APPENDIX

G PUBLIC INVOLVEMENT

APPENDIX

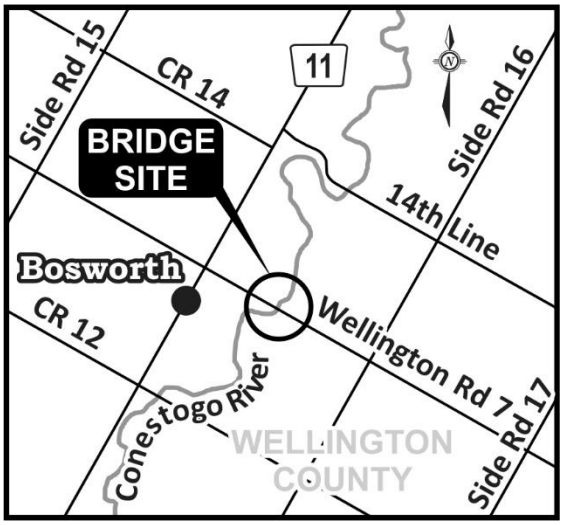
G-1 NOTICE OF STUDY COMMENCEMENT

NOTICE OF STUDY COMMENCEMENT

County of Wellington
Wellington Road 7, Bosworth Bridge No. B007028
Township of Mapleton
Schedule B Municipal Class Environmental Assessment

The Study

The Bosworth Bridge (No. B007028) consists of a single span steel truss structure with a concrete deck over the Conestogo River. The bridge has a span and deck width of 40.1 m and 8.4 m respectively and was constructed circa 1949. The bridge is located on Wellington Road 7 in the Township of Mapleton, 0.8 km east of Wellington Road 11. The study area extends approximately 1 km on either side of the bridge. As part of a bridge inspection conducted in 2019, the Bosworth Bridge, No. B007028 was found to be in poor condition with major elements showing signs of significant deterioration. WSP has been retained by the County of Wellington to complete a Municipal Class EA Study to address these items.



The Process

The study is being conducted in accordance with Schedule B of the Municipal Class Environmental Assessment process (2000, as amended in 2015). The study will confirm and document the existing structural deficiencies and identify alternative solutions, including rehabilitation or replacement of the bridge, and evaluate associated environmental impacts.

Comment Invited

A key component of the study will be consultation with interested stakeholders including public, agencies and Indigenous communities. We want to ensure that anyone with an interest in this study has the opportunity to provide input and feedback. Project updates will be posted on the Wellington County website www.wellington.ca and you are invited to provide input to the Project Team. Upon completion of the study, the planning process and recommendations will be documented in a Project File and made available for public review.

If you have any questions or concerns at any time during the study, or wish to be placed on the study mailing list to receive study notices directly, please contact either of the project team members below:

Joe de Koning, P.Eng.
Construction Manager
County of Wellington
74 Woolwich Street
Guelph ON N1H 3T9
519.837.2601 x 2270
joedk@wellington.ca

William Van Ruyven, P.Eng.
Consultant Project Engineer
WSP Canada Inc.
610 Chartwell Road, Suite 300
Oakville ON L6J 4A5
905.823.8500
william.vanruyven@wsp.com

Covid-19
The County is keeping the community safe by complying with provincial guidelines, supporting physical distancing, and postponing in-person public meetings. Consultation and opportunities for public input will focus on web-based information packages with accommodations for alternative formats, as requested.

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act and will become part of the public record.

Alternate Formats Available Upon Request

This notice first issued on January 21, 2021.

County of Wellington
Wellington Road 7, Bosworth Bridge No. B007028
Township of Mapleton
Schedule B Municipal Class Environmental Assessment
Notice of Study Commencement

Agency/Utility Response Form

Name:	
Title:	
Agency Name & Division or Branch:	
Mailing Address:	
Email:	
Phone (optional):	

Our agency would like to be kept informed of the Study with direct mailings. Yes ☐ No ☐

Please remove our agency from the project mailing list. Yes ☐ No ☐

Please provide any initial information or comments you may have:

Please return this form by February 25, 2021.

William Van Ruyven, P.Eng.
Consultant Project Engineer
WSP Canada Inc.
610 Chartwell Road, Suite 300
Oakville ON L6J 4A5
william.vanruyven@wsp.com

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With the exception of personal information, all comments will become part of the public record.

APPENDIX

G-2 ONLINE PUBLIC INFORMATION CENTRE

NOTICE OF ONLINE PUBLIC INFORMATION CENTRE

County of Wellington
Wellington Road 7, Bosworth Bridge No. B007028
Township of Mapleton, Ontario
Schedule B Municipal Class Environmental Assessment

The Study

The Bosworth Bridge (No. B007028) consists of a single span steel pony truss structure with a concrete deck over the Conestogo River. The bridge was constructed circa 1949 and has a 40.1 m span and 7.5 m deck width. The bridge is located on Wellington Road 7 in the Township of Mapleton, 0.8 km east of Wellington Road 11. The study area extends approximately 1 km on either side of the bridge. As part of a bridge inspection conducted in 2019, the Bosworth Bridge, No. B007028 was found to be in poor condition with major elements showing signs of significant deterioration and has functional deficiencies. WSP has been retained by the County of Wellington to complete a Municipal Class EA Study to address these items.

The Process

The study is being conducted in accordance with Schedule B of the Municipal Class Environmental Assessment process (2000, as amended in 2015). The study will confirm and document the existing structural deficiencies and identify alternative solutions, including rehabilitation or replacement of the bridge, and evaluate associated environmental impacts.

Public Engagement and Consultation

An online Public Information Centre (PIC) has been arranged to allow local residents and interested members of the public an opportunity to review and comment on the alternative planning solutions under consideration, the evaluation process, and the next steps in the study. Display slides will be made available to the public on the County website beginning **April 1, 2021**. They can be viewed any time after this date by visiting:

www.wellington.ca/BosworthBridgeEA

Residents are encouraged to submit comments by **April 29, 2021**. Comment sheets are available on the County's website and can be submitted via an online form or by email.

If you have any questions or concerns at any time during the study, or wish to be placed on the study mailing list to receive study notices directly, please contact either of the project team members below:

Joe de Koning, P.Eng.
Construction Manager
County of Wellington
74 Woolwich Street
Guelph ON N1H 3T9
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Alternate Formats Available Upon Request

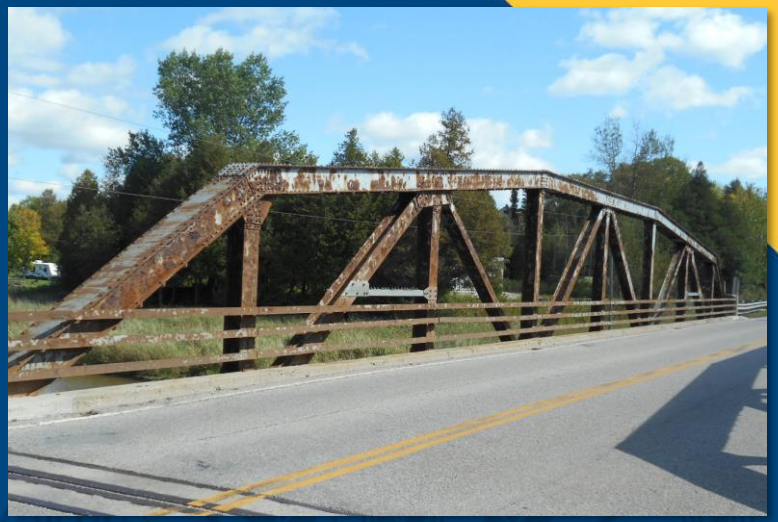
This notice first issued on **March 31, 2021**.

