bridge from the early 20th century located within the Town of Caledon and Peel Region. The bridge retains its original design integrity, i.e., the concrete parapet wall handrail system, which clearly identifies it as having been built within the first two decades of the 20th century.

Built in 1915, the Kennedy Road Bridge is the oldest known surviving example of a single span bridge of its classification in the Town of Caledon and found in Peel Region and the second oldest surviving example of the three known examples of its bridge type found in the Town of Caledon and Peel Region. From a selected review of known bridge inventories, it can be concluded the Kennedy Road Bridge is an early surviving example of a 20th century, single span, concrete solid slab structure with regard to neighbouring watersheds.

The Kennedy Road Bridge has a direct association with the settlement history of the Township of Caledon and improvements in municipal infrastructure in the first part of the 20th century. A bridge probably spanned the Little Credit in the location of the existing bridge soon after the road was open to traffic in the mid 1800s. Most early bridges were built of timber and an early 20th century topographic map identifies the bridge as a wood structure in 1914. In 1915, Township Council determined the earlier wood bridge was deficient and contracted for its replacement. The existing concrete bridge was completed by the end of the year. The bridge has formed a component of the local road network for close to 100 years. In scale, materials and design, it conveys important aspects of road building activities of the period and the commitment of the Township of Caledon to the construction of well-designed and permanent road bridges.

The Kennedy Road Bridge is considered to be important in defining the rural and natural character of the area. It is physically, functionally, visually, and historically linked to its surroundings. It is one of probably a few structures built at the same location from the mid 1850s onwards to 1915 when the current bridge was constructed. The retention of its original design and concrete handrails provides a scenic quality to the existing rural roadscape. The single lane status of the bridge on Kennedy Road makes it a well-known local landmark.

Heritage attributes, i.e., character defining elements, of the Kennedy Road Bridge include:

- Its cast-in-place concrete solid slab design;
- The cast-in-place concrete abutments, wingwalls;
- Its one span;
- Its single traffic lane;
- Its cast-in-place solid concrete parapet wall handrail system with decorative recessed paneling, a rare surviving design element of early 20th century concrete bridges;
- All inscribed initials and dates located the top rail of the east and west handrails (Photos in Appendix B);



- Its importance in defining the rural character of the area; and
- Its landmark status due to its single lane design.

6.0 CONCLUSIONS

Built in 1915 and rehabilitated in 1950, the Kennedy Road Bridge is a one-span, concrete solid slab structure that carries a single lane of vehicular traffic over the Little Credit River, a tributary of the Credit River, in the Town of Caledon, Regional Municipality of Peel. The bridge was subject to a Cultural Heritage Evaluation Report (CHER) in 2015 (Unterman McPhail Associates 2015) as well as an Heritage Impact Assessment (HIA) in 2016 (ASI 2016), with subsequent updates in 2017 (ASI 2017). The CHER and HIA confirmed that the bridge is included on the Town of Caledon's *Inventory of Built Heritage Resources* (#1453) and is identified as an "extremely important feature" in the Town of Caledon's *Cultural Heritage Landscape Inventory* (Scheinman 2009). In 2020, the subject bridge was added as a Listed property on the Town of Caledon Heritage Register (Town of Caledon 2020), however, it is not Designated under Part IV of the *Ontario Heritage Act*. As the bridge is included as a non-designated structure in the Town of Caledon Heritage Register, Council approval is required for the removal of the bridge from the register prior to its proposed replacement.

The proposed replacement was selected as the preferred alternative for this undertaking due to the following structural and safety considerations (HDR email communication following discussions with the Town of Caledon, 21 July 2021):

- Poor condition of the main structural carrying members identified as requiring replacement through detailed deck condition survey;
- Safety issues related to the single-lane crossing;
- Safety issues relating to the non-redundancy of the structure which could lead to sudden collapse;
- Infeasibility of rehabilitation options available – condition of deck slab and corrosion potential of existing embedded reinforcing has surpassed state for which partial depth concrete repairs and/or an overlay would be recommended. Preferred solution would be full deck replacement, which would require the main heritage features (slab and barrier) to be replaced anyway.

