



Report to Committee of the Whole

To: Mayor Linton and Members of Council

Report: IS2021-17

Prepared By: Adam Gilmore, Manager of Engineering

Date: 22 Nov 2021

RE: Bridge 16-WG Municipal Class Environmental Assessment Study: Preferred Alternative and Notice of Completion

Recommendation:

THAT the Council of the Township of Centre Wellington endorse Preferred Alternative No. 3 - Replace Existing Bridge with New Structure for the Bridge 16-WG Municipal Class Environmental Assessment Study as outlined in Report No. IS2021-17, dated November 22, 2021.

AND THAT Council directs staff to publish the Notice of Study Completion for the Bridge 16-WG Municipal Class Environmental Assessment Study in accordance with the requirements under the Environmental Assessment Act.

Summary:

N/A

Report:

The Township of Centre Wellington has conducted a study of Bridge 16-WG to identify and evaluate alternative solutions to address the advanced deterioration of the aging infrastructure. The study was conducted in accordance with Schedule B of the Municipal Class Environmental Assessment (MCEA) Study process (October 2000, as amended).

Bridge 16-WG is located within the former Township of West Garafraxa on the Fifth Line between Wellington Road 19 and Sideroad 15 in the rural area to the north of Belwood Lake at the location illustrated on the key plan within the Notice of Study Completion, included as Attachment #1.

Bridge 16-WG is a single lane, single span solid spandrel concrete-arch bridge over the Irvine Creek. The bridge was constructed circa 1910 with a deck width of 5.3m and a span of approximately 14.3m. Bridge 16-WG was closed to the public in March 2021 due to structural deterioration and public safety concerns.

A Notice of Study Commencement was sent to the project contact list and published in the Wellington Advertiser on May 20 and 27, 2021. An online Public Open House was

conducted between September 6, 2021 to September 24, 2021. The open house provided an opportunity for input and comments from the public and stakeholders.

The following alternative solutions were considered for Bridge 16-WG through the MCEA study:

- Alternative Solution 1 - Do Nothing;
- Alternative Solution 2 - Removal of the Existing Bridge;
- Alternative Solution 3 - Replace Existing Bridge with New Structure; and
- Alternative Solution 4 - Rehabilitate the Existing Bridge.

The following feedback was received from members of the public during the online Public Open House:

- "I have gone through the provided materials and presentation, in detail, and am fully on-board with a replacement (Alternative 3) and believe this to be the best alternative, too.";
- "In review of the options, it would seem that option 3 would be the sensible conclusion, but perhaps the design of the future bridge could include some of the aspects of the current bridge that make our little bridge so special.";
- "If it opens and does get redone, something needs to be done making the speed of vehicles slower."; and,
- "There has been a problem with people speeding across the bridge."

Based on the feedback received through the consultation process and on the evaluation assessment using technical (traffic operations, structural, safety, durability), natural environment, social and cultural environment, and financial criteria, the preferred solution was determined to be **Alternative 3 - Replace Existing Bridge with New Structure**. Note that feedback related to vehicle travel speeds across the bridge will be considered during the detailed design phase of the project.

A Cultural Heritage Impact Assessment (HIA) was completed as part of the MCEA Study to examine the potential impacts associated with each Alternative and make mitigation recommendations. The HIA concluded that Alternatives 2, 3, and 4 were feasible from a heritage perspective, and that Alternative 4: Rehabilitate the Existing Bridge was preferred from a heritage perspective; however, through technical review it was concluded that it would not be feasible from an engineering perspective to rehabilitate the existing bridge. The HIA noted that if Alternative 3: Replace Existing Bridge with a New Structure is selected as the preferred alternative, the existing spandrel arch structure should be commemorated through full recording and documentation of the structure, installation of a commemorative plaque at the site, and consideration should be given to sympathetic design elements during the detailed design stage of the project.

In June 2021 the project team presented an overview of the MCEA Study to the Heritage Centre Wellington Committee. The CHER and HIA were subsequently provided to the

Committee in September 2021. On October 12, 2021 the project team presented the findings of the MCEA Study and the preferred alternative solution to the Heritage Centre Wellington Committee. At the meetings with Heritage Committee, there was discussion about commemoration options to reflect the existing solid spandrel, concrete-arch bridge, and the project team indicated that these options would be explored during the detailed design stage of the project.