County of Wellington

Bosworth Bridge No. B007028 Municipal Class Environmental (EA) Study

Wellington Road 7
Township of Mapleton

PUBLIC INFORMATION CENTRE
Online Package



Spring 2021

Welcome

Welcome to the **online Public Information Centre (PIC)** for the Bosworth Bridge No. B007028 Class EA Study. This is the **only Public Information Centre** planned for this study. We invite you to securely sign-in online by visiting: www.wellington.ca/BosworthBridgeEA

We encourage your input and feedback on the materials presented through this online PIC. Questions or comments can be submitted online via the URL listed above, or email to:

Joe de Koning, P.Eng.
Construction Manager
County of Wellington
519.837.2601 x 2270
joedk@wellington.ca

William Van Ruyven, P.Eng., PMP
Consultant Project Manager
WSP Canada Inc.
905.823.8500
william.vanruyven@wsp.com

There is an opportunity at any time during the EA process for interested persons to provide written input. However, we ask that comments on the PIC materials be provided by **April 29, 2021** so that the Project Team can consider the feedback in the next phase of the study.

Any comments received will be collected under the **Municipal Freedom of Information and Protection of Privacy Act** and, with the exception of personal information, will become part of the public record.

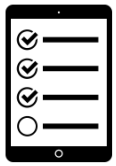
About this PIC

Purpose of This Package

- Introduce the Study and Municipal Class EA Process
- Review Existing Conditions, Problems and Opportunities
- Evaluate Alternative Planning Solutions
- Review Design Considerations
- Obtain Community Feedback and Identify Next Steps

How You Can Participate

Review this information package

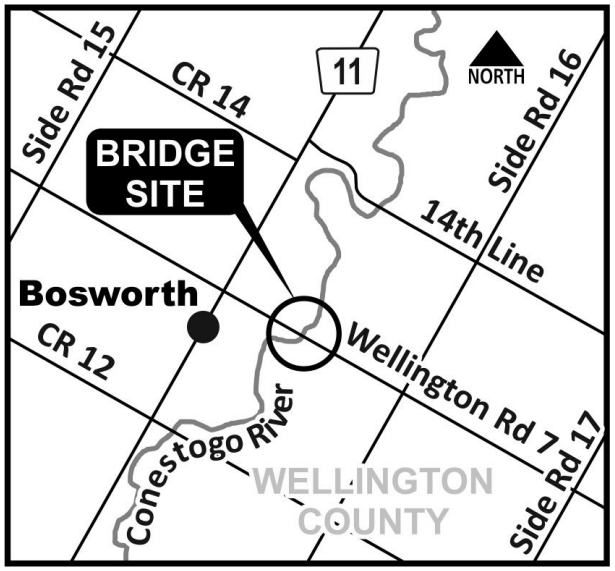


Complete the **Online Comment Form**

Contact us directly

What is This Study About?

- The County of Wellington has initiated a Municipal Class Environmental Assessment (Class EA) to consider potential solutions to address the bridge condition.
- The study is being conducted in accordance with Schedule B of the Municipal Class EA process (2000, as amended in 2015). The study will confirm and document the existing structural deficiencies and identify alternative solutions, including rehabilitation or replacement of the bridge, and evaluate associated environmental impacts.
- The Bosworth Bridge (No. B007028) is located on Wellington Road 7 in the Township of Mapleton, 0.8 km east of Wellington Road 11 and consists of a single span steel pony truss structure with a concrete deck on spread footings, over the Conestogo River
- The Bridge Study area extends approximately 1 km on either side of the bridge.



What is This Study About?

- In accordance with the requirements of the Schedule B Municipal Class EA process, the Study will identify the problem and opportunity, inventory natural, social, economic and cultural environments, identify and evaluate the planning alternatives and identify a recommended planning solution.
- The study will consider numerous aspects including but not limited to: construction staging and traffic delays during construction, local residences, business activity, general community access, cultural heritage and Indigenous values, as well as protection of the natural environment.
- Supporting technical components will inform the decision-making process and final Study recommendations, including:
    - Cultural Heritage
    - Archaeology
    - Drainage and Hydrology
    - Road Safety & Geometry
    - Natural Environment
    - Hydrogeology
    - Structural Design

Municipal Class EA Process

- This study is being conducted in accordance with the Ontario Environmental Assessment Act through the application of the **Municipal Class Environmental Assessment (MCEA).**
- The Class EA process enables the **planning and implementation of municipal infrastructure projects** taking into account the natural, cultural and socio-economic environmental setting, agency and public interests and unique project requirements.
- This study is following the MCEA **Schedule B process**, which involves two phases and one formal public engagement milestone. This process is depicted on the next slide.
- Public feedback is not limited to formal engagement milestones, and is welcome at any time throughout the study process.

Municipal Class EA Schedule B Process

Phase 1: Problem and Opportunity
- ✓ Identify problems and opportunities

Notice of Study Commencement
January 2021

Phase 2: Alternative Planning Solutions
- ✓ Inventory natural, social, economic and cultural environments
- ✓ Identify and evaluate the planning alternatives
- ✓ Identify a Recommended Planning Solution
- ✓ Consult agencies and the public and select Preferred Planning Solution

Public Information Package
April 2021
- ✓ Existing conditions
- ✓ Problems and Opportunities
- ✓ Alternative Planning Solutions
- ✓ Design Considerations