Based on the results of archival research, an analysis of bridge design and construction in Ontario, field investigations, and application of Ontario Regulation 9/06, the Kennedy Road Bridge was determined to retain cultural heritage value (Unterman McPhail Associates 2015). Its heritage significance centres on its design, historical, and contextual value, its early construction date and associations with prolific builders Wheelock, Christie, and Mattaini, as well as general historic settlement in the region.

Given the identified cultural heritage value of the Kennedy Road Bridge and the preferred course of action being carried forward as part of the EA involving its complete removal and replacement to address significant structural issues and to ensure continued public safety, the HIA (ASI 2017) outlined a number of recommendations and mitigation measures, including the full recording and documentation of the bridge and its associated landscape prior to removal (Recommendation #6). The present report satisfies this recommendation. The HIA further suggested that consideration be given to a commemorative strategy (Recommendation #5c). Historical information and images provided in this



documentation report could provide the basis for an interpretive historical plaque/commemoration if this is deemed appropriate by the Town of Caledon. Further consultation with heritage staff at the Town of Caledon and the Credit Valley Conservation Authority should be consulted if a commemorative strategy moves forward.

This report should be filed with the heritage staff at the Town of Caledon, the Peel Art Gallery, Museum and Archives, the Ministry of Heritage, Sport, Tourism, and Culture Industries, and any other relevant local heritage stakeholders.



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APPENDIX A: HISTORICAL MAPPING



Figure 6: The location of the Kennedy Road Bridge overlaid on the 1859 Tremaine Map of the County of Peel (Tremaine 1859)



Figure 7: The location of the Kennedy Road Bridge overlaid on the 1877 *Illustrated Historical Atlas of the County of Peel* (Walker and Miles 1877)

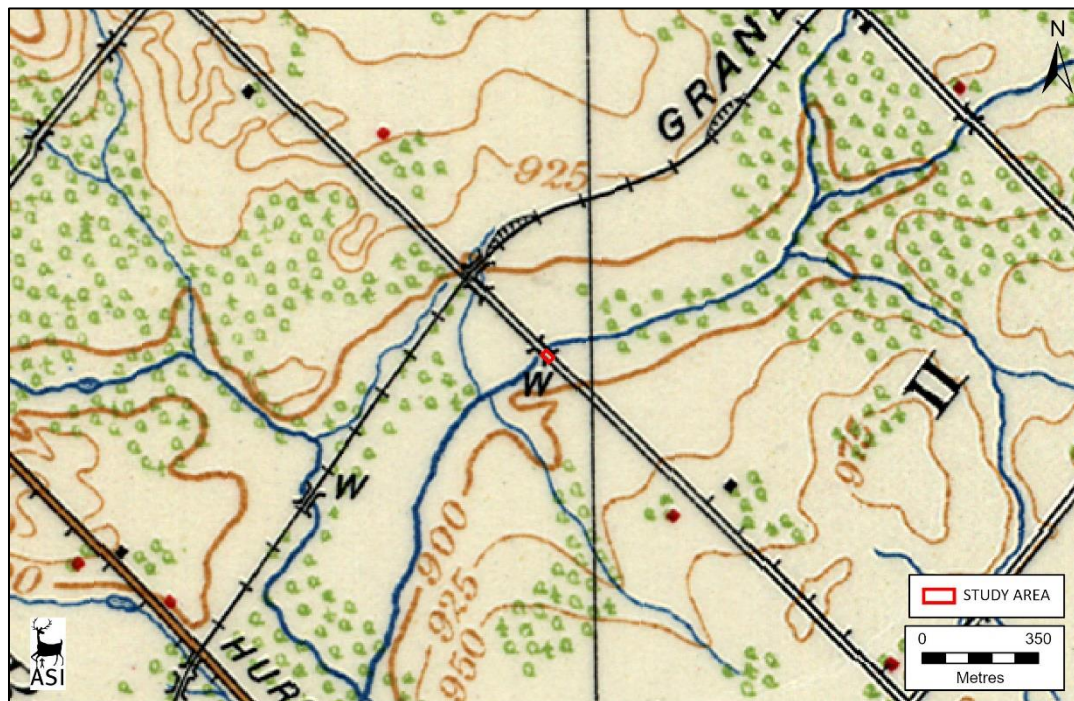


Figure 8: The location of the Kennedy Road Bridge overlaid on a 1914 topographic map, Bolton Sheet, with 'W' indicating a wooden structure (Department of Militia and Defence 1914)



