

THE CORPORATION OF THE TOWN OF GEORGINA

REPORT NO. OID2024-003

**FOR THE CONSIDERATION OF
COUNCIL**

February 28, 2024

SUBJECT: Completion of the Municipal Class Environmental Assessment for the Old Shiloh Road Bridge

1. RECOMMENDATION:

1. That Council receive Report No. OID2024-03 prepared by the Operations & Infrastructure Department dated February 28, 2024 regarding the completion of the Municipal Class Environmental Assessment (MCEA) planning study for the Old Shiloh Road Bridge;
2. That Council receive the attached report entitled “*Old Shiloh Road Bridge, Class Environmental Assessment Project File Report*”, dated February 6, 2024, prepared by Tatham Engineering;
3. That Council accept the recommended alternative to replace the existing single lane bridge with a two-lane bridge and authorize staff to submit the completed MCEA documentation and Notice of Completion to the Ontario Ministry of the Environment, Conservation and Parks; and,
4. That Council direct staff to complete an analysis of costs, timelines and implementation considerations of the non-structural options for cultural heritage commemoration of the Old Shiloh Road Bridge including: an arch façade, reuse or relocation of portions of the bridge at an alternative location, or erection of a monument, plaque or art installation; and return to Council with a report on the non-structural commemoration options.

2. PURPOSE:

The purpose of this report is to provide an update and summary of the MCEA planning study for the Old Shiloh Road Bridge, and to obtain Council approval to carry out the final steps in completion of the environmental assessment, which will position the Town to move forward with implementation of the study recommendations.

3. BACKGROUND:

The Operations & Infrastructure Department is responsible for maintaining the Town of Georgina’s road network and infrastructure within the right-of-way including bridges.

The Old Shiloh Road Bridge is a concrete arch bridge that was built in 1925. The bridge is located on Old Shiloh Road, approximately 750 m west of Victoria Road, in the hamlet of Udora.

The Town conducts inspections of its bridges every two years in accordance with *Ontario Regulation 104/97: Standards for Bridges* issued under the *Public Transportation and Highway Improvement Act*.

Continuing deterioration of the Old Shiloh Road Bridge has been observed for many years, with rehabilitative construction previously conducted in 1988 and again in 2011. In 2018 a bridge inspection and detailed deck condition survey was conducted by AUE Structural, the outcome of which was a recommendation to replace the bridge within 1 to 5 years. In the 2020 condition assessment completed by Safe Roads Engineering, further deterioration of the condition of the bridge was observed and the need for replacement was re-stated.

In the most recent condition assessment ("*2022 Bridge and Structural Culvert Condition Assessment Report*", Gannet Fleming, December 22, 2022) the following key findings about the Old Shiloh Road Bridge were reported:

- "...the structure has exceeded its intended service life...";
- "...is generally in poor condition and exhibits significant concrete deterioration...";
- "...the substructure is showing signs of severe deterioration...";
- "...the existing barrier system does not meet the current minimum safety standard..."; and,
- "...the structure does not provide the minimum curb to curb width to support bi-directional traffic...".

Capital business case 22-CI-OI-22 was approved by Council in 2022 to undertake a Schedule B Municipal Class Environmental Assessment (MCEA) for the Old Shiloh Road Bridge.

A Municipal Class EA process provides a systematic approach to planning, evaluating, and decision-making for municipal infrastructure projects in Ontario, ensuring that projects are environmentally sound, socially acceptable, and economically feasible. This process is required for certain infrastructure projects in Ontario under the provincially legislated Environmental Assessment Act (EAA).

4. ANALYSIS:

Following completion of a competitive procurement process, the Town of Georgina selected Tatham Engineering Limited to conduct a Schedule B Municipal Class Environmental Assessment (MCEA), under the Environmental Assessment Act, R.S.O 1990. The objective of this environmental assessment is to determine the preferred approach to address the future of the Old Shiloh Road Bridge.

The work of the MCEA study has been completed through the preparation of a series of four Technical Memoranda. The attached draft report entitled “*Old Shiloh Road Bridge, Class Environmental Assessment Project File Report*” is the fourth and final technical memorandum compiling all components of the study.