We Are Here

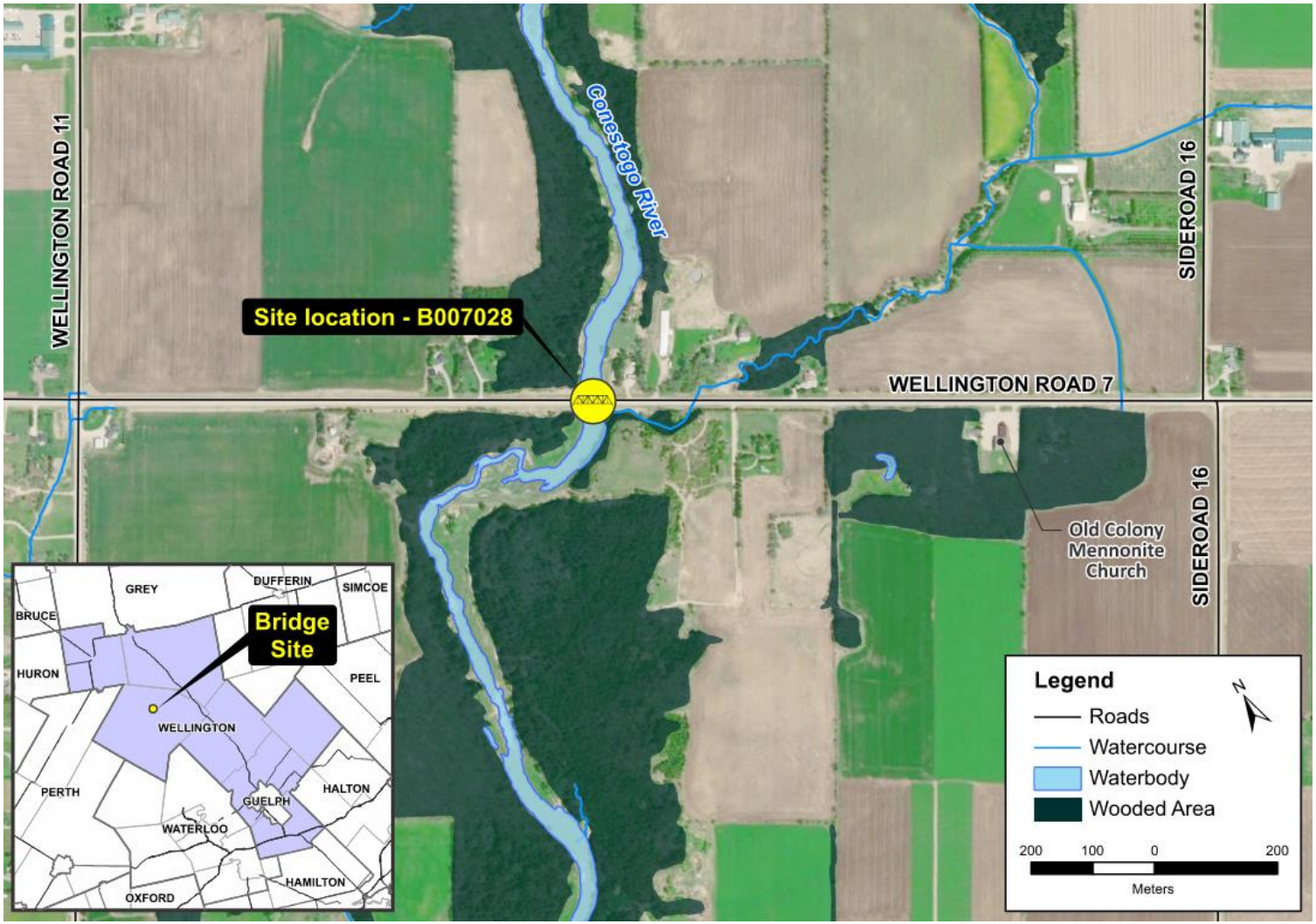
Project Documentation:
- ✓ Project File: Document decision making process of the EA Study

Notice of Study Completion
Tentatively Summer 2021

EA Approval

Design, Permits/Approvals and Construction
- ✓ Detailed Design

Study Area and Existing Conditions Overview



Existing Conditions – Transportation, Community and Land Use

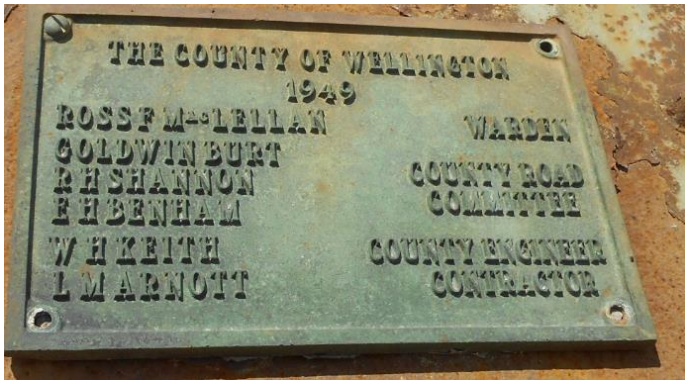
- The Bosworth Bridge (B007028) carries two lanes of traffic on Wellington Road 7 over the Conestogo River, and is considered to be in an east-west direction.
- Wellington Road 7 is classified as an arterial road, with a posted speed limit of 80km/h.
- The 2015 average annual daily traffic (AADT) in the vicinity of the Bosworth Bridge was about 4,500.
- There are no active transportation facilities within the Study Area.
- Existing land use along Wellington Road 7 is prime agricultural with a mix of rural residences and a farming operation with frontage and/or access on Wellington Road 7.
- The lands buffering the Conestogo River are classified as Core Greenlands and Greenlands per Schedule A4 of the Wellington County Official Plan.
- In 2012, a Traffic Improvement Study for Wellington Road 7 was completed between Wellington Road 18 and Wellington Road 109. This study recommended further investigation be completed for providing northbound passing lanes north of Sideroad 11 and north of Wellington Road 12. Given that passing lanes length of 1.5 – 2.0 km were recommended (outside the limits of the Bosworth Bridge), the proposed alternatives in this study have not considered additional widening for future passing lanes.

Existing Conditions – Summary of Key Considerations

- Water level gauge station located on the northwest embankment of the bridge. Recommended to be maintained during construction using temporary protection systems.
- Hydraulic analysis of the Conestogo River suggests that the Regional Storm water level at the bridge crossing is about 0.06 m above the existing road. Bridge replacement is anticipated to required road profile adjustments
- Stage 1 archaeological assessment concluded that archaeological resources may exist at site outside of the limits of previously disturbed from original bridge construction. Stage 2 assessment not anticipated as limits of disturbance are anticipated to be within previously worked areas.
- Bridge determined to have cultural heritage valor interest, specifically possessing design/physical, historical/associative and contextual values.

Existing Conditions – Structure B007028

- The Bosworth Bridge was constructed in circa 1949. The first known rehabilitation took place in 1987, when the Bosworth Bridge was 38 years old, under Contract No. 87-61. This rehabilitation involved cleaning and coating of the structural steel, strengthen truss lower chord connections, replacement of the expansion joints, concrete overlay, waterproofing and paving.
- The second known rehabilitation took place in 2008. This repair included the installation of braces at the compression diagonals to improve the load capacity.
- The third known rehabilitation took place in 2013. This repair included jacking the bridge and placing shims underneath of the rocker bearings to level the deck with the concrete end dams at the ballast wall.
- The Bridge is currently not posted with a load limit; however, between 1987-2008 a load limit of -- t- - 31 t – 41 t was posted.



Existing Conditions – Structure B007028

- In general, severe deterioration including delaminated and spalled concrete with rust staining is present throughout the soffit of deck fascia. Cracks with efflorescence where identified in the abutment. Bearings exhibited signs of deterioration with perforated holes and upward movement. The traffic barriers are in poor condition and do not meet current standards.
- Several components are in need of maintenance, rehabilitation and/or replacement and the bridge is approaching the end of its useful service life.
- Functional/operational deficiencies including substandard roadway width and sub-standard barrier protection are noted on this site.
- Main load bearing components (steel trusses) are exposed to potential traffic impact damage that could result in severe structural damage or even collapse.

