

# ONLINE PUBLIC OPEN HOUSE



## SCHEDULE "B" MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT BRIDGE 16-WG

September 6, 2021 to September 24, 2021

McINTOSH PERRY



Centre  
Wellington

# ONLINE PUBLIC OPEN HOUSE OBJECTIVES

Thank you for your interest in the project. The purpose of this Online Public Open House is to provide the public and stakeholders with an introduction to the study process, existing conditions, alternative solutions and provide opportunity for input and comments.

Once you have reviewed the materials, please submit any comments or questions directly online, via email or by phone to one of the contacts listed at the end of the presentation by September 24, 2021. A member of the project team will respond to you directly.

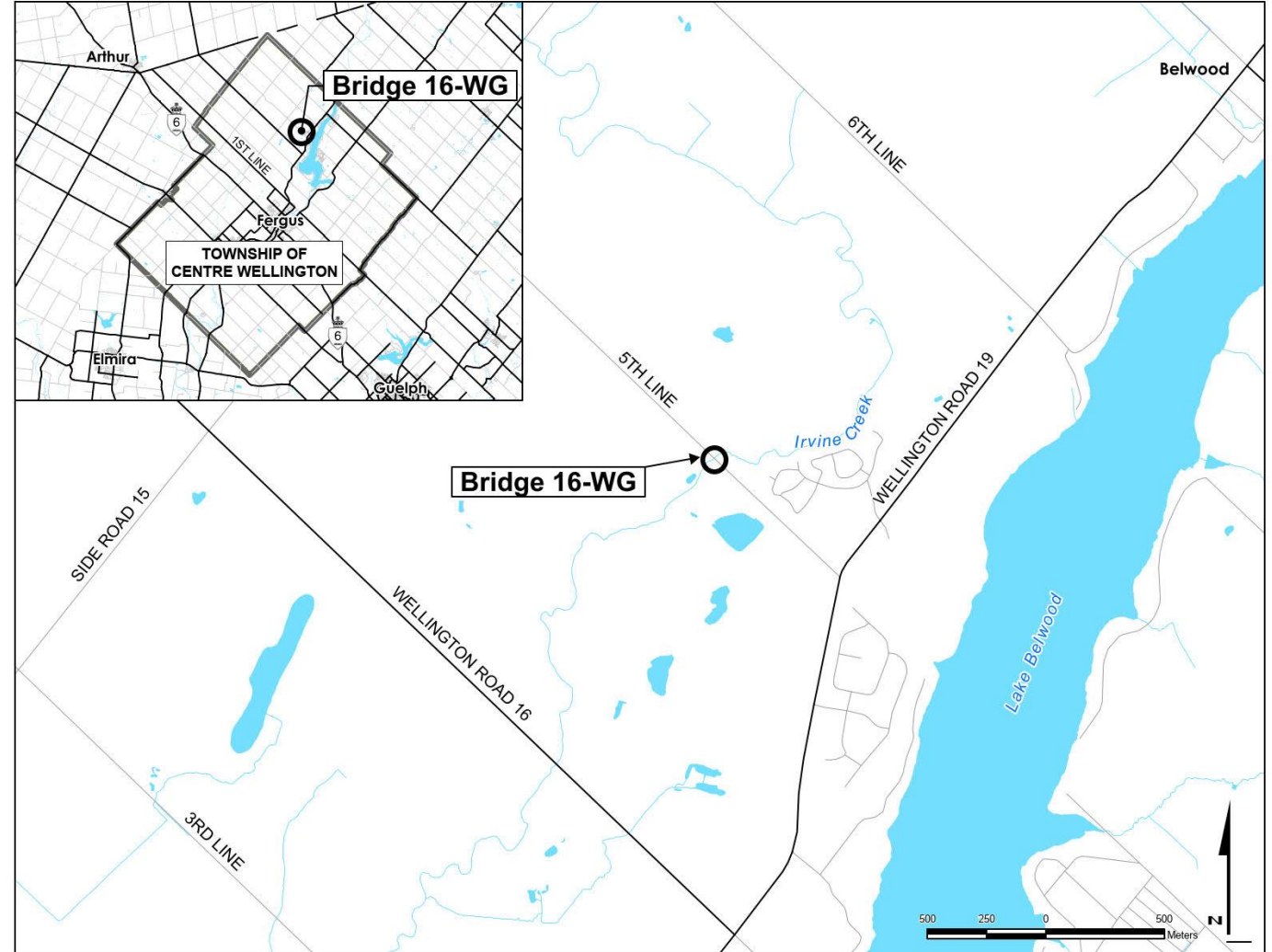


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# PROJECT STUDY AREA

The Bridge 16-WG 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 5<sup>th</sup> Line between Centre Wellington Road 19 and Side Road 15.



