



Georgian Bluffs



PEARSON
ENGINEERING

SCHEDULE
MUNCIPAL CLASS
ENVIRONMENTAL
ASSESSMENT

STRUCTURE
D-0007
SIDEROAD 3

TOWNSHIP OF
GEORGIAN BLUFFS
COUNTY OF GREY

AGENDA

- Project Location
- Existing Conditions
- Study Purpose
- Stakeholder Considerations
- Background Studies
- Municipal Class EA Process
- Evaluation Criteria
- Alternative Solutions
- Alternative Solution Evaluation
- Preferred Design Alternative
- Question Contacts

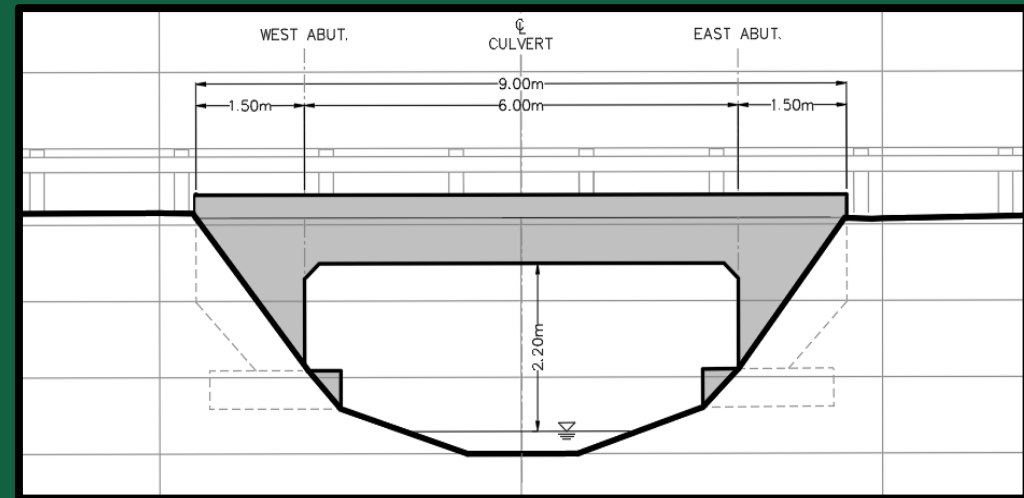


EXISTING CONDITIONS

The existing structure consists of a cast-in-place, open bottom, concrete rigid frame complete with a steel beam guiderail barrier system on either side of the roadway. The structure has an overall span of 6.0m and a rise of 2.2m measured from centerline of creek. Based on previous OSIM inspection reports and information provided by the Town, the structure was constructed in approximately 1925.



Structure D-0007 underwent a load evaluation in 2010 and was permanently closed to traffic in 2018 due to continued deterioration. The wingwalls are experiencing wide shear cracking and outward rotation. The foundations are exposed due to scouring and exhibiting severe. The abutment walls are in poor condition with wide cracks in multiple locations.



EXISTING CONDITIONS



View of Structure Facing East



View of Spalling on East Abutment



View of Wide Crack & Rotation at Wingwall



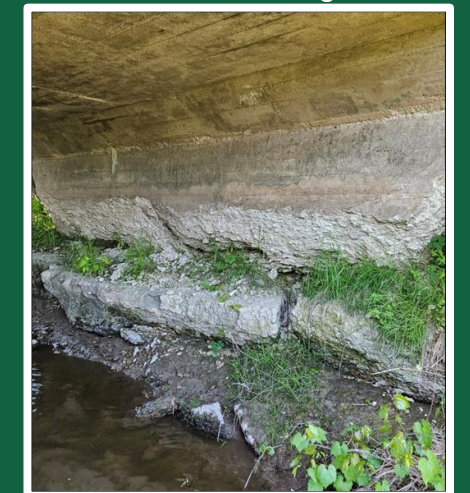
View of Wide Cracking at West Footing



View of Interior Soffit



View of Wide Cracking at Abutment/Wingwall



View of West Footing and Abutment Wall

STUDY PURPOSE

As per the biennial visual inspection completed by Pearson Engineering Ltd. in accordance with the Ontario Structure Inspection Manual (OSIM) in 2024, the existing structure is considered to be in overall poor condition with advanced deterioration.