Existing Conditions (Abutment & Wingwall Condition)

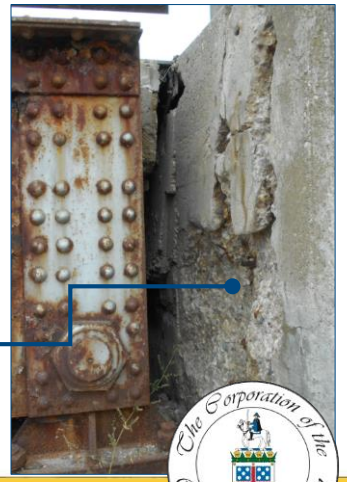
West Abutment

East Abutment

South East Wingwall

Cracks and Efflorescence

East Ballast Wall



Cracks, Spall and Scaling

Existing Conditions (Deck Soffit Condition)

Exterior Deck Soffit

Spall with Exposed Rebar, Honeycomb and Efflorescence

Deck Soffit

Severely Rusted Deck Drains

Existing Conditions (Truss Condition)

Severely Corroded and Flaked Batten Plate

Corroded and Flaked Diagonal Lattice Bars

Bottom Chord

Corrosion and Rust Jacking at Gusset Connections

Existing Conditions (Bearing Condition)

Southwest Bearing

Southeast Bearing

Northwest Bearing

Perforation through Diaphragm

Upward Movement

Northeast Bearing

Section Loss

Existing Conditions (Barrier System)

South Traffic Barrier

North Traffic Barrier

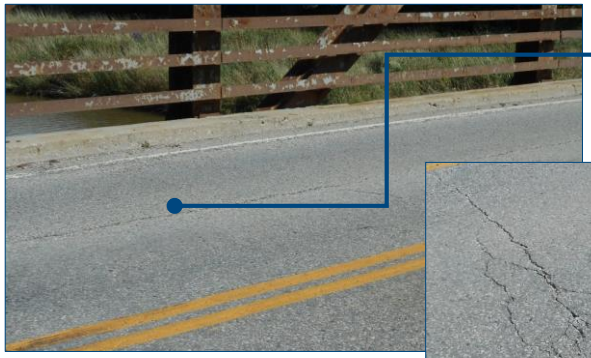
Bracing added to diagonal compression members (2008)

Concrete Railing with Spall and Exposed Rebar

Damaged & Substandard Barrier

Existing Conditions (Wearing Surface & Expansion Joint)

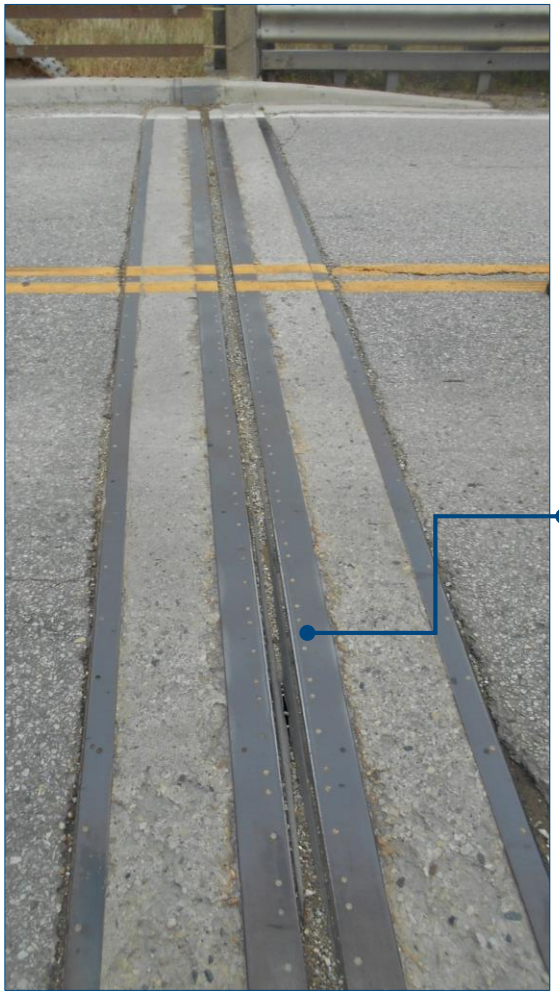
Asphalt Wearing Surface



Longitudinal Crack

West Approach Water Ponding and Pothole

East Expansion Joint



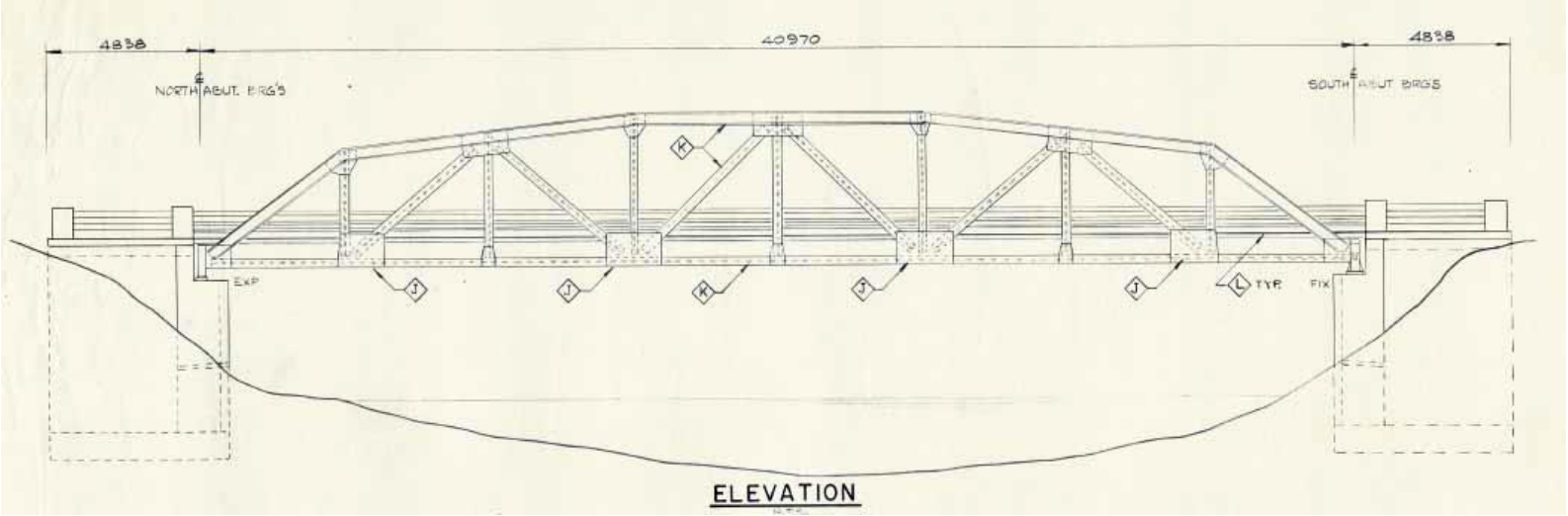
Deteriorated, Depressed and Torn Joint Sealer

Existing Conditions - Heritage

- Constructed in 1949, the Bosworth Bridge is a two-lane, single span Warren Camelback steel pony truss structure.
- It is one of two examples of this bridge type under the jurisdiction of the County of Wellington and the older of the two county examples.
- Bosworth Bridge is the second oldest steel pony truss structure within the Grand River watershed. Steel pony truss bridges were once plentiful in the Grand River watershed and in the County of Wellington, but their numbers are now diminished.
- The bridge has not undergone major changes to its original design and retains the original guardrail and concrete handrail system on each of the four corners.