Figure 9: The location of the Kennedy Road Bridge overlaid on 1954 aerial photograph (Hunting Survey Corporation Limited 1954)

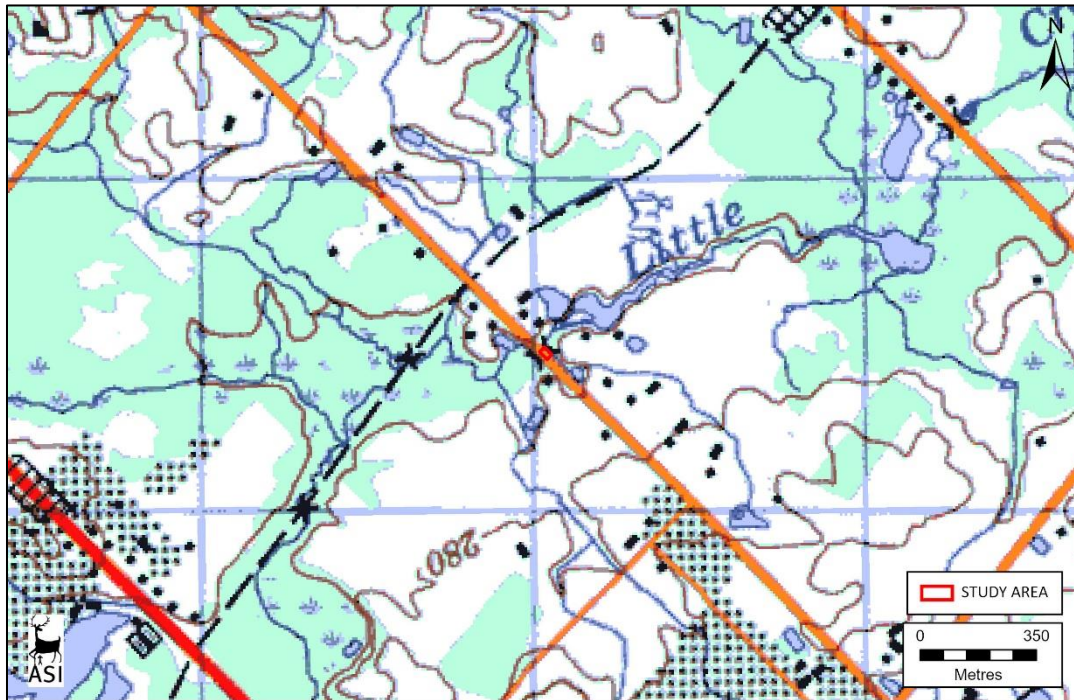


Figure 10: The location of the Kennedy Road Bridge overlaid on a 1994 topographic map, Bolton Sheet (Department of Energy, Mines and Resources 1994)