The existing structure is currently closed to all traffic loads due to load carrying capacity concerns. Structure D-0007 serves as a connection for traffic on Sideroad 3, between Concession 11 and the Grey Bruce Line.

The Township of Georgian Bluffs initiated a Municipal Class Environmental Assessment (MCEA) in September 2024 to consider multiple design alternatives prior to selecting a preferred solution. Multiple background studies and investigations have been completed to support this process.



STAKEHOLDER CONSIDERATIONS

GREY SAUBLE CONSERVATION AUTHORITY (GSCA)

Since the structure is located within the Grey Sauble Conservation Authority (GSCA) regulated limits, permit approval will be required. Conservation authorities regulate activities to manage natural hazards and protect ecosystems. The permitting process ensures that the project will not negatively impact the environment, particularly adjacent watercourse and wetlands.

ONTARIO FEDERATION OF SNOWMOBILE CLUBS (OFSC)

Structure D-0007 has been historically utilized in the past as a part of the OFSC trail system. Snowmobile trails often attract tourists, contributing to the local economy through spending on fuel, food, and other services. The removal of a bridge can disrupt the continuity of a snowmobile trail network, making certain routes inaccessible and/or potentially isolating parts of the trail system. The assessment of the structure should consider the potential of a reduced number of trail users (visitors), negatively impacting local businesses.



2025 Grey County Maps – Public GIS Site



Historical OFSC Mapping



STAKEHOLDER CONSIDERATIONS

LOCAL RESIDENTS/BUSINESSES

- Sideroad 3 is currently home to one private residential dwelling (west of structure), as well as several agricultural field entrances.
- Properties located east and west of the existing structure are owned by the same private landowner.
- Concession 11 between Grey Road 5 and Grey Road 16 has a total of five private residential dwellings, as well as a functional gravel pit owned by E.C. King Contracting.
- The gravel road spans one concession terminating at the Grey Bruce Line and Concession 11, where a Grey Sauble Conservation Authority wetlands is located.
- The Sideroad 3 traffic count is classified as “low” to “very Low” (ADT \leq 12). It should be noted that due to the closure of the structure, current traffic loading data may be skewed.



STAKEHOLDER CONSIDERATIONS

TOWNSHIP OF GEORGIAN BLUFFS

- The Township of Georgian Bluffs currently boasts an inventory of 16 bridges and 30 culverts.
- Based on the asset management information prepared by Pearson Engineering during the 2024 Biennial OSIM Inspection Program, the average replacement cost of the Township's bridge and culvert inventory is approximately \$1,250,000 per structure (2024 \$).
- As per the '10-Year Capital Works Plan' prepared by Pearson Engineering in 2024, 13% of all bridges and 16% of all culverts in the Township's inventory are considered in poor condition.
- A total of 35 rehabilitation / replacement projects are recommended between 2026 to 2034.
- The total project cost estimate for the '10-Year Capital Needs Plan' is ± \$19,000,000 assuming 3% inflation per year.
- Therefore, the Township needs to be allocating approximately \$1,900,000 / year into their annual budget for upcoming bridge and culvert work.



BACKGROUND STUDIES

CULTURAL HERITAGE EVALUATION REPORT

- Fieldwork completed by TMHC October 17th, 2024.
- Investigated a total of nine (9) areas of potential heritage value in accordance with the Ontario Heritage Act (O.REG. 9/06).
- The report determined that the rigid frame design of the culvert exhibits an early example of its style.
- TMHC concluded in their evaluation report that the structure only meets 1 of the 9 criteria (Design/Physical Value) for determining heritage value. Therefore, no further heritage evaluation is required.