# STUDY PURPOSE

As per the Ontario Structural Inspection Manual (OSIM) biennial inspection in 2020, it was determined that overall, the bridge is in poor condition with advanced deterioration.

The existing Bridge 16-WG is currently closed for public use due to public safety concerns. The bridge serves as an important connection for traffic on 5<sup>th</sup> Line over Irvine Creek between Wellington Road 19 and Side Road 15

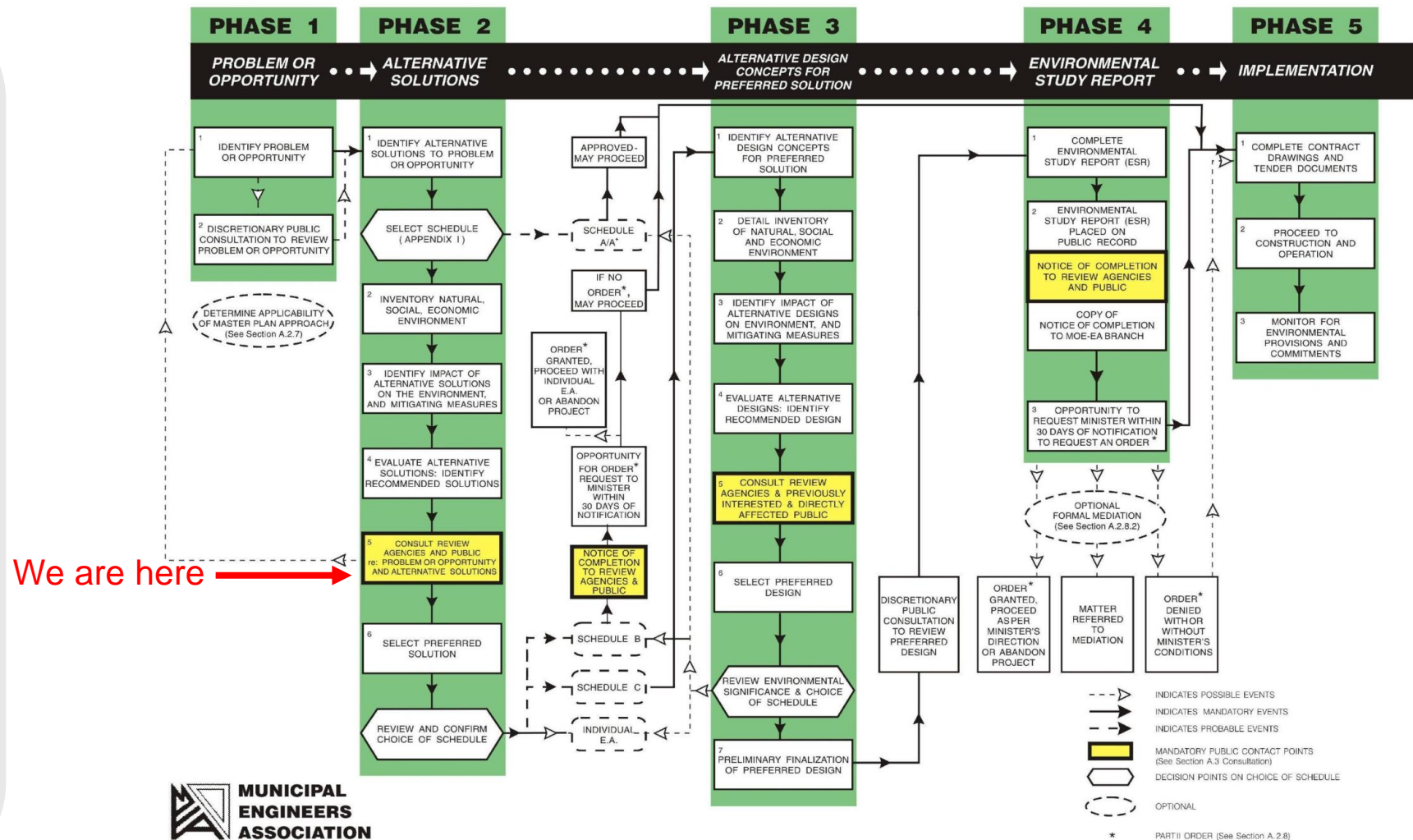
The Township of Centre Wellington is undertaking this Schedule “B” Municipal Class Environmental Assessment Study to identify and evaluate alternative solutions to address the aging infrastructure.

# MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROCESS

The Municipal Class Environmental Assessment Process (MCEA) is a process by which municipal infrastructure projects are planned in accordance with the *Environmental Assessment Act*. The MCEA gives due regard to protect the environment, impacts, and includes the involvement of affected stakeholders in the decision-making process.

Please visit:

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



Source: The process flow chart was adapted from the Municipal Class Environment Assessment documentation at [www.municipalclassea.ca](http://www.municipalclassea.ca).

Note: The current step of the Class EA process is highlighted in red.



# PHASE 1 – PROBLEM/OPPORTUNITY STATEMENT



Bridge 16-WG is in an advanced state of deterioration and has been closed for public use at this time. The existing bridge is also a single-lane with other functional and operational deficiencies. Therefore, the Township of Centre Wellington has the opportunity to identify and evaluate alternative solutions and determine a preferred bridge solution in accordance with the MCEA Process.

# PHASE 2 – ALTERNATIVE SOLUTIONS TO THE PROBLEM/OPPORTUNITY STATEMENT

To address the Problem/Opportunity Statement, the following preliminary Alternative Solutions have been developed, which will be evaluated after appropriate studies and consultation have been completed:

## Alternative 1: - Do Nothing

Involves leaving the existing bridge in place, in its deteriorating condition and continuing to restrict public access. Through the MCEA process this alternative acts as a benchmark for the other Alternative Solutions.

## Alternative 2: Removal the Existing Bridge

Removal of the existing bridge and construction of new turnaround areas at the east and west sides of Irvine Creek for traffic on 5th Line. This alternative would consist of not reinstating the 5th Line watercourse crossing.

## Alternative 3: Replace Existing Bridge with New Structure

Full removal and replacement of the existing bridge within the current location. As the intention is to provide a bridge that meets operational and safety standards.

## Alternative 4: Rehabilitate the Existing Bridge

Rehabilitate the existing Bridge 16-WG to meet engineering and public safety standards, reinstate the existing watercourse crossing.



# PROJECT STUDIES

## The following studies were completed previously by the Township:

### Archaeological Assessment

- Stage 1 & 2 Archaeological Assessment (January 2014)

### Cultural Heritage Landscapes & Built Heritage Resources

- Cultural Heritage Impact Assessment (December 2013)

### Geotechnical Investigations

- Geotechnical Investigations for soils information (October 2013)