APPENDIX B: PHOTOGRAPHIC DOCUMENTATION

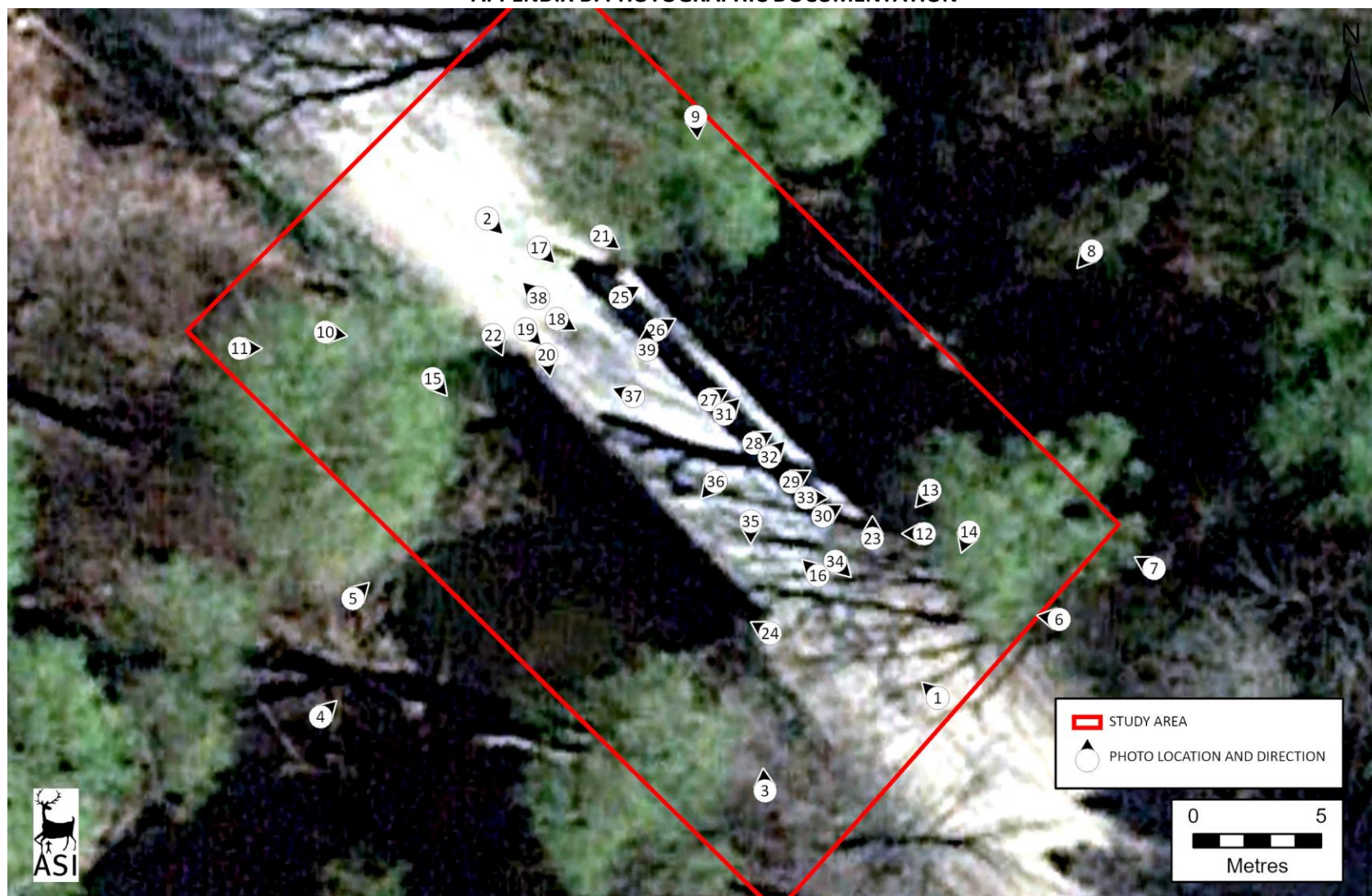


Figure 11: Photo Location Map



Plate 1: South approach of the Kennedy Road Bridge, looking north



Plate 2: North approach of the Kennedy Road Bridge, looking south



Plate 3: Oblique view of the Kennedy Road Bridge from the southwest, looking northeast



Plate 4: View of the Kennedy Road Bridge from the west, looking east



Plate 5: View of the
Kennedy Road
Bridge, looking east



Plate 6: Oblique
view of the Kennedy
Road Bridge from
the southeast,
looking northwest



Plate 7: View of the Kennedy Road Bridge east parapet wall and north abutment, looking northwest



Plate 8: View of Kennedy Road Bridge, looking west



Plate 9: Oblique view of the Kennedy Road Bridge from the northeast, looking southwest



Plate 10: Oblique view of the Kennedy Road Bridge from the northwest, looking southeast



Plate 11: View of the Kennedy Road Bridge from the northwest, looking southeast



Plate 12: View of the deck soffit of Kennedy Road Bridge, looking northwest



Plate 13: View of
the deck soffit of
Kennedy Road
Bridge, looking west



Plate 14: View of
south abutment
expansion gap from
the southeast
corner, looking west



Plate 15: View of the south abutment and wingwalls of the Kennedy Road Bridge, looking south



Plate 16: Kennedy Road Bridge road surface, parapet walls, and handrails, looking north



Plate 17: East
parapet wall and
handrail of the
Kennedy Road
Bridge, looking
south



Plate 18: East
parapet wall,
handrail, and
decorative panelling
of the Kennedy
Road Bridge, looking
southeast



Plate 19: West
parapet wall and
handrail of the
Kennedy Road
Bridge, looking
south