ARCHAEOLOGICAL ASSESSMENT - STAGE 1

- Fieldwork completed by TMHC October 22nd, 2024.
- Investigated multiple information sources to verify past settlement history and previous archeological studies close to the project site.
- TMHC concluded in their Archaeological Assessment Report that areas within the Municipal right-of-way have been previously disturbed and have no archeological value. Areas beyond the right-of-way limits may have low potential archeological value.
- Given that any construction activities completed in the future at the bridge site can be restricted to the limits of the Municipal right-of-way, no further Archaeological Assessment is required.



BACKGROUND STUDIES

NATURAL ENVIRONMENT STUDY

- Fieldwork completed by Cambium Inc. October 17th, 2024.
- The report outlines potential habitats for bird, reptile, amphibian and invertebrate species designated as Species at Risk (no fish species).
- Cambium concluded that protection measures can be implemented during construction to mitigate harmful impacts to the surrounding environment.
- Necessary permits should be obtained from DFO and GSCA prior to construction.

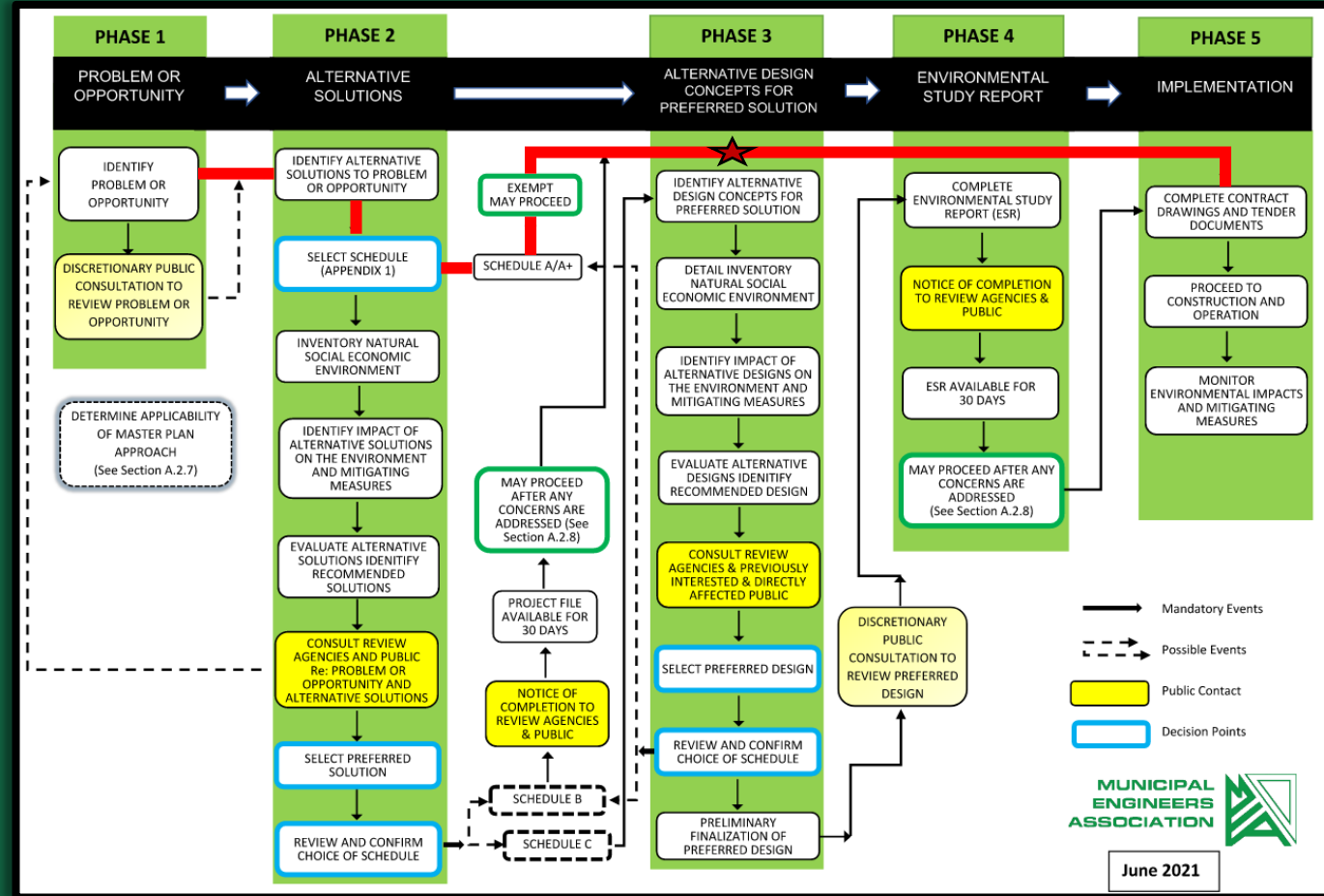
HYDROLOGY & HYDRAULIC ASSESSMENT REPORT

- Survey by Pearson Engineering Ltd. October 16th, 2024
- Investigated multiple information sources to verify past settlement history and previous archeological studies close to the project site.
- The existing structure was found to have a headwater elevation of 240.59 meters above sea level at a peak flow of 20.5m³/s meeting the local 100-year storm event.
- The hydrological modelling information was utilized to verify hydraulic sizing requirements for multiple design alternatives.



MUNICIPAL CLASS EA PROCESS

- Based on the completed background studies, it has been determined that the MCEA is classified as an “Exempt” project (previously known as Schedule ‘A/A+’) in accordance with Section 31a of the MCEA User Guide developed by the MEA.
- Table A - Section 31a – Reconstruction of, or alteration to a structure or the grading adjacent to it, when the structure is over 40 years old and has been found not to have cultural heritage value or interest.
- Currently, the project is between Phase 2 and 5 of the MCEA flow chart shown.
- As directed by the Township, the project is evaluating the feasibility, cost and overall impact of multiple design alternatives.