The following briefly summarizes major aspects of the work and findings of the MCEA study:

Technical Memorandum #1

Work completed:

- Overview of the municipal class environmental assessment process and confirmation of the appropriate class
- Review of existing conditions and setting
- Development of needs and justification for the undertaking including definition of the core problem/opportunity statement
- Stakeholder consultations
- Overview of the alternative solutions
- Inventory and description of the study area considering the physical, natural, social, economic, and climate change environments, including completion of the following investigations:
 - Hydraulic assessment
 - Environmental impact study
 - Stage 1 archaeological assessment
 - Cultural heritage evaluation

Overview of key findings:

- The future works at the Old Shiloh Road Bridge are categorized as “Schedule B” under the MCEA process.
- Existing conditions at the bridge are summarized as follows:
 - Single lane bridge on a two lane road with ditches on each side of the road
 - Located in a 20 m wide Right of Way
 - Serves an average of roughly 920 vehicle crossings per day with a posted speed limit of 60 km/hr
 - Accommodates the minimum required design flow in the river with less than 1.0 m of clearance
 - Vehicle type and load restrictions have been imposed and are posted
 - The structure is experiencing severe deterioration of structural elements and current safety features are sub-standard
 - The bridge has exceeded its intended service life
- The MCEA problem/opportunity statement is defined as:

“The Old Shiloh Road Bridge has exceeded its design service life, is deteriorating, and has been posted with a 20, 21, 27 tonne triple load

posting limit. The Town of Georgina has identified the need to assess alternative solutions at this crossing to address the deteriorating condition and best meet current standards while minimizing impacts to the surrounding residents and environments.”

- The “Notice of Study Commencement” was mailed to all nearby property owners as well as First Nations communities identified by the MECP between March 30 and April 13, 2023.
- Four potential solution categories were identified:
 - Alternative A – do nothing
 - Alternative B – rehabilitate the existing bridge
 - Alternative C – remove and replace the bridge
 - Alternative D – construct a new bridge adjacent to the existing bridge
- Most of the study area is in a naturalized state, composed of mixed successional forest communities and low-lying riparian zones.
- The study area has the potential to yield archaeological deposits of cultural heritage value or interest. The proposed undertaking has potential for archaeological impacts and a stage 2 archaeological assessment should also be undertaken.
- The Old Shiloh Road Bridge is an early and idiosyncratic example of a very common built form throughout the Province. This bridge meets the criteria set forth in O. Reg. 9/06: Criteria for Determining Cultural Heritage Value or Interest. Due to the significance of this bridge, a heritage impact assessment should also be undertaken.

Technical Memorandum #2

Work completed:

- The following weighted criteria were defined as the basis for comparing and evaluating potential solutions:
 - Physical factors: road geometry and alignment, structural stability and load restrictions, roadside protection, traffic operations, maintenance and snow removal.
 - Natural environment: fisheries/aquatic impacts, wildlife/terrestrial impacts, hydrology and hydraulics, vegetation impacts, and water quality.
 - Social factors: noise/construction impacts, emergency services, and community impacts.
 - Cultural heritage factors: archeological impacts, heritage impacts, First Nation impacts.
 - Economic factors: construction costs, future maintenance costs, property acquisition costs.
 - Climate change factors: impacts on climate change and resiliency to climate change.
- The following potential solutions were considered and evaluated at a preliminary level:

- Alternative A – do nothing (identified for baseline comparison purposes only - not considered a viable solution)
- Alternative B – rehabilitate the existing bridge
- Alternative C – remove and replace the bridge
- Alternative C1 – single lane bridge replacement
- Alternative C2 – double lane bridge replacement
- Alternative D – construct a new bridge adjacent to the existing bridge
- A Public Information Centre (PIC) was held on May 17, 2023.
 - The project information compiled to date was presented.
 - Commentary from attendees was solicited with emphasis on obtaining feedback on potential solutions, evaluation criteria, weighting factors, and the project team’s preliminary evaluation.
 - The feedback comment period was held open until June 14, 2023.

Overview of key findings:

- The following is the outcome of the preliminary evaluation of potential alternatives, ranked in order of preference:
 - 1) Remove and replace with two lane bridge (rated as the preliminary recommended option)
 - 2) Remove and replace with a single lane bridge
 - 3) Rehabilitate the existing bridge
 - 4) Do nothing (does not address the problem statement)
 - 5) Construct a new bridge adjacent to the existing bridge
- The preliminary evaluation identifying “Remove and replace with a two lane bridge” as the preferred alternative is reflective of the following major supportive factors:
 - Cost-effectively addresses the project problem statement.
 - Provides a long-term functional lifespan for the crossing, expected to be in the range of 80 to 100 years.
 - Eliminates load restrictions.
 - Improves traffic and pedestrian safety.
- A Public Information Centre (PIC) meeting was held on May 17, 2023 at the Udora Community Centre. Comments were received at the PIC and afterwards until June 14, 2023.
 - A total of 64 participant comments were received focusing on the following general topics (listed in decreasing order of the number of comments received):
 - Concerns re: high traffic volumes and speeds
 - Maintain heritage value through rehabilitation
 - Increase pedestrian safety
 - Widen bridge to accommodate farm equipment and eliminate load restrictions
 - Concerns re: environmental impacts of widened bridge
 - Maintain load restrictions