Plate 20: West
parapet wall,
handrail, and
decorative panelling
of the Kennedy
Road Bridge, looking
southwest



Plate 21: Northeast face of parapet wall, handrail, and hazard sign of the Kennedy Road Bridge



Plate 22: Northwest face of parapet wall, handrail, and hazard sign of the Kennedy Road Bridge



Plate 23: Southeast
parapet wall,
handrail, and hazard
sign of the Kennedy
Road Bridge



Plate 24: Southwest
parapet wall,
handrail, and hazard
sign of Kennedy
Road Bridge

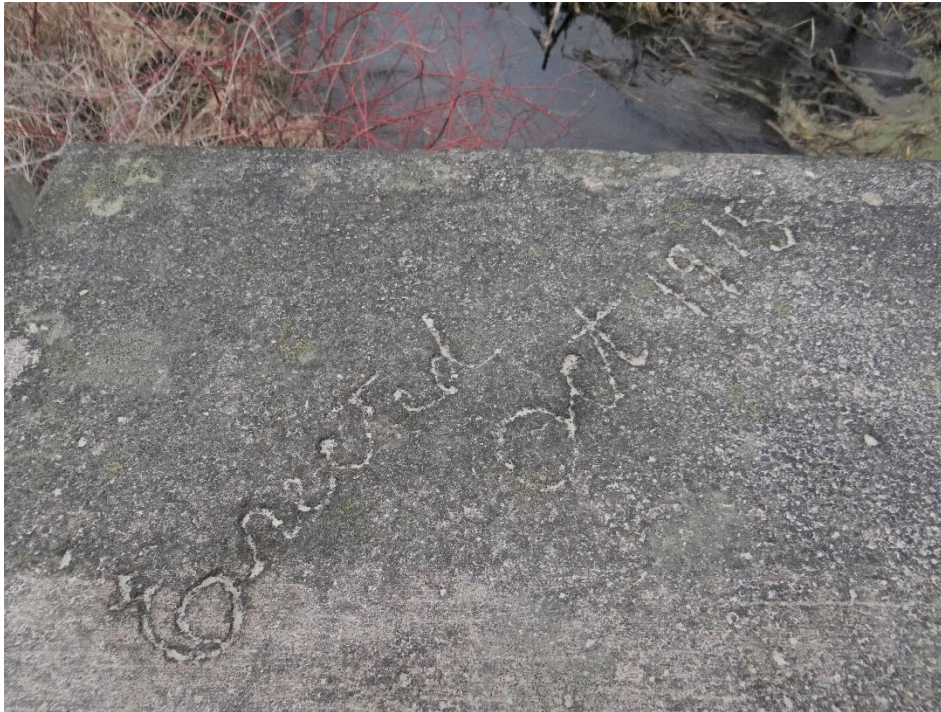


Plate 25: Etching
inscribed on east
handrail reading
"Erected Oct 1915"



Plate 26: Etching
inscribed on east
handrail possibly
reading "GMC"



Plate 27: Etching
inscribed on east
handrail possibly
reading "LPM^cB"



Plate 28: Etching on
east handrail
reading "CS"



Plate 29: Etching on
east handrail
reading "HB"



Plate 30: Etching on
east handrail
reading "SCH 1915"



Plate 31:
Indecipherable
etching on west wall

Note that the CHER
suggests the etching
may read "EJMcB
1915"