The draft Notice of Study Completion for the MCEA Study is included as Attachment #1. The Council presentation slides are included as Attachment #2. The full draft MCEA Study Project File Report including appendices is available on the Township's project website: <https://www.connectcw.ca/municipal-class-environmental-assessment-study-for-bridge-16-wg>

Next Steps

Pending Township Council's endorsement of the preferred alternative solution the project team will proceed to finalize the Project File Report, publish the Notice of Study Completion, and place the project on the public record for a 45 day review and commenting period. On completion of the MCEA Study, the project will proceed to detailed engineering design in 2022.

Corporate Strategic Plan:

Safe and Well Maintained Roads and Infrastructure

- Manage the flow of traffic in and through Centre Wellington
- Re-invest in the rural road system
- Continue to repair/replace bridges

Good Financial Management

Active and Caring Community

- Care for our Natural Environment
- Support the heritage of our community

Good Government

- Enhance communication and engagement with the public

Financial Implications:

The 2021 Capital Budget under the Dedicated Capital Levy bridge plan includes funding for the detailed design, tender and regulatory approvals/permits for the preferred Alternative 3 in 2022 with the construction budget for the replacement of Bridge 16-WG shown in 2023. Any required revisions to the project scope of work and budgetary cost estimates will be included in the 2022 and 2023 Capital Budgets.

Consultation:

This report was prepared in consultation with the project consultant team McIntosh Perry, the Chief Administrative Officer, Andy Goldie, and the Managing Director of Infrastructure Services, Colin Baker.

Attachments:

- [IS2021-17 - Attachment 1 - Notice of Completion](#)
- [IS2021-17 - Attachment 2 - Presentation](#)

Approved By:

Colin Baker, Managing Director of Infrastructure Services

Andy Goldie, Chief Administrative Officer



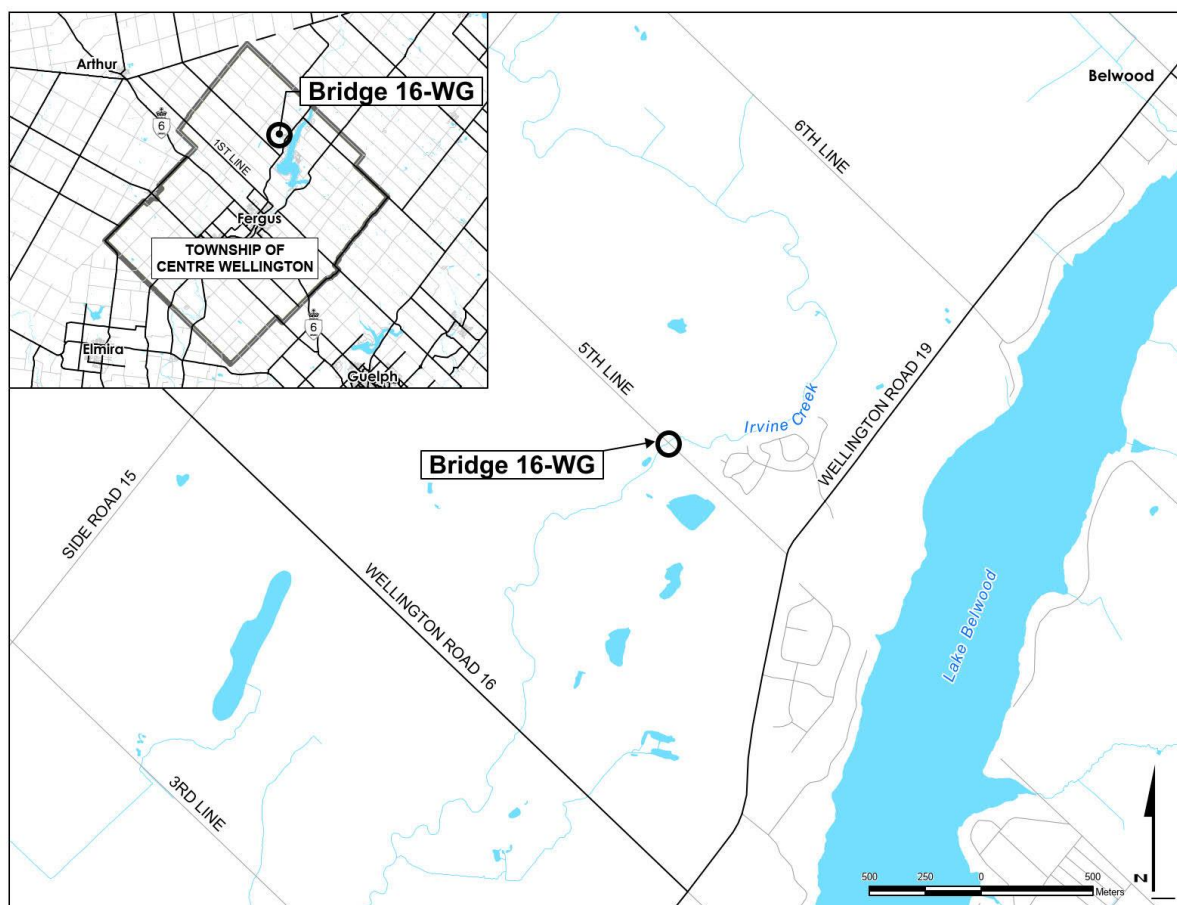
Notice of Study Completion

Municipal Class Environmental Assessment Study for Bridge 16-WG

The Project

The Township of Centre Wellington conducted a review of a bridge to address its advanced state of deterioration. The bridge (16-WG) is located within the former Township of West Garafraxa, and is illustrated on the key plan below. Bridge 16-WG is located on 5th Line between Wellington Road 19 and Sideroad 15 in the rural area to the north of Fergus. The study was conducted in accordance with Schedule B of the Municipal Class Environmental Assessment (EA) (October 2000, as amended) process.

Through consultation with agencies, the public, and Indigenous Communities, the preferred solution for Bridge 16-WG is replacement of the existing structure with a new structure.



Key Plan

Project File Report

A Project File Report (PFR) has been prepared to document the planning and decision-making process for this study. By this Notice, the PFR is being placed on the public record for a 45-day review period from Month Day, Year to Month Day, Year. The PFR is available for review on the Township's website at <https://www.connectcw.ca/municipal-class-environmental-assessment-study-for-bridge-16-wg>.

If you have any questions, comments or concerns regarding this study, please contact one of the Project Team members below by **Month Day, Year**:

Adam Gilmore, M.A.Sc., P.Eng.
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Township of Centre Wellington
1 MacDonald Square, Elora, ON N0B 1S0
519-846-9691 x 301
agilmore@centrewellington.ca

Lisa Marshall, P. Eng.
Consultant Project Manager
McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road, R.R. 3, Carp, ON K0A 1L0
1-613-852-1148
l.marshall@mcintoshperry.com

In addition, a request may be made to the Ministry of Environment, Conservation and Parks for an order requiring a higher level of study, or that conditions may be imposed, only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Request on other grounds will not be considered. Requests should include the requesters contact information and full name for the ministry.

Requests should specify what kind of order is being requested, how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. The request should be sent in writing or by email to the proponent and the following:

Minister of the Environment, Conservation and Parks
Ministry of Environment, Conservation and Parks
77 Bay Street, 5th Floor
Toronto, ON M7A 2J3
Minister.mecp@ontario.ca

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto, ON M4V 1P5
EABDirector@ontario.ca

Comments submitted to the Township of Centre Wellington for the purpose of providing feedback regarding this Municipal Class Environmental Assessment are collected under the authority of the *Environmental Assessment Act*. Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. Questions relating to the collection, use and disclosure of this information may be addressed to Adam Gilmore, Manager of Engineering at 519-846-9691 x301 or agilmore@centrewellington.ca

This notice was first issued on **Month Day, Year**.