## The following project studies have been undertaken within the Bridge 16-WG study area as part of this MCEA Study:

### Natural Environment

- Terrestrial Ecosystem Review
- Aquatic Ecosystem Review

### Structural Assessment

- Review of Suitable Structural Alternatives

### Cultural Heritage Landscapes and Built Heritage Resources

- Cultural Heritage Resource Evaluation
- Cultural Heritage Impact Assessment

### Drainage Investigations

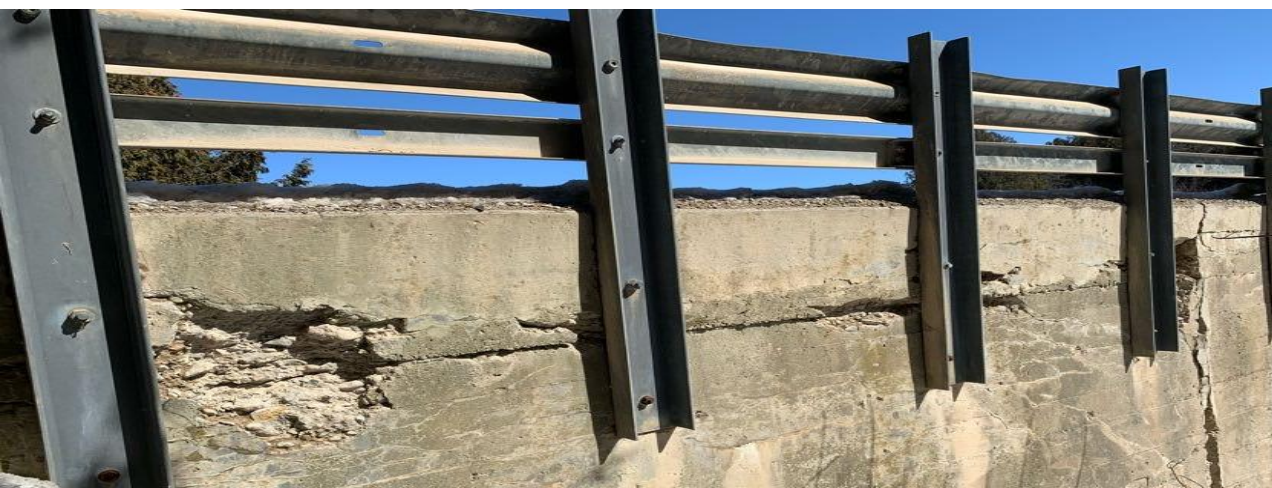
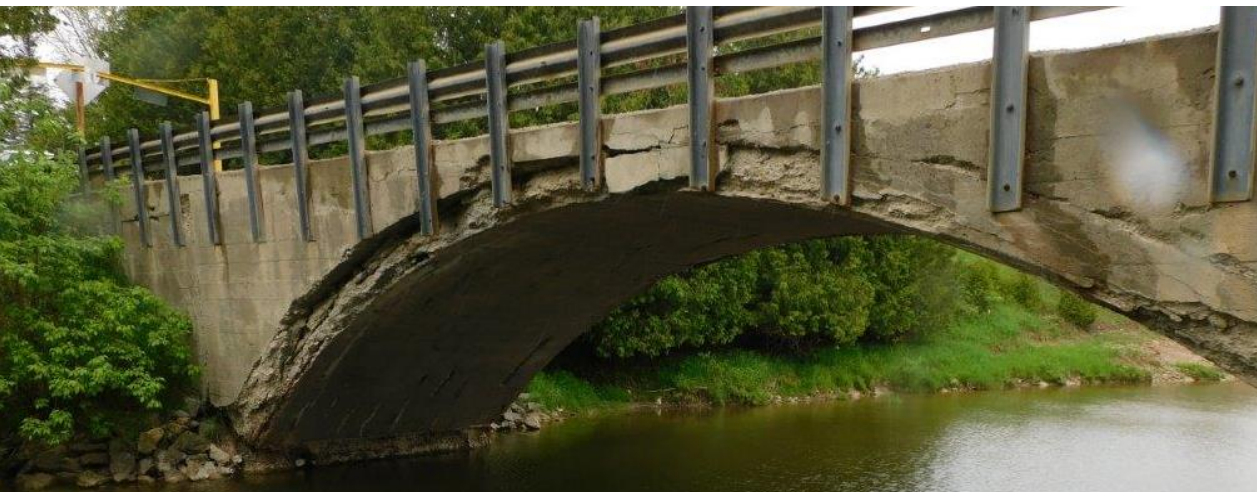
- Hydraulic Analysis

### Socio Economic Environment

- Public Consultation
- Land Use Review



# EXISTING STRUCTURAL CONDITION



## Structural Condition

- The bridge was built in 1910 (111 years old) and is beyond the end of its service life.
- In a 1977 inspection report, it was noted to have 10 years of remaining life.
- In a 2012 inspection report, it was recommended for replacement.
- During previous inspections, the retaining walls were shown to be displaced indicating that parts of the bridge were moving. Gauges were installed to track the amount of movement.
- In Spring 2021, the bridge was closed to traffic and the public due to safety concerns.



# CULTURAL HERITAGE RESOURCES

## Cultural Heritage

- A Cultural Heritage Impact Assessment (HIA) was completed for the study area in 2013 which found the bridge to meet one of the criteria for determining Cultural Heritage Value or Interest (CHIV) (under O.Reg. 9/06).
- A Cultural Heritage Evaluation Report (CHER) was completed for the study area in May 2021 to provide additional analysis and confirmed the evaluation of CHVI contained in the 2013 HIA.
- The HIA and CHER determined that Bridge 16-WG is a rare example of a solid spandrel, concrete-arch bridge from the early-20<sup>th</sup> century (c.1910).
- There are only 11 bridges of this type left in Ontario according to the Ontario Heritage Bridge List; 4 of which are located in the Township of Centre Wellington.
- The Bridge 16-WG is one of the oldest of its type and is a rare survivor as many of these early bridges have been replaced due to narrow lane width, structural deterioration and to meet modern traffic needs.
- Due to these findings, a Cultural Heritage Impact Assessment (HIA) was completed to examine the potential impacts associated with each Alternative Solution and make mitigation recommendations.
- The HIA noted that Alternative 1: Do Nothing, is not feasible from a heritage perspective, and Alternative 4: Rehabilitation, is not feasible from a structural engineering perspective, however the other alternatives under consideration could be feasible through mitigation to commemorate the existing Bridge 16-WG.





# NATURAL ENVIRONMENT EXISTING CONDITIONS



## Vegetation

- The study area is dominated by vegetation common to the Lake Simcoe-Rideau Ecoregion (Ecoregion 6E) of the Mixedwood Plains Ecozone.
- Forested area consists mainly of Eastern White Cedar, White Willow, Red Maple, and Manitoba Maple.
- No rare species or vegetation communities were found.