Existing Conditions – Heritage Continued…

- A bridge has spanned the Conestogo River at this location on Wellington Road 7 since the mid-nineteenth century. The current structure replaced an earlier narrow steel pony truss in 1949.
- The Conestogo River, as a tributary of the Grand River, was designated a Canadian Heritage River in 1994; however, this bridge is not designated under the *Ontario Heritage Act (OHA)* or listed on a *Municipal Heritage Register*.
- A Cultural Heritage Evaluation Report (CHER) completed for the bridge in 2015 determined that it is of cultural heritage value or interest, specifically possessing design/physical, historical/associative and contextual values.



Natural Environment Overview

Natural Environment Overview

- The Conestogo River and its riparian corridor is the most prominent natural feature in the study area.
- Terrestrial habitat in proximity to the Bosworth Bridge consists primarily of disturbance tolerant vegetation within the Wellington Road 7 Right-of-Way with riparian wetland habitat along the river and forest habitat further back.
- The Conestogo River floodplain is regulated by the Grand River Conservation Authority (GRCA) under O.Reg. 150/06.
- Designated Areas / Features:
  - Drayton Area of Natural and Scientific Interest (ANSI) occurs approximately 2 km south of the Bosworth Bridge.
  - Surrounding natural heritage features along river have been identified as Core Greenlands in the County of Wellington Official Plan (2019).
  - Forested habitat ~ 100 m south of the bridge provides Significant Wildlife Habitat (SWH) as a Deer Wintering Area.
  - No Provincially Significant Wetlands (PSWs) or Environmentally Sensitive / Significant Areas

Cliff Swallow nests (>30) were documented on the underside of the Bridge in 2020

Natural Environment – Species at Risk

- Four Species At Risk (SAR) were confirmed in the vicinity of the Bosworth Bridge during the natural environment field surveys:
  - Barn Swallow (Threatened) nesting was confirmed on the bridge structure;
  - Bank Swallow (Threatened) was observed foraging over the river;
  - Eastern Wood Peewee (Special Concern) was heard singing in the adjacent forested habitat; and
  - Monarch Butterfly (Special Concern) was observed in roadside areas where Milkweed (i.e., suitable breeding habitat) was present.

The Conestogo River provides suitable habitat for Snapping Turtle (Special Concern)

Natural Environment – Species at Risk Continued…

- The Conestogo River and the terrestrial habitats in the vicinity of the Bosworth Bridge also provides potential habitat for seven additional SAR:
  - Bald Eagle (Special Concern)
  - Bobolink (Threatened)
  - Chimney Swift (Threatened)
  - Eastern Meadowlark (Threatened)
  - Little Brown Myotis (Endangered)
  - Snapping Turtle (Special Concern)
  - Wood Thrush (Special Concern)
- There are no aquatic SAR (e.g., fish or mussels) found in the vicinity of the bridge according to DFO SAR mapping.

Barn Swallow (Threatened) nesting (>5) was confirmed on the underside of the Bridge in 2020

Natural Environment Overview – Timing Windows

- As a permanent warmwater watercourse, in-water activity is restricted between **March 15** and **June 30** of any year to avoid impacts to the watercourse during the sensitive life stages of the warmwater fishery in Conestogo River.
- To protect hibernating turtles, no in-water works shall be permitted between **September 1** and **April 30** unless the aquatic construction zone is isolated prior to September 1 (of any year).
- To protect migratory birds, vegetation clearing shall be avoided during the identified "Regional Nesting Period" from **April 1** to **August 31**.

Existing Conditions – Drainage

A hydraulic analysis was completed using the Grand River Conservation Authority models to confirm the performance existing structure and proposed replacement.

Under existing conditions

- The Regional Storm overtops the road/bridge by 0.06 m.

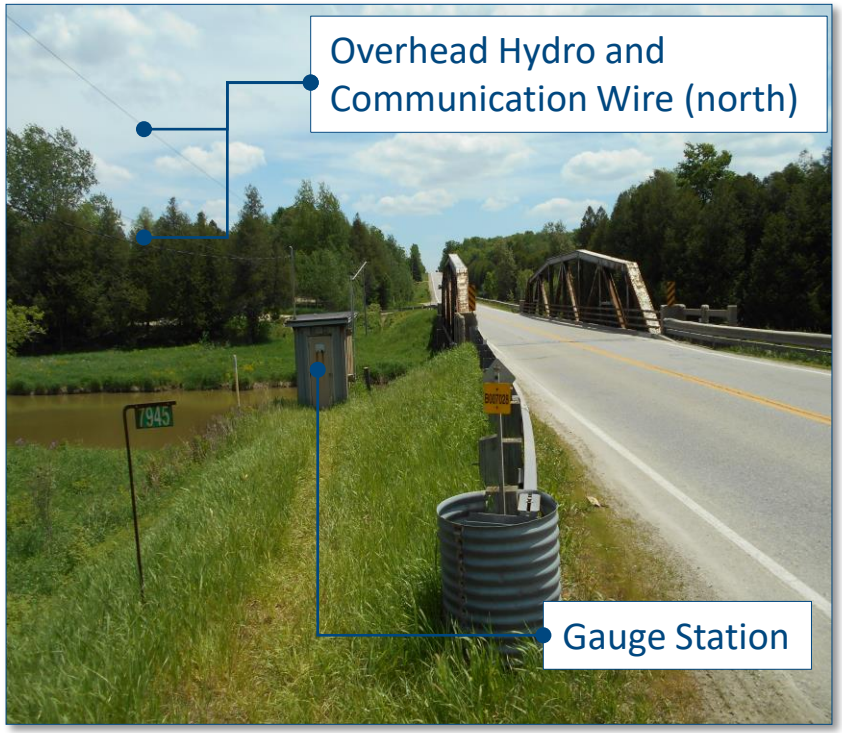
Under proposed conditions

- 1.0 m vertical clearance is desirable for the 50-year event
- No pressure flow is generated during the 100-year event
- If the bridge is to be replaced, it is anticipated the road profile will need to be raised

For this assessment, it is understood that Wellington Road 7 is classified as a rural, arterial road.

Existing Conditions – Utilities

- There are overhead hydro and communications wires located approximately 9 m north of the existing bridge. These are not anticipated to be in conflict for a potential bridge rehabilitation or replacement; however, clearance requirements must be provided.