McINTOSH PERRY



BRIDGE 16-WG

Schedule “B” Municipal Class Environmental Assessment
Committee of Whole Presentation of Preferred Alternative

November 22, 2021



Centre
Wellington

PURPOSE

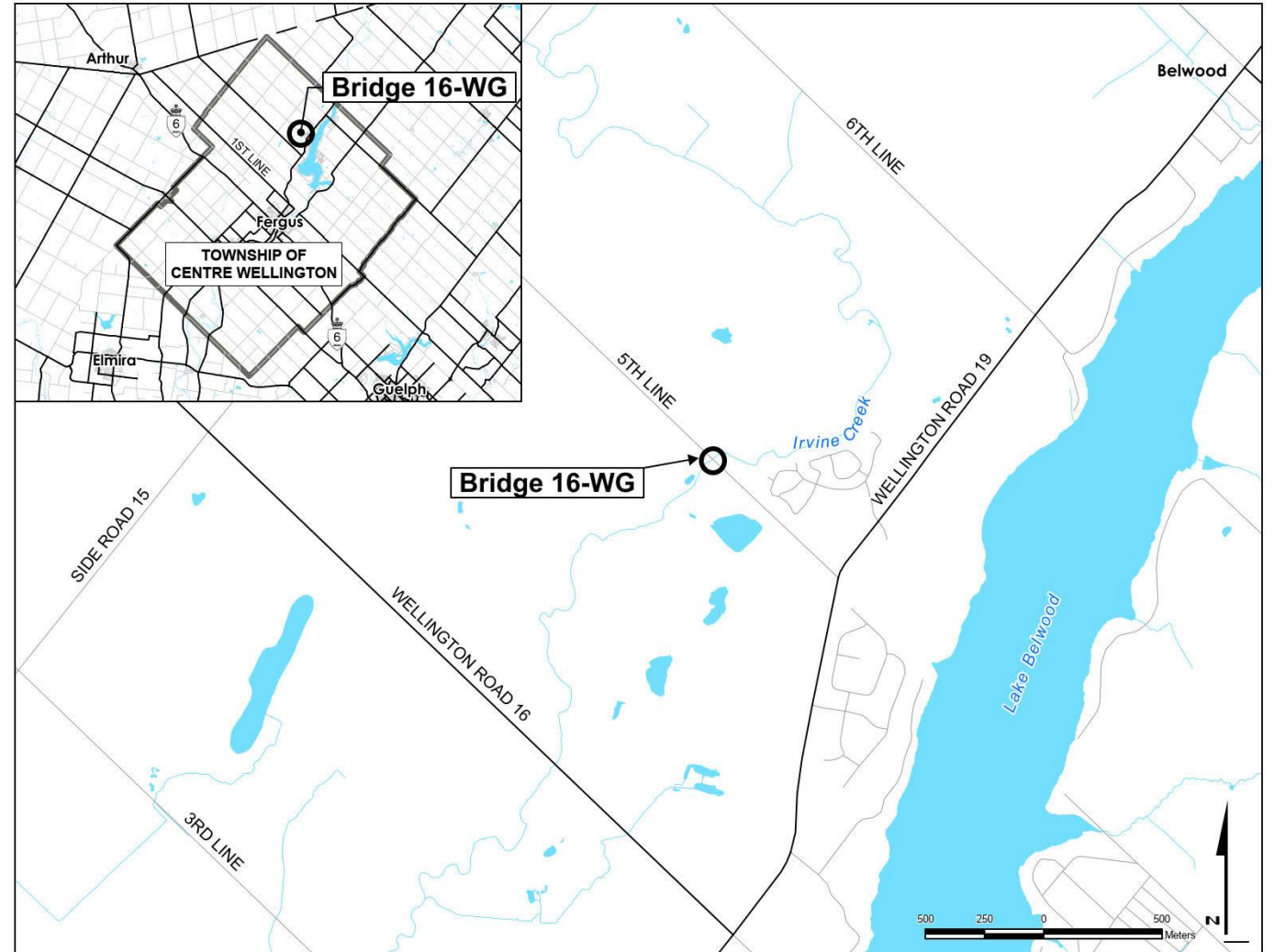
THAT the Council of the Township of Centre Wellington endorse Preferred Alternative No. 3 – Replace Existing Bridge for the Bridge 16-WG Municipal Class Environmental Assessment Study;

AND THAT Council directs staff to publish the Notice of Study Completion for the Municipal Class Environmental Assessment Study in accordance with the requirements under the Environmental Assessment Act.