## Wildlife and Species at Risk

- The study area contains habitat that supports a variety of wildlife species characteristic of the Lake Simcoe-Rideau Ecoregion (Ecoregion 6E)
- No nests were observed on Bridge 16-WG; however, the general study area provides habitat for several species of migratory birds, wildlife and potentially Species at Risk (SAR).
- SAR that are known to be present within and adjacent to the Bridge 16-WG study area include Barn Swallow, and Redside Dace which have been observed and mapped within 500 m of this crossing location.

## Fish and Fish Habitat

- The watercourse associated with Bridge 16-WG is Irvine Creek, which the Ministry of Natural Resources and Forestry (MNRF) confirmed is a coldwater tributary of the Grand River.
- Irvine Creek is known to contain a variety of fish species including Brook Trout, and aquatic SAR (i.e., Redside Dace).



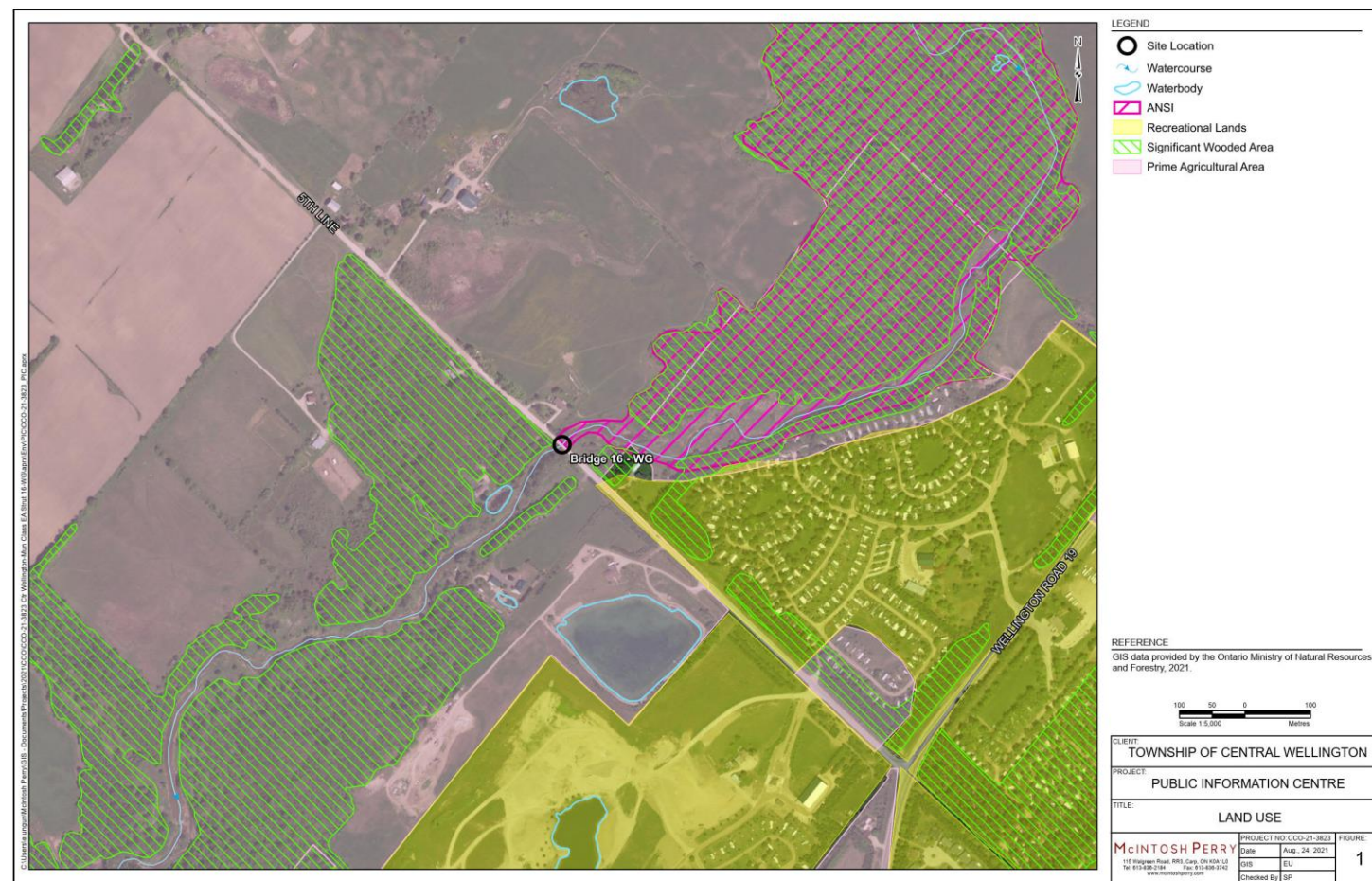
## SOCIAL/CULTURAL ENVIRONMENT EXISTING CONDITIONS

## Archaeology

- A Stage 1 & 2 Archaeological Assessment identified no archaeological sites and concluded the study area does not warrant further archaeological assessment.