- A 300 mm diameter gas main located about 7 m north of the existing bridge and was installed below the channel. Impacts are not anticipated.
- It is anticipated that the gauge station located on the northwest embankment of the bridge can be maintained in it's current location; however, a temporary protection system may be required.
- An existing communications cable is mounted on the north side of the bridge that may need to be temporarily supported during construction

Problem and Opportunities

Based on the assessment of the existing Bosworth Bridge and an overview of the area features, the problem being addressed is described as follows:

- The bridge is in an advanced state of deterioration
- The bridge has deficient barrier protection
- Main load carrying members (designed without redundancy) are exposed to traffic impacts
- The bridge has narrow shoulders and a substandard roadway width

The cost of maintaining the current bridge under a rehabilitation approach is expected to meet or exceed the cost of replacement options and therefore the EA Study has been initiated to define the most appropriate bridge management strategy to carry forward.

Alternative Planning Solutions

To address the poor conditions of the Bosworth Bridge, the following planning solutions are being considered:

Alternative Planning Solution	Description
Do Nothing	No improvements would be made to the structure. The structure would continue to be monitored / inspected. Through time, it is expected that load restrictions and eventually, bridge closures would occur as conditions worsen.
Rehabilitation	Rehabilitation includes local repairs to railings, curbs, sidewalks, soffit and substructure repairs, deck and superstructure repairs, repairs to erosion and scour at bridge abutments where necessary.
Replacement	Replacement involves removal of the existing structure and construction of a new structure at or close to the existing location. The proposed structure replacement type and construction / traffic staging methods would be verified upon completion of the study during the detailed design

Factors Considered in Evaluating Alternative Solutions

Socio-Economic Environment

- Consistency with Official Plans and policies
- Potential property requirements
- Impacts to residents and business (operations and access)
- Impacts to agricultural lands and operations

Cultural Environment

- Archeological Resources
- Cultural Heritage Resources

Natural Environment

- Potential indirect and direct impacts to terrestrial and aquatic species and habitats
- Potential impacts to Species at Risk and their habitat

Surface Water and Groundwater

- Management of road runoff
- Protection of surface water features and watercourse crossings
- Flood conveyance
- Protection of groundwater resources

Technical

- Structural condition and deficiencies
- Hydraulic capacity of channel
- Design requirements and construction constraints / complexity

Transportation

- Consistency with transportation planning and policy documents
- Traffic operations and efficiency

Preliminary Cost Estimate

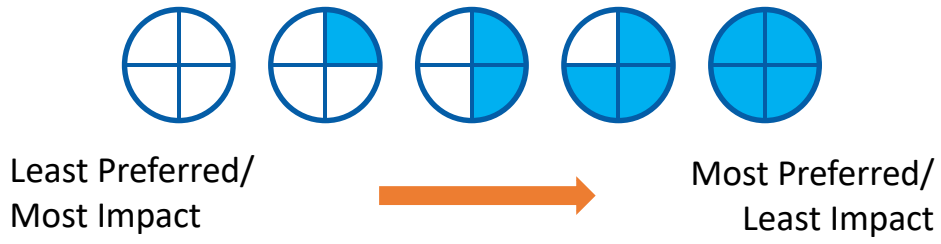
- Capital costs estimate for high-level comparison purposes

Evaluation Criteria

- **Transportation / Traffic Maintenance**, including existing and future traffic operations, emergency vehicle access, flexibility for staged construction
- **Socio-Economic Environment**, including direct and/or indirect impacts related to property, utility facilities, site contamination and noise
- **Structure**, including advanced state of deterioration, structural deficiencies, functional deficiencies, operational deficiencies, barrier deficiencies, guide rail deficiencies, number of spans/piers, span length(s), depth and width of fill at roadway approaches, embankment widening, the need for retaining walls and general safety concerns
- **Cultural Environment**, including impact on archaeology, built heritage and cultural landscape resources
- **Natural Environment**, including direct and/or indirect impacts on watercourses, fisheries, aquatic habitat, terrestrial ecosystems, and shoreline habitat
- **Hydraulics**, including hydraulic capacity and performance related to future design storms
- **Roadway Geometry**, including drainage, grades, horizontal curves
- **Cost Estimate**, including property and construction costs

Assessment and Evaluation Process

- The multi-factor analysis has two basic steps:
  - **Assessment of Impacts -** The potential benefits and impacts of each alternative were assessed against comprehensive set of factors / criteria
  - **Evaluation of Alternatives -** A comparative examination of the relative advantages and disadvantages of the alternatives and a ranking of most preferred to least preferred is developed. Ultimately each factor is reviewed in the context of the overall project objectives and needs
- **The assessment and evaluation is presented in detail over the next few slides and followed by a summary of the key considerations**
- The evaluation utilizes the following system to indicate relative ranking or preference



Evaluation of Alternative Planning Solutions

Category	Do Nothing	Rehabilitation	Replacement
Transportation / Traffic Maintenance	- No immediate changes - Long term impacts would arise as travel would become limited or close, in the long-term due to deteriorating conditions of the bridge and likely eventual closure	- Some short-term traffic impacts during rehabilitation works (e.g. lane closures or temporary detours) - Local and regional traffic may experience delays during rehabilitation works	- Maintains Bosworth Bridge in its current location in the long-term - Construction for bridge replacement would involve traffic management such as possible lane restrictions, road closures and temporary detours - Local and regional traffic may experience delays during construction - Long term improved safety and operation - New bridge will be more durable and low maintenance design (no steel coating or joints at deck end)
			

Evaluation continued…

Category	Do Nothing	Rehabilitation	Replacement
Socio-Economic	- No immediate changes to existing conditions; however, as structural conditions decline, significant socio-economic impacts would arise from load restrictions and due to deteriorating conditions of the bridge likely eventual closure - No impacts to utilities are anticipated - No property impacts	- No impacts outside of existing right-of-way - Temporary alteration of travel/ commuter routes and impact to adjacent/alternative route(s) during construction - Temporary impact to local residents, commercial, industrial and farm businesses during rehabilitation works - No impacts to utilities are anticipated - No property impacts	- Temporary alteration of travel / - commuter routes and impact to adjacent / alternative route(s) during construction - Temporary impact to nearby gravel pits and other local commercial, industrial and farm businesses during construction - Noise and dust and other associated inconveniencies during construction - Disruption to local businesses, farm operations and residences during construction – disruption during construction season over multiple years may be experienced - Minor impacts to utilities are anticipated - Potential property impacts
			