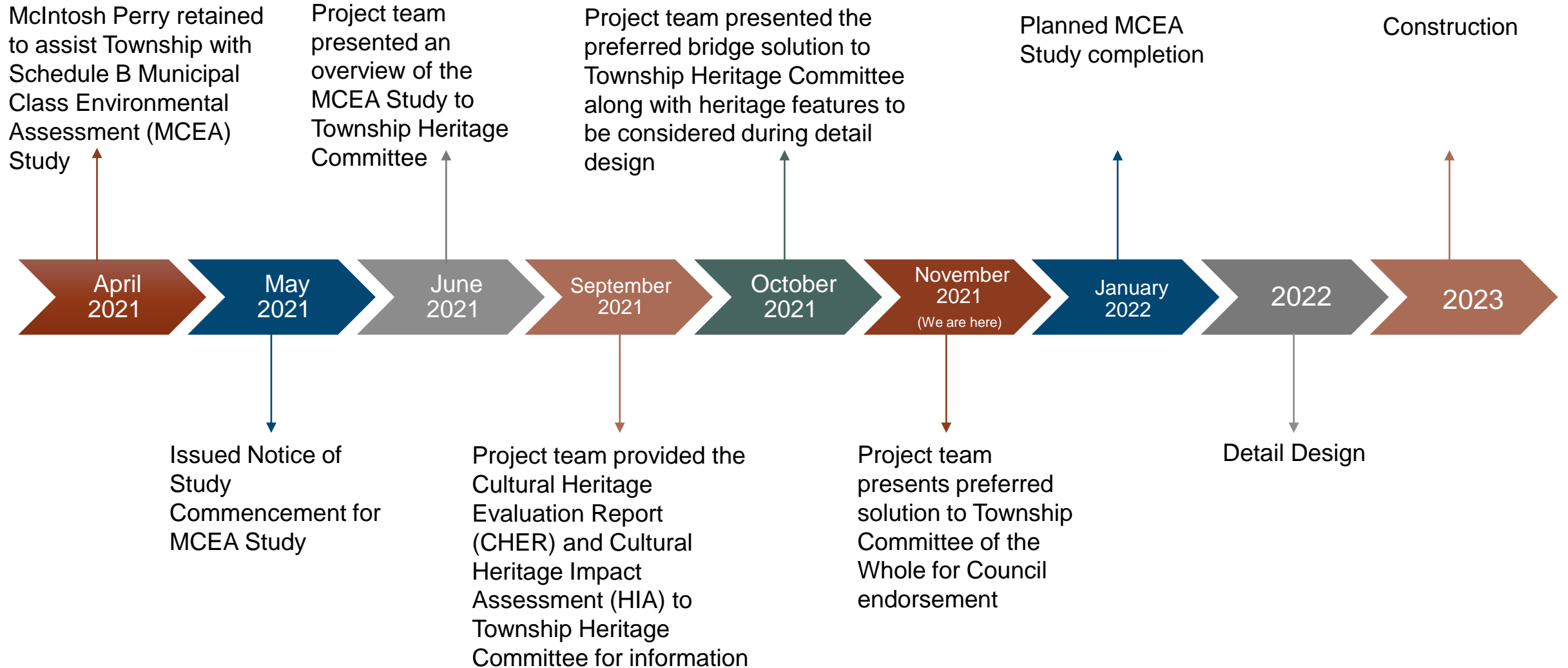
PROJECT STUDY AREA

The 16-WG Bridge is located in the former Township of West Garafraxa, now Township of Centre Wellington, Wellington County, Ontario.

The Bridge 16-WG spans over Irvine Creek, located on 5th Line between Centre Wellington Road 19 and Side Road 15.