## Land Use

- The study area is located within the Grand River Conservation Authority regulated area.
- The Bridge 16-WG study area and directly adjacent lands are identified on the County of Wellington's Official Plan as Core Greenlands and Greenlands, with some recreational area to the east (i.e., Highland Pines Campground).





# EVALUATION CRITERIA



## Transportation

- Traffic Operations
- Conflicts with Private Property Entrances
- Safety Considerations



## Structural

- Safety Considerations
- Extension of Service Life
- Durability



## Natural Environment

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



## Socio-Economic

- Land Use Impacts
- Archaeological, Built Heritage & Cultural Heritage Features



## Construction

- Construction Duration
- Impacts of Construction



## Cost

- Capital Costs
- Operational and Maintenance Costs

# EVALUATION OF ALTERNATIVES

Criteria	Alternative 1: Do Nothing	Alternative 2: Remove Bridge & Construct Turn Arouds	Alternative 3: Replace Bridge	Alternative 4: Rehabilitate Bridge
Transportation	<ul style="list-style-type: none"> <li>Does not provide connectivity for traffic on 5<sup>th</sup> Line over Irvine Creek.</li> <li>Does not address safety concerns.</li> <li>Does not provide safe turn around areas for vehicles at Irvine Creek.</li> <li>Limits access to residential property entrances.</li> </ul>	<ul style="list-style-type: none"> <li>Does not provide connectivity for traffic on 5<sup>th</sup> Line over Irvine Creek.</li> <li>Permanently addresses safety concerns with Bridge 16-WG;</li> <li>Provides safe turn around areas at Irvine Creek.</li> <li>Temporary impacts to residential property entrances anticipated during construction.</li> </ul>	<ul style="list-style-type: none"> <li>Provides safe connectivity for traffic on 5<sup>th</sup> Line over Irvine Creek.</li> <li>Addresses safety concern with existing Bridge 16-WG traffic by providing two (2) lanes over Irvine Creek.</li> <li>Potential impacts to residential property entrances may be required.</li> <li>Potential requirement for 5<sup>th</sup> Line grade raise at bridge approaches.</li> </ul>	<ul style="list-style-type: none"> <li>Reinstates connectivity for traffic on 5<sup>th</sup> Line over Irvine Creek.</li> <li>Does not address safety concerns related to traffic capacity on the structure (i.e., down to one lane over Irvine Creek).</li> <li>Condition of structure would need to be continuously monitored to ensure safe condition is maintained after the rehabilitation works.</li> <li>Temporary impacts to residential property entrances anticipated during construction.</li> </ul>
Structural	<ul style="list-style-type: none"> <li>Does not provide safe service or address public safety concerns with existing Bridge 16-WG.</li> <li>Does not extend the service life of Bridge 16-WG and poses significant risks from a structural engineering perspective.</li> </ul>	<ul style="list-style-type: none"> <li>Does not provide 5<sup>th</sup> Line connectivity over Irvine Creek, however, the service life of the turn around areas are unrestricted.</li> <li>Durability is considered to be the best.</li> <li>No structural engineering risks.</li> </ul>	<ul style="list-style-type: none"> <li>Provides an anticipated 75 year extension of service life.</li> <li>Durability is good with a new structure.</li> <li>Engineering risks are considered low, as all components would be new.</li> </ul>	<ul style="list-style-type: none"> <li>If feasible, a rehabilitation would provide up to only 15-year extension of service life.</li> <li>Rehabilitation is not considered to be a viable al from a bridge engineering perspective as the condition of the structure has surpassed a repairable state.</li> <li>Structural engineering risks are very high, which would make this alternative not feasible.</li> </ul>