Evaluation continued…

Category	Do Nothing	Rehabilitation	Replacement
Structural	- Structural conditions would worsen until more drastic measures would have to be taken such as bridge load reduction or closure in order to manage risk to the public - Sub-standard barrier protection and guide rail protection not addressed - Main load bearing components (steel trusses) are exposed to potential traffic impact damage – could result in severe structural damage or even collapse	- Provides short term solution to structural deficiencies; however, does not ultimately address the limited design life and does not address design deficiencies - Only defers but does not avoid eventual structure replacement - In order to address severe deterioration of the bearing, the bridge will need to be temporarily supported; however, was not designed for this and would require full deck removal. - Addresses failure of coating system - Deficient traffic barrier not addressed - Main load bearing components (steel trusses) are exposed to potential traffic impact damage – could result in severe structural damage or even collapse	- Provides a long-term solution to addresses all structural and design deficiencies of Bosworth Bridge - Opportunity to consider rapid replacement techniques and other means of optimizing construction to manage impacts (ie. partially precast deck panels) - New bridge will be more durable and low maintenance design (no steel coating or joints at deck end) - Provides traffic barriers that comply with current standards - Addresses failure of coating system - Deficient barrier and guide rail protection is addressed - Lifespan of new structure is 75 years
	⊕	⊕	⊕

Evaluation continued…

Category	Do Nothing	Rehabilitation	Replacement
Cultural Environment	- No archaeological impacts - No impacts to built heritage resources - No impacts to cultural heritage resources	- Limited potential archaeological impacts - Consistent with the principle of preservation of material to its highest integrity and would maintain some heritage attributes of the bridge. - Rehabilitation of the bridge to meet current safety requirements and traffic needs (i.e., widening) could result in the modification / loss of heritage attributes and ultimately loss of the heritage integrity of the bridge.	- Limited potential archaeological impacts - Demolition would result in the loss of bridge heritage attributes - Impacts could be minimized if the new bridge retained its original location and adopted a design that draws from the materials and design inspiration of the current bridge while maintaining legibility (new work that is distinguishable from the old) - Mitigation includes documentation and photographic recording prior to removal
			

Evaluation continued…

Category	Do Nothing	Rehabilitation	Replacement
Natural Environment	- No immediate changes to existing conditions	- Potential for indirect impacts (e.g., debris and sediment release with rehabilitation works) can be managed using appropriate mitigation measures (e.g., proper erosion and sediment controls, use of in-water work timing window). - No permanent impacts on the aquatic habitat of the Conestogo River	- Temporary in-stream works and direct impacts associated with removal of existing abutments and installation of new foundation and abutments. Work zone can be isolated from river and the areas will be restored following construction. - Minor direct impacts to common roadside and riparian vegetation Areas to be restored following construction. - Minor direct impacts and potential indirect impacts can be managed using appropriate mitigation and restoration measures (e.g., proper erosion and sediment controls, use of timing windows for works). - Permits removal of deck drains
			

Evaluation continued…

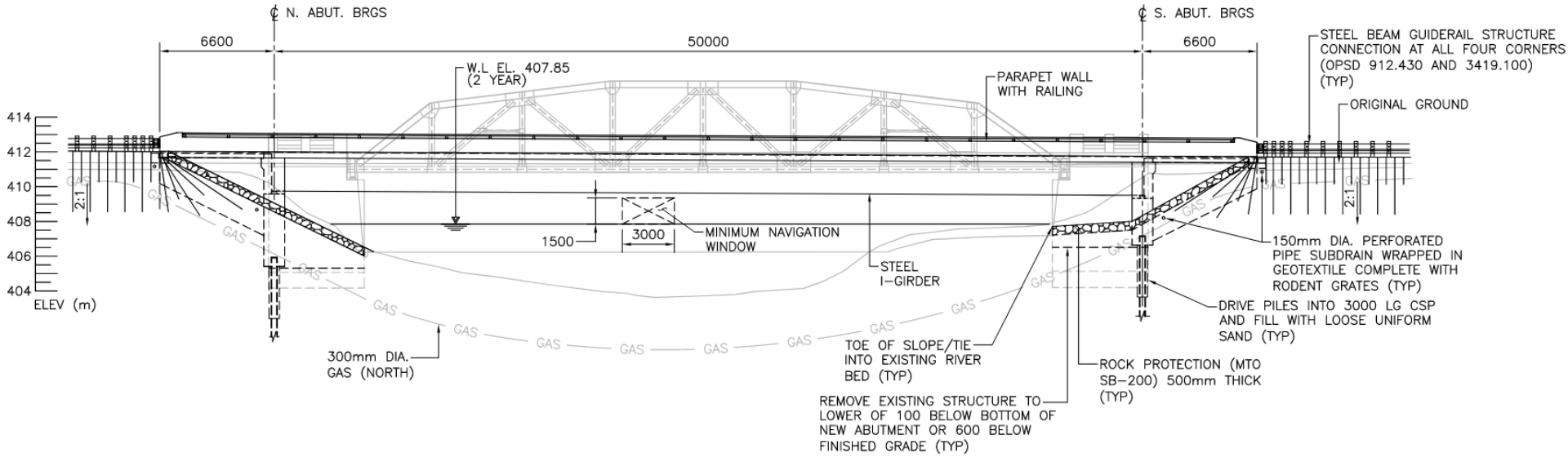
Category	Do Nothing	Rehabilitation	Replacement
Hydraulics	- No changes to existing conditions	- No changes to existing conditions	- Reduced clearance due to increased superstructure depth - Requires profile grade raise
			
Roadway Geometrics	- Substandard roadway width not addressed	- Substandard roadway width not addressed	- Improves sight distance - Improves cross section to meet standard requirements
			
Cost Estimate	- No initial capital costs - Ongoing costs for monitoring and inspections	- Initial capital cost of 2.1 million - Net present value of 3.8 million *	- Initial capital cost of 4.1 million - Net present value of 3.8 million *
			

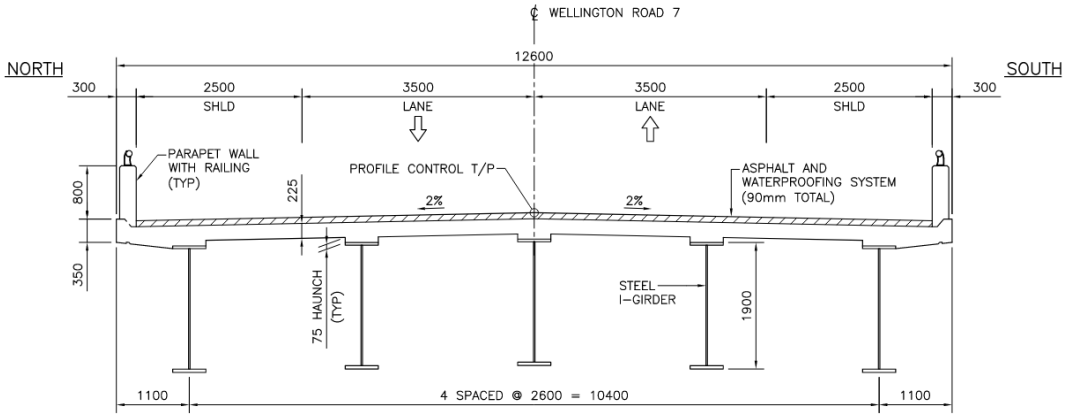
**Net present value of 50 year life cycle cost*