PROJECT TIMELINE



SUMMARY OF CONSULTATION DURING MCEA STUDY

- Notice of Study Commencement – May 20, 2021
 - Project Contact List (Governing Agencies, Stakeholders, Indigenous Communities and Public)
- Consultation with Indigenous Communities
- Township Council & Heritage Committee Meeting – June 8, 2021
 - Presented overview of the project and studies being conducted.
- Online Public Information Centre – September 6 to 24, 2021
 - Presented the study process, evaluation of design alternatives, and elicit input.
- Heritage Committee Meetings – September & October, 2021
 - Presented 2021 CHER & HIA findings, evaluation of alternatives, and recommended alternative

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROCESS

The Bridge 16-WG Study has been carried out as a Schedule 'B' Municipal Class Environmental Assessment (MCEA) in accordance with the *Environmental Assessment Act*.

Please visit:

<https://municipalclassea.ca> for more information on the MCEA Process.

ALTERNATIVE SOLUTIONS TO THE PROBLEM/OPPORTUNITY STATEMENT

The following Alternative Solutions were developed and evaluated:

- **Alternative 1: Do Nothing**
- **Alternative 2: Removal of the Existing Bridge**
- **Alternative 3: Replace Existing Bridge with New Structure**
- **Alternative 4: Rehabilitate the Existing Bridge**



PROJECT STUDIES

Studies Completed by Township:

- Stage 1 & 2 Archaeological Assessment (January 2014)
- Cultural Heritage Impact Assessment (December 2013)
- Geotechnical Investigations (October 2013)

Studies Completed for MCEA:

- Natural Environment - Terrestrial and Aquatic Ecosystem Review
- Socio Economic Environment - Public Consultation and Land Use Review
- Cultural Heritage and Built Heritage Resources – Cultural Heritage Resource Evaluation and Cultural Heritage Impact Assessment
- Structural Review - Review of Suitable Structural Alternatives
- Drainage and Hydraulic Analysis

EXISTING STRUCTURAL CONDITION



- Built in 1910 (111 years old)
- 1977 inspection report noted 10 years of remaining life.
- 2012 inspection - retaining walls showed signs of displacement indicating parts of the bridge were moving.
- Load posted (5 tonnes) and overhead frames installed at the approaches – Fall 2017
- Bridge Closure - Spring 2021
- Rehabilitation is not feasible from a structural engineering perspective due to:
 - Existing concrete arch rib condition;
 - Continuous movement of the retaining walls and closed spandrel arch rib, and
 - Lack of as-built information.

SOCIAL/CULTURAL ENVIRONMENT EXISTING CONDITIONS



Cultural Heritage

- 2013 Cultural Heritage Impact Assessment (HIA) - Bridge met criteria for determining Cultural Heritage Value or Interest (CHIV) (under O.Reg. 9/06).
- May 2021 - Cultural Heritage Evaluation Report (CHER) completed and confirmed CHVI.
- Bridge 16-WG is a rare example of a solid spandrel, concrete-arch bridge from the early-20th century (c.1910).
- HIA was completed in July 2021, to examine the potential impacts associated with each Alternative Solution and make mitigation recommendations.

SOCIAL/CULTURAL ENVIRONMENT EXISTING CONDITIONS



Archaeology

- Stage 1 & 2 Archaeological Assessment – No archaeological findings.
- No further studies are not warranted.

Land Use

- Located within the Grand River Conservation Authority regulated area.
- Study area and directly adjacent lands are identified as Core Greenlands and Greenlands, with some recreational area to the east (i.e., Highland Pines Campground).



NATURAL ENVIRONMENT EXISTING CONDITIONS



Vegetation

- No rare species or vegetation communities were found.

Wildlife and Species at Risk

- Habitat found supports a variety of wildlife species, migratory birds & potentially Species at Risk (SAR)
- No nests were observed
- SAR known to be present within and adjacent to the study area include Barn Swallow, and Redside Dace.



Fish and Fish Habitat

- Irvine Creek is a coldwater tributary of the Grand River.
- Irvine Creek contains a variety of fish species including Brook Trout, and aquatic SAR (i.e., Redside Dace).

EVALUATION CRITERIA



Structural/Technical

- Safety / Traffic Operations
- Construction Staging / Duration
- Extension of Service Life



Natural Environment

- Environmentally Sensitive Areas
- Wildlife Habitats
- Fisheries/Aquatic Habitat
- Species at Risk



Social & Cultural Environment

- Socio-Economic Conditions
- Archaeological, Built Heritage & Cultural Heritage Features
- Construction Impacts
- Input during Consultation



Financial

- Capital Costs
- Operational and Maintenance Costs

ALTERNATIVE 1: DO NOTHING



PRO'S

- No construction related impacts.
- No terrestrial wildlife, groundwater or climate change impacts.
- Lowest capital cost due to minimal project scope.