# EVALUATION OF ALTERNATIVES

Criteria	Alternative 1: Do Nothing	Alternative 2: Remove Bridge & Construct Turn Arouds	Alternative 3: Replace Bridge	Alternative 4: Rehabilitate Bridge
<b>Natural Environment</b>	<ul style="list-style-type: none"> <li>Continued deterioration of Bridge 16-WG may pose significant impacts to the natural environment with concrete debris falling into Irvine Creek and potential for the structure to collapse into the watercourse.</li> <li>No impacts to terrestrial wildlife habitat.</li> <li>Continued deterioration may pose significant impacts to fisheries and aquatic ecosystems including impacts to SAR (Redside Dace).</li> <li>No impacts to groundwater are anticipated, however if the bridge collapses into the watercourse the concrete debris may cause flooding in the area;</li> <li>No anticipated climate change impacts.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate natural environment impacts.</li> <li>Minor impacts to terrestrial wildlife may be required through vegetation removal activities for construction.</li> <li>No anticipated impacts to fisheries or aquatic ecosystems;</li> <li>In-water works likely to be required for short duration.</li> <li>Potential impacts to SAR can be mitigated.</li> <li>No impacts anticipated to groundwater or surface water.</li> <li>Increased greenhouse emissions may be incurred due to detours caused by removal of connectivity on 5<sup>th</sup> Line.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate natural environment impacts.</li> <li>Minor impacts to terrestrial wildlife may be required through vegetation removal activities for construction.</li> <li>No anticipated impacts to fisheries or aquatic ecosystems;</li> <li>In-water works likely to be required for short duration.</li> <li>The existing Bridge 16-WG abutments are within Irvine Creek, however, a new bridge may be constructed with a larger hydraulic opening to support better conveyance capacity and minimize the overtopping of 5<sup>th</sup> Line during the Regional Storm.</li> <li>Potential Impacts to SAR can be mitigated.</li> <li>No anticipated impacts to groundwater or surface water.</li> <li>No anticipated climate change impacts.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate natural environment impacts.</li> <li>Minor impacts to terrestrial wildlife may be required through vegetation removal activities for construction.</li> <li>No anticipated impacts to fisheries or aquatic ecosystems;</li> <li>Duration of in-water works likely to be long.</li> <li>Existing Bridge 16-WG abutments are in Irvine Creek.</li> <li>Potential impacts to SAR can be mitigated.</li> <li>No anticipated impacts to groundwater or surface water.</li> <li>The existing Bridge 16-WG does not meet MTO design criteria for vertical clearance and 5<sup>th</sup> Line would be overtopped by the Regional Storm by approximately 0.9 m.</li> <li>Increased greenhouse gas emissions may be incurred due to detours caused by removal of connectivity of 5<sup>th</sup> Line for large vehicles.</li> </ul>

# EVALUATION OF ALTERNATIVES

Criteria	Alternative 1: Do Nothing	Alternative 2: Remove Bridge & Construct Turn Arounds	Alternative 3: Replace Bridge	Alternative 4: Rehabilitate Bridge
<b>Socio-Economic</b>	<ul style="list-style-type: none"> <li>Bridge 16-WG would remain closed to the public, which may impact emergency service response times.</li> <li>No connectivity for public on 5<sup>th</sup> Line over Irvine Creek.</li> <li>Continued deterioration of Bridge 16-WG may pose a health and safety concern.</li> <li>Operational issues for municipal service vehicles (i.e. garbage, snow removal).</li> <li>Not considered feasible from a heritage perspective (continued deterioration will result in total loss of cultural heritage resource).</li> <li>No anticipated impacts to archaeological resources.</li> <li>No construction related impacts.</li> </ul>	<ul style="list-style-type: none"> <li>Removal of Bridge 16-WG may impact emergency service response times.</li> <li>No connectivity for public on 5<sup>th</sup> Line over Irvine Creek.</li> <li>Potential for longer route times for municipal service vehicles (i.e., garbage, snow removal).</li> <li>Feasible from a heritage perspective by incorporating mitigation to commemorate Bridge 16-WG.</li> <li>No anticipated impacts to archaeological resources.</li> <li>Minor construction related impacts.</li> </ul>	<ul style="list-style-type: none"> <li>No long term impacts to emergency service response times.</li> <li>New bridge would provide two-lanes of 5<sup>th</sup> Line traffic over Irvine Creek which is preferred from a traffic safety perspective.</li> <li>Best option for municipal service vehicles (i.e., garbage, snow removal) as new bridge will not require height or load postings.</li> <li>Feasible from a heritage perspective by incorporating mitigation to commemorate the bridge.</li> <li>No anticipated impacts to archaeological resources.</li> <li>Moderate construction related impacts, however, since the bridge is currently closed, it is assumed the closure will remain in place until the structure is replaced.</li> </ul>	<ul style="list-style-type: none"> <li>No long term impacts to emergency service response times.</li> <li>Only single-lane of 5<sup>th</sup> Line traffic over Irvine Creek while 5<sup>th</sup> Line approached are two-lanes.</li> <li>Height and load posting may still be required after rehabilitation works which would restrict municipal service vehicles (i.e., garbage, snow removal).</li> <li>Best alternative from a heritage perspective.</li> <li>No anticipated impacts to archaeological resources.</li> <li>Moderate construction related impacts anticipated.</li> </ul>