- Maintain hydraulic capacity and clearance for canoeists
- Concerns re: construction disturbance and detours
- Maintain trail access
- Concern re: construction cost
- Participant preferences for the alternatives were expressed as follows:

Alternative	Number of Persons Expressing Support
A – Do Nothing	5
B – Rehabilitate the existing bridge	21
C1 – Remove and replace with single lane	4
C2 – Remove and replace with two lane	10
D – Construct new single lane bridge adjacent to existing bridge	3

Technical Memorandum #3

Work completed:

- Focusing on the two options most supported by the public, a lifecycle cost analysis of alternatives B and C2 was completed.
- The natural environment impact study was updated, expanding on work completed in Technical Memo #1.
- A stage 2 archaeological assessment was completed as recommended in Technical Memo #1.
- A cultural heritage impact assessment was completed as recommended in Technical Memo #1.
- Evaluation and identification of the recommended preferred approach was finalized taking into account public feedback and the additional work tasks completed above.
- The following were defined to guide implementation of the recommended preferred approach:
 - Key design criteria
 - Remaining detailed investigations required
 - Permits that would be required
 - Options to mitigate cultural heritage impacts
 - Capital cost estimate
 - Implementation schedule

Overview of key findings:

- A list of measures for mitigation of potential impacts to the natural environment has been developed for incorporation into the future design and specifications.
- The stage 2 archaeological assessment concluded:

- The study area does not have potential for archaeological resources to be present due to the extensive past subsurface disturbances and the steep slopes; and,
- No further archaeological assessment of the area is warranted.
- Ideas to mitigate cultural heritage impacts considered included:
 - Reflect the architectural form of the historic bridge in the design of the replacement bridge.
 - Reuse all or part of the bridge at an alternate location.
 - Commemorate the historic bridge through erection of a monument, plaque or art installation which could include display of images, educational materials, physical model or component of the existing bridge.
- On consideration of a balance of all criteria and factoring in the public feedback received, alternative “C2 - Remove and replace with a two lane bridge” is recommended as the preferred approach.
 - Key factors influencing this decision include:
 - The substantial advantages offered by C2 in addressing the problem statement to achieve long-term safe, functional, operational and financial objectives for the crossing.
 - Alternative B fails to fully address the problem statement, delays the ultimate need to replace the bridge by only a few years, and carries substantially higher lifecycle costs.
- The preliminary cost estimate for “C2 - Remove and replace with a two lane bridge” is approximately \$4.9 million, with additional costs for commemorative measures spanning a wide range as follows:
 - \$750k to \$1.5M to construct the replacement bridge with an arched truss structure or façade.
 - \$100k to \$500k to reuse all or a portion of the bridge at an alternate location.
 - Nominal costs (allowable budget to be determined by Council) for heritage commemoration.
- The schedule for implementation of alternative C2 includes one year for engineering design followed by two years for construction.

Technical Memorandum #4

Technical Memorandum #4 (“*Old Shiloh Road Bridge, Class Environmental Assessment Project File Report*”) is a compilation of the entire work of the MCEA into the documentation format prescribed for submission by the Ontario Ministry of Conservation, Environment and Parks. As such, Technical Memorandum #4 contains information that is already addressed in Technical Memoranda 1, 2 & 3, summarized above. A draft of Technical Memorandum #4 is attached to this report for reference.

Next Steps

Due to risk exposures posed by continuing deterioration of the bridge, implementation of the recommended replacement should proceed in as timely a manner as practical. To support this, it is envisioned that the bridge replacement works will be conducted in parallel to cultural heritage commemoration activities, as summarized in the following table:

Track	Steps and Description	Planned Timing
A.	<i>Bridge Replacement:</i> <ol style="list-style-type: none"> 1. Submission of the draft “<i>Old Shiloh Road Bridge, Class Environmental Assessment Project File Report</i>” to the Ontario Ministry of Environment, Conservation and Parks for MECP internal review 2. Issue Notice of Study Completion and posting of the project file report for public/agency review and comment 3. Preliminary engineering design 4. Detailed design and construction 	<p>March/April 2024</p> <p>May/June 2024</p> <p>May to December 2024</p> <p>2025 to 2026*</p>
B.	<i>Heritage Cultural Commemoration:</i> <ol style="list-style-type: none"> 1. Assessment of commemorative options and selection of preferred approach 2. Implementation of commemorative approach 	<p>July 2024</p> <p>To be determined</p>

*This is a proposed timeline at this stage of the project

5. RELATIONSHIP TO STRATEGIC PLAN:

Delivering Service Excellence:

- Proactively manage infrastructure and assets to ensure service continuity.