CON'S

- Does not provide connectivity for traffic over Irvine Creek.
- Does not extend the service life and may pose significant structural engineering risks.
- Continued deterioration of Bridge may pose significant impacts to the natural environment.
- Not considered a viable alternative from a heritage perspective.

ALTERNATIVE 2: REMOVE BRIDGE & CONSTRUCT TURN AROUNDS



PRO'S

- Permanently addresses safety concerns with Bridge 16-WG.
- Provides turn around areas at Irvine Creek.
- No structural engineering risks.
- No anticipated natural environment impacts.
- Cost is second lowest and service life is unrestricted.
- Feasible from a heritage perspective with bridge conservation mitigation measures.



CON'S

- Does not provide connectivity for traffic over Irvine Creek.
- Removal of Bridge may impact emergency service response times.
- Potential longer route times for municipal services (i.e., garbage, snow removal).

ALTERNATIVE 3: REPLACE BRIDGE (PREFERRED ALTERNATIVE)



PRO'S

- Provides connectivity for traffic over Irvine Creek.
- Addresses traffic safety concerns by providing two (2) lanes over Irvine Creek.
- An anticipated 75 yr. extension of service life.
- Larger hydraulic opening to support better conveyance capacity.
- Feasible from a heritage perspective with bridge conservation mitigation measures.



CON'S

- Highest capital cost, more economical solution based on the anticipated extension of service life (i.e., 75 yrs.)
- Operational and maintenance costs are anticipated to be second highest.
- Potential grade raise may impacts to residential property entrances.
- Moderate construction related impacts.

ALTERNATIVE 4: REHABILITATE BRIDGE



- Reinstates connectivity for 5th Line traffic over Irvine Creek.
- No long-term impacts to emergency service response time.
- Most preferred option from a heritage perspective.



- Rehabilitation is not considered viable from a bridge engineering perspective due to the current structural condition.
- Does not address traffic safety concerns.
- Height & load postings may still be required after rehabilitation.
- Costs is second highest, however, least economical based on the extension of service life (approx. 15 yrs.).
- Existing bridge does not meet MTO hydraulic design criteria.

PUBLIC FEEDBACK FROM THE PROJECT OPEN HOUSE

"I have gone through the provided materials and presentation, in detail, and am fully on-board with a replacement (Alternative 3) and believe this to be the best alternative...."

"It would seem that option 3 would be the sensible conclusion, but perhaps the design of the future bridge could include some of the aspects of the current bridge that make our little bridge so special."

"If it opens and does get redone, something needs to be done making the speed of vehicles slower...."

"There has been a problem with people speeding across the bridge....."

RECOMMENDED TECHNICALLY PREFERRED ALTERNATIVE

Alternative 3 - Replace Existing Bridge with New Structure

- Best balance of benefits from a transportation/operations, technical/structural, as well as minimal impacts to natural and environment.
- New bridge will meet operational and safety standards (i.e., wider deck platform to allow for two-lanes of traffic)
- As per the 2021 HIA, Alternative 3 is feasible from a heritage perspective with the following considerations:
 - Cultural Heritage Resource Documentation Report;
 - Commemorative Plaque, and
 - Incorporation of Sympathetic Design Elements into New Structure.
- The Centre Wellington Heritage Committee will be involved during Detail Design to provide input on design and heritage mitigation strategies (i.e., preparation of a commemorative plaque).
- Upon Council endorsement of the recommended TPA, the advertisement and 45-day review period of the Project File Report will proceed.

KEY PROJECT MILESTONES

Milestone	Timeline
Committee of Whole Presentation of Preferred Alternative	November 22, 2021
Advertise Project File Report for a 45-day public review and comment period	December 2021
Prepare letter to Township indicating project eligibility to proceed to Detail Design	January 2022
Detail Design and Construction	Detail Design in 2022 Construction in 2023

THANK YOU FOR YOUR TIME!

We welcome your comments and questions.

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