# EVALUATION OF ALTERNATIVES

Criteria	Alternative 1: Do Nothing	Alternative 2: Remove Bridge & Construct Turn Arouds	Alternative 3: Replace Bridge	Alternative 4: Rehabilitate Bridge
Construction	<ul style="list-style-type: none"> <li>No construction is required.</li> </ul>	<ul style="list-style-type: none"> <li>Construction duration is anticipated to be approximately 1 month.</li> </ul>	<ul style="list-style-type: none"> <li>Construction duration is anticipated to be approximately 3-6 months, depending on the type of structure.</li> </ul>	<ul style="list-style-type: none"> <li>Construction duration is unknown due to the scope of work required for this option being unknown since it is considered not feasible.</li> </ul>
Cost	<ul style="list-style-type: none"> <li>Lowest capital costs due to minimal project scope.</li> <li>Maintenance costs are significantly higher with no extension of service life due to this option requiring annual structural assessments.</li> </ul>	<ul style="list-style-type: none"> <li>Costs associated with this alternative are second lowest and service life is unrestricted.</li> <li>Operational and maintenance costs are significantly lower due to this alternative not requiring annual structural assessments.</li> </ul>	<ul style="list-style-type: none"> <li>Highest capital costs, however, this alternative is the more economical solution based on the anticipated extension of service life (i.e. 75 years).</li> <li>Operational and maintenance costs are anticipated to be second highest.</li> </ul>	<ul style="list-style-type: none"> <li>Costs associated with this alternative are the second highest, however, this is considered to be the least economical alternative based on the extension of service life (i.e. 15 years) and it should also be noted that the cost estimated may be significantly variable based on the conditions revealed during rehabilitation efforts.</li> <li>Operational and maintenance costs are anticipated to be the highest.</li> </ul>



# RECOMMENDED ALTERNATIVE

**The Recommended Alternative Solution is Alternative 3 - Removal and replacement of the existing Bridge 16-WG in the current location.**

The key benefits of the Recommended Alternative are:

- Low engineering risks as all bridge components would be new, and the anticipated extension of service life is approximately 75 years.
- The new bridge would be constructed with a wider deck platform to allow for two-lanes of traffic at the watercourse crossing which would meet operational and safety standards.
- Lowest impact to public and traffic on 5<sup>th</sup> Line and municipal service vehicles, as the crossing would reinstate connectivity over Irvine Creek with no height or weight postings.
- New bridge would be constructed with a larger hydraulic opening to support better conveyance capacity and minimize the overtopping of 5<sup>th</sup> Line during the Regional Storm.

Anticipated impacts and mitigation of the Recommended Alternative are:

- During construction, local traffic detours would remain in place until work is complete.
- Any wildlife and vegetation, including SAR that may be disturbed during construction will be considered and mitigation for in-water timing windows, migratory bird timing window restrictions, reestablishment of vegetation removal areas, etc. will be included in the Contract Documents and adhered to by the Contractor.
- Impacts to Cultural Heritage Value would be avoided through incorporation of mitigation strategies to commemorate the existing Bridge 16-WG.



# UPCOMING CONSULTATION OPPORTUNITIES

The following consultation is being conducted as part of this MCEA Study:

Consultation	Timeline
Notice of Online Public Open House mailout and advertisement on the Township of Centre Wellington's website.	September 2, 2021
Online Public Open House	September 6, 2021 to September 24, 2021
Presentation of Preferred Alternative to Township Heritage Committee and Council	Fall 2021
Advertise Project File Report for a 30-day public review and comment period	Fall 2021
Project Completion	Winter 2022

Following the Project File Report 30-day public review and comment period, if there are no outstanding comments that need to be addressed, the project will proceed to Detail Design and Construction. Timing is to be determined pending funding and approvals.

## IF YOU WOULD LIKE MORE INFORMATION, PLEASE CONTACT:

Ms. Lisa Marshall, P.Eng.  
Consultant Project Manager  
McIntosh Perry Consulting Engineers  
Tel: 1-613-852-1148  
Email: l.marshall@mcintoshperry.com

Mr. Adam Gilmore, P.Eng.  
Township Project Manager  
Township of Centre Wellington  
Tel: 519-846-9691 x 301  
Email: agilmore@centrewellington.ca

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Please submit any questions or comments directly online, email or by phone to the contacts listed above by September 24, 2021.

Thank you for participating in the Online Public Open House. Information is being collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record. If you have accessibility requirements in order to participate in this project, please contact one of the project team members listed above.