- The design alternatives are evaluated based on a set of criteria described on the following slide.



EVALUATION CRITERIA

GENERAL

- Ability to address the Problem Statement.

NATURAL

- Protection of the natural and physical environment.
- Includes considerations for water, wildlife, air and vegetation, as well as species at risk environmentally sensitive habitats.

SOCIAL

- Road usage, traffic movements and availability of alternative routes.
- Access to emergency services.
- Active transportation networks include connection to trail systems.

CULTURAL

- Protection of archaeological and/or cultural heritage resources.
- Cultural landscapes, fixed archaeological structures on land and water, and built environments.

ECONOMIC

- Construction costs, long term operating costs and maintenance costs.
- Overall municipal transportation system and potential capital commitments.
- Potential risks associated with Townships liability.

TECHNICAL

- Type and complexity of construction.
- Future maintenance requirements (short and long term).
- CHBDC and road design standards.



ALTERNATIVE SOLUTIONS

The following alternatives were identified to address the structural deficiencies, continued deterioration and safety risks associated with Structure D-0007.

#	Alternative	Estimated Useful Service Life	Description
1	Do Nothing (Maintain Existing Structure)	N/A	Maintain bridge closure and consider restricting all traffic types. Reassess in 3-5 years.
2	Rehabilitation	N/A	Rehabilitation of Structure D-0007 is not feasible due to severely deteriorated condition of the structure.
3A	Precast Concrete Box Culvert	75-90 Years	Replacement of Structure D-0007 with a precast concrete box culvert complete with new guiderail barriers, roadway widening and segmental block retaining walls on each end of the culvert.
3B	Twin SPCSP Culverts	40-60 Years	Replacement of Structure D-0007 with a twin structural plate corrugated steel pipe (SPCSP) culverts complete with new guiderail barriers, roadway widening and segmental block retaining walls on each end of the culvert. Creek realignment may be necessary.
4	Permanent Removal	N/A	Excavation and removal of Structure D-0007 structure, as well as reinstatement of creek embankments. Installation of roadway turnarounds, barricades and signage.



QUESTION CONTACTS

Township of Georgian Bluffs

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