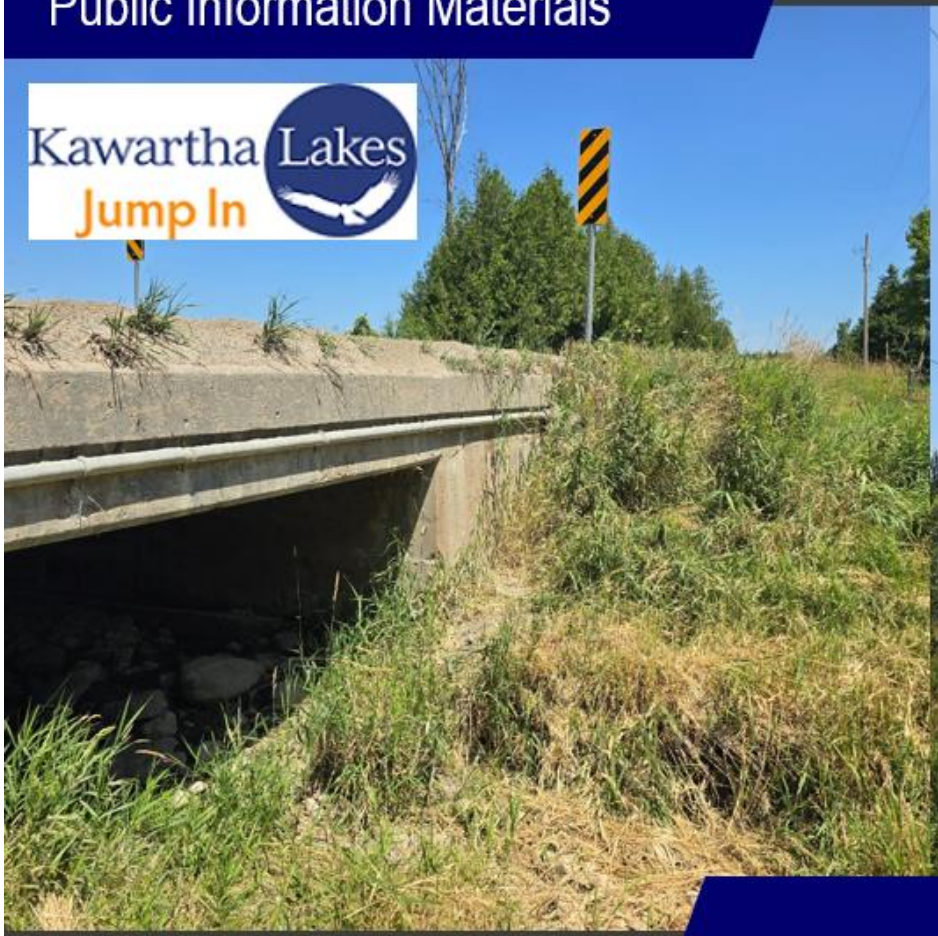
Public Information Materials



Engineering Services for the Replacement of the Mustang Dr. Bridges

Site Investigations and Detailed Design

PLANMAC ENGINEERING INC.