Alternative Planning Solution Summary

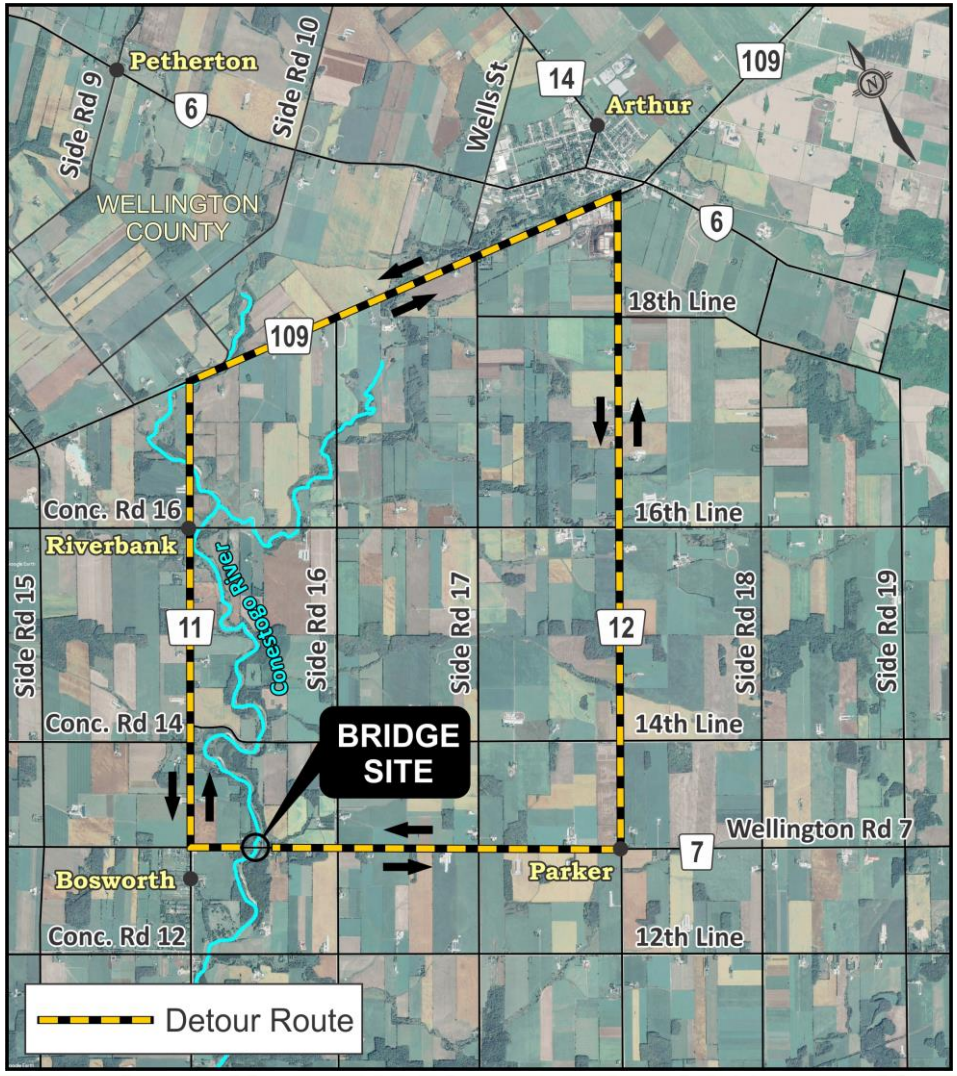
Alternative Planning Solution	Assessment Summary	Conclusion
Do Nothing	• Not a reasonable alternative because significant structural deficiencies would not be addressed. • Would lead to load restrictions and eventually, road closure.	Does not address the problem and therefore is not considered an acceptable alternative. Therefore, this alternative is not recommended.
Rehabilitation	• Extensive and ongoing rehabilitation would be required. • Rehabilitation would add limited additional service life to the bridge. • Only defers/delays a longer-term solution (i.e. eventual bridge replacement)	Addresses some of the structural deficiencies but would not address operational deficiencies. Therefore, this alternative is not recommended.
Replacement	• Existing bridge would be removed and new foundation / abutments would be installed. • All design criteria would be met. • Long term improved safety and operation • New bridge will be more durable and low maintenance design • Traffic delays will occur over multiple construction seasons. Construction staging and traffic management can ease disruption. • Rapid replacement to be considered in next study phase.	Addresses the structural and functional deficiencies; a longer term solution. This alternative is selected as the preliminary preferred alternative solution. **Recommended**

Recommended Bridge Replacement Concept





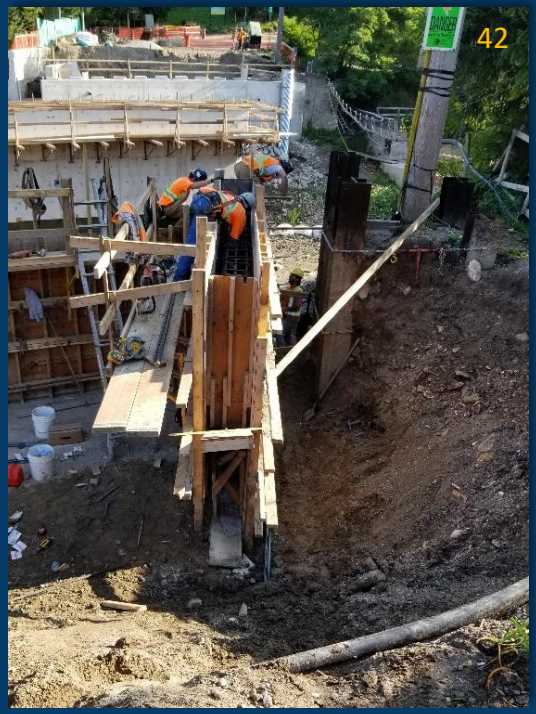
Detour Route for Bosworth Bridge Closure During Construction



Bridge Replacement Design Considerations

Many considerations will go into the detailed design phase following completion of the Class EA study for the proposed bridge replacement:

- Traffic safety standards
- Soil conditions and bridge foundation needs
- Bridge size requirements, materials, construction methods
- Rapid Replacement techniques
- Construction staging and traffic management
- Construction scheduling and duration
- Utilities and temporary protection or relocations
- Groundwater conditions, groundwater pumping
- Environmental mitigation
- Permits/approvals



Next Steps

Following this Public Information Centre (PIC) we will:

- Collect all public comments and respond to questions, as appropriate
- Confirm the Preferred Planning Solution
- Prepare the Project File
- Publish a Notice of Study Completion
- Allow for a minimum 30 day review period of the Project File
- Proceed with detailed design and the implementation for the bridge replacement

Thank you for your participation!

- Public consultation and feedback is one of the main objectives of the Municipal Class Environmental Assessment process. We encourage all questions or comments regarding the study or the contents of the presentation material to be submitted to the Project Team **by April 29, 2021**. Please refer to the County's website or the "Welcome" slide of these displays for contact information. All information is collected in accordance with the Freedom of Information and Privacy Act

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Alternate formats available upon request