Plate 32: View
looking east from
the Kennedy Road
Bridge



Plate 33: View
looking southeast
from the Kennedy
Road Bridge

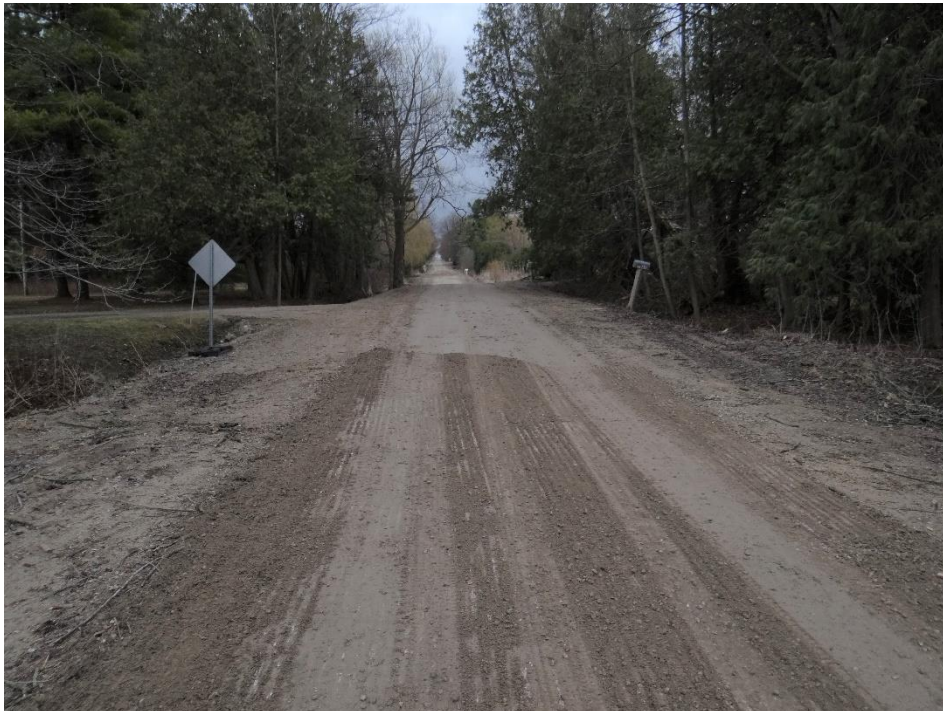


Plate 34: View
looking south from
the Kennedy Road
Bridge



Plate 35: View
looking southwest
from the Kennedy
Road Bridge



Plate 36: View
looking west from
the Kennedy Road
Bridge



Plate 37: View
looking northwest
from the Kennedy
Road Bridge



Plate 38: View
looking north from
the Kennedy Road
Bridge



Plate 39: View
looking northeast
from the Kennedy
Road Bridge



Plate 40: East
handrail (north left)
showing the
approximate
locations of the
various inscriptions
(Unterman McPhail
Associates 2015
Appendix B)



Plate 41: West handrail (south left) showing the approximate locations of the inscriptions (Unterman McPhail Associates 2015 Appendix B)

APPENDIX C: KNOWN BRIDGE PROJECTS ASSOCIATED WITH C.R. WHEELOCK AND/OR WHEELOCK & CHRISTIE

Peel Region

- 1908, C.R. Wheelock, bridge work in Albion and Chinguacousy Townships;⁴⁸
- 1915, Kennedy Road Bridge, concrete solid slab, Caledon Township, Wheelock & Christie;
- 1920, County Engineer re: Port Credit Bridge⁴⁹; and
- 1921, boundary bridge between Caledon and Orangeville, Wheelock & Christie.⁵⁰

Wheelock may have been associated with the design of the following additional two bridges in Caledon since he was acting as the Peel County Engineer at the time of their construction.

- 1910, McLaren Bridge, continuous concrete solid slab; and
- 1920, Winston Churchill Boulevard, concrete solid slab.

Dufferin County

- 1919, Amaranath Street Bridge (Dufferin Bridge No. 2), Wheelock & Christie double concrete bowstring, demolished 2002.⁵¹

Wellington County

- 1922, Haws Bridge No. 2 (East Garafraxa Bridge 6), Wheelock & Christie double concrete bowstring, demolished 1987;⁵²
- 1922, ELGV #2 (Turner Bridge), Wheelock & Christie, concrete bowstring arch, demolished 1987.⁵³

⁴⁸ PAMA, Peel County Council Minutes (1908), 111, 113.

⁴⁹ Ibid., 167.

⁵⁰ PAMA, Peel Council Minutes (November 25, 1921), 166.

⁵¹ Heritage Resources Centre. Arch, Truss & Beam: The Grand River Watershed Heritage Bridge Inventory (March 2013), 428.

⁵² Ibid., 427.

⁵³ Ibid., 428.