6. FINANCIAL AND BUDGETARY IMPACT:

Capital business case 22-CI-OI-22 with an associated \$100,000 budget was approved by Council in 2022 to undertake a Schedule B Municipal Class Environmental Assessment (MCEA). An existing approved capital business case 20-OI-5, which proposed hydrological and geotechnical studies for the same structure, was used to support completion of these same studies directly associated with the MCEA.

Capital business case 24-CI-OI-16 was approved by Council in 2023 to proceed with preliminary design of the preferred solution as recommended by the MCEA. The budget amount approved was \$250,000.

The table below outlines the total approved budget, committed and remaining funds.

Item	Amount (\$ incl. 1.76% HST)
Funding approval for business cases 22-CI-OI-12 & 20-OI-5 (Council Resolution C-2022-0215)	\$146,000.00
Old Shiloh Road Bridge Municipal Class Environmental Assessment (OID2022-074)	-\$132,491.52
Balance*	\$13,508.48
<i>*Subject to Council's authorization to submit the completed MCEA, the remaining funds will be available to address any feedback from the MECP</i>	
Funding approval for business case 24-CI-OI-16 (Old Shiloh: Preliminary Engineering Design)	\$250,000.00

It is important to recognize that complex multi-year projects such as this, inherently have a higher degree of uncertainty in these early stages of planning and conceptualization. These cost-estimating uncertainties relate primarily to: the need to complete additional investigations to fully understand and be able to accommodate existing conditions; refinement of criteria and approaches as the design advances; and, volatile economic conditions related to labour and materials within the construction industry.

The budget costs presented in the MCEA are based on information that is currently available, the concepts that have been developed to this point, and reasonable costing yardsticks. Cost estimating precision and reliability will increase as the project continues to progress through the preliminary and detailed design stages as additional information is obtained and refined.

Staff will bring forward future business case(s) for Council's consideration in the applicable budget years, which will address the detailed design and construction phases of this project and reflect the best budgetary information available at each stage of the project.

7. PUBLIC CONSULTATION AND NOTICE REQUIREMENTS:

Public consultation and feedback has been an important source of information contributing and guiding the project. The project has followed and expanded on the public consultation and notification requirements of a Schedule B Municipal Class Environmental Assessment as detailed in the MCEA documentation and summarized below:

Public Consultation Activities	Date	Role in Schedule B MCEA
Notice of Study Commencement - Website publication - Delivery to local property owners and stakeholder groups - On-site project signage	March 30, 2023 to April 13, 2023	Mandatory
Notice of Public Information Centre - Website publication - Delivery to local property owners and stakeholder groups - Publication in local newspaper	April 26, 2023 to May 11, 2023	Enhancement
Public Information Centre	May 17, 2023	Enhancement
Website/Social Media Posting of Project Documents	Continuous	Enhancement
Notice of Project Completion	Timing subject to submission to MECP and review	Mandatory

During the future engineering and construction phases of the project, staff will continue to keep local residents, Council and stakeholder groups informed as to the progress of the project with briefing notes, website, project status updates, notifications in advance of commencement of construction works and other communications as may be required.

8. CONCLUSION:

The Old Shiloh Road Bridge MCEA has followed a thorough decision-making process, driven by facts and evidence while also taking into account the thoughts, opinions and perspectives of residents and stakeholder groups. Completion of the MCEA and implementation of the recommended preferred approach – replacement with a new two lane bridge – provides a safe, functional and cost-effective solution for the long-term.

APPROVALS

Prepared By: Neil MacDonald P.Eng. Manager, Capital Delivery

Reviewed By: Rob Wheeler, Treasurer/ Deputy Chief Administrative Officer

Recommended By: Michael Vos, Director, Operations and Infrastructure

Approved By: Ryan Cronsberry, Chief Administrative Officer

Attachments: Draft report entitled “Old Shiloh Road Bridge, Class Environmental Assessment Project File Report”, dated February 6, 2024, prepared by Tatham Engineering.

- Technical Memorandum No. 4 - Revised Draft
 - Appendix A - Photo Inventory
 - Appendix B - Hydraulic Assessment Data
 - Appendix C - Notice of Study Commencement
 - Appendix D - Existing Site Plan
 - Appendix E - 2022-984 DRAFT Stage 1 (12 December 2023)
 - Appendix F - CHER
 - Appendix G - PIC and Consultation
 - Appendix I - 2022-986 Old Shiloh Road Bridge HIA 22 Jan 2024
 - Appendix J - 222-261 RiverStone EIS, Old Shiloh Bridge EA Georgina, Jan 2024
 - Appendix K - Conceptual Design Drawings
 - Appendix L - Cost Estimate - Replace with Two Lane Bridge