Kennedy Road Single Lane Bridge (Structure B260-64020) - Assessment Chronology

Year	Organization/Consultant	Description of Work Undertaken/Completed	Details
2003	Unknown	OSIM	Ontario Structure Inspection Manual (OSIM)
			Comment: Bridge functionally inadequate & should be replaced
2007	RJ Burnside	1 st EA started	Environmental Assessment (EA) was awarded to RJ Burnside
2008	Town of Caledon	EA Public Consultation	5/28/2008
	Town of Caledon	Staff Report PWE 2008-036	9/16/2008
			Study Recommendation: The rehabilitation of the structure as a single lane vehicular bridge
2009	Town of Caledon	BHRI completed	Bridge included on Built Heritage Resources Inventory (Record Number: 1453)
	RJ Burnside	EA completed	5/6/2009
	EMSI	OSIM	Preferred option: Rehabilitation
2013	EMSI	OSIM	Comment: Replacement is appropriate
2014	McIntosh Perry	Deck Condition Survey	Comment: Replacement is recommended
	Unterman McPhail Associates Heritage Resource Management Consultants	CHER	Cultural Heritage Evaluation Report; Recommendation: bridge has sufficient cultural heritage value to merit designation under OHA
2015	IBI	2 nd EA started	Environmental Assessment (EA) was awarded to IBI
	EXP	OSIM	Comment: Major Rehabilitation or Replace in 1 to 2 years (Bridge Condition Index: 55.45)
2016	Town of Caledon	PIC	6/29/2016 (Public Information Centre was held)
	ASI	HIA	Heritage Impact Assessment (HIA) completed by ASI; Outlined mitigation strategies from preferred Retention/Restoration through to Documentation & Commemoration if retention not physically feasible
2017	GHD	OSIM	Comment: Replace the bridge (Bridge Condition Index: 55.45)
	IBI	EA Project File Report (versions 1 & 2)	Comment: Replace the bridge structure

2018	IBI	EA completed Project File Report (versions 3, 4 & 5)	6 alternatives assessed. Preferred Alternative: Replace the existing bridge with a two lane bridge
			Recommended mitigation options: replication of the appearance of the heritage bridge in the new design; commemoration
			Rehabilitation option is not feasible since any attempt to repair the bridge deck will likely result in the complete replacement of the superstructure (deck and parapet walls).
			There is extensive deterioration of the deck and the structure is functionally deficient in load carrying capacity and width, and there would be a load limit in place
2019	GHD	OSIM	Comment: Replace the bridge (Bridge Condition Index: 51.15)
	Engineering Department	2020 Budget	Detail Design budget was approved for Kennedy Road Bridge replacement structure (2020 Bridge & Culvert EA and Detailed Design program)
2020	Council	Bridge listed on Heritage Register	5/26/2020
			The bridge is listed on municipal Heritage Register as a non-designated property under section 27 (3) of the Heritage Act
			Council Resolution Approving Inclusion on Register: 2020-91
	Engineering Department	Detail Design Tendered/Awarded	RFP 2020-83 Bridge and Culvert Environmental Assessment and Detailed Design
			Tender Published: 6/19/2020
			Bid Closing: 7/15/2020
			Bid Award: 9/2/2020
2021	GHD	OSIM	Detail Design awarded to RJ Burnside
	RJ Burnside	Detailed Design	Comment: Replace the bridge (Bridge Condition Index: 49.89)
	ASI	CHDR	60% Detailed design is ready
			Cultural Heritage Documentation Report completed (Dec 2021)

4.4 Summary of the Evaluation of Alternatives

4.4.1 Alternative 1: Do Nothing

Though this alternative does not negatively impact the cultural heritage features identified in **Section 3.2**, and has minimal impacts to the natural heritage features as detailed in **Exhibit 4-2**, it was screened out as this approach would not address the safety and design deficiencies identified in the Need and Justification statement for this study. There would be an ongoing decrease in the load bearing capacity of the bridge, ultimately requiring the structure to be closed. There would be a safety issue concerning the lack of the approach guardrail and increased maintenance of the bridge.

4.4.2 Alternative 2: Remove Existing Bridge

This alternative involves the demolition and removal of the bridge. It would negatively impact the identified cultural heritage resource. There would be minor temporary disruption of fish habitat and disturbance to the channel bed required to remove bridge. Cul-de-sacs would need to be constructed on either side of the creek to allow vehicles, including emergency services and road maintenance vehicles, to turn around. Property would need to be acquired to build the cul-de-sacs. This option creates a gap in the road network and traffic would be re-routed to Hurontario Street or Heart Lake Road.

In consultation with Caledon Fire and Emergency Services and Peel Region Paramedic Services (see **Section 6.2.1**), response times and property access would be impacted by the removal of the bridge. Therefore this alternative was screened out from further consideration.

4.4.3 Alternative 3: Rehabilitate Existing Bridge - Vehicular

This alternative consists of rehabilitating the existing bridge for vehicular traffic. There would be no cultural heritage impact, given that alterations would be sympathetic to heritage attributes. Minor temporary disruption of fish habitat and disturbance to channel bed would be required to access bridge underside for repairs.

The bridge would remain as a single lane. However the following was noted in **Sections 2.6.2** and **3.11**, summarized below:

- The corrosion potential survey indicates that there is a 90% probability that corrosion is occurring throughout the entire top layer of reinforcing steel in the bridge deck;
- The deck soffit is in poor condition with extensive deterioration;
- Any attempt to repair the bridge deck will likely result in the complete replacement of the superstructure (deck and parapet walls); and
- The original construction plans of the bridge, when it was built in 1915, are not available. These are necessary for rehabilitation.

In summary, there is extensive deterioration of the deck and the structure is functionally deficient in load carrying capacity and width, and there would be a load limit in place. Therefore this alternative was screened out from further consideration.

4.4.4 Alternative 4: Rehabilitate Existing Bridge – Pedestrian Only

This alternative would involve closing the bridge to vehicular traffic and leaving it open for pedestrians to cross. A change in use would result in alterations to the functionality of the cultural heritage resource, as there is a change in the original use of the structure. Minor

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temporary disruption of fish habitat and disturbance to the channel bed would be required to access the bridge underside for repairs.

As detailed in **Alternative 2**, cul-de-sacs would need to be constructed on either side of the creek to allow vehicles to turn around. Property would need to be acquired to build the cul-de-sacs. This option creates a gap in the road network and traffic would be re-routed to Hurontario Street or Heart Lake Road.

In consultation with Caledon Fire and Emergency Services and Peel Region Paramedic Services (see **Section 6.2.1**) response times and property access would be impacted by the closure of the bridge to vehicular traffic.

As outlined in **Alternative 3**, there is extensive deterioration of the deck and the structure is functionally deficient in load carrying capacity and width, and there would be a load limit in place. Therefore this alternative was screened out from further consideration.

4.4.5 Alternative 5: Replace Existing Superstructure

The replacement of the superstructure of the bridge was screened out because of the following serious structural defects with the existing bridge:

- The abutments exhibit medium to severe scaling at the waterline and rust staining and efflorescence from leakage through the joint between the deck and abutment;
- The wingwalls exhibit medium to severe scaling at the waterline, localized areas of spalled concrete and several vertical medium width cracks;
- A structural evaluation of the bridge substructure cannot be carried out since the original construction plans of the bridge are not available. It is not known if the abutment foundations have sufficient capacity to accommodate a new superstructure;
- The bridge would remain as a single lane structure; and
- There would be a load limit in place.

4.4.6 Alternative 6: Replace with a Two Lane Bridge

Replacing the existing bridge with a two-lane bridge was chosen as the preferred alternative because the new bridge:

- Would be in accordance to current design code.
- Would safely support all legal traffic loads.
- Is in accordance with the Guidelines for the Design of Bridges on Low Volume Roads as stipulated in the 'Exceptions to the Canadian Highway Bridge Design Code CSA S16-14 for Ontario, January 1, 2016.
- Provides for Emergency Management Service Access.
- Improves public safety: code compliant traffic barriers, approach guide rail and end treatment.
- Cyclists and pedestrians can safely cross using the shoulder/bike lanes.

There would be an impact to the cultural heritage resource through the removal of the existing bridge. However, there would be no significant impacts to the Kennedy Road streetscape provided that a new bridge incorporates a similar grade and concrete construction. See **Section 5.1** for bridge design alternatives. A concrete parapet wall similar to the barrier on the existing bridge will be provided to maintain a similar appearance by historically sympathetic design qualities, in accordance with the Heritage Impact Assessment.

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Temporary disruption of fish habitat and disturbance to the channel bed would be required to access and replace the bridge. There would be a permanent increase in the footprint of the bridge structure spanning the watercourse. However, there would be an opportunity to enhance the surrounding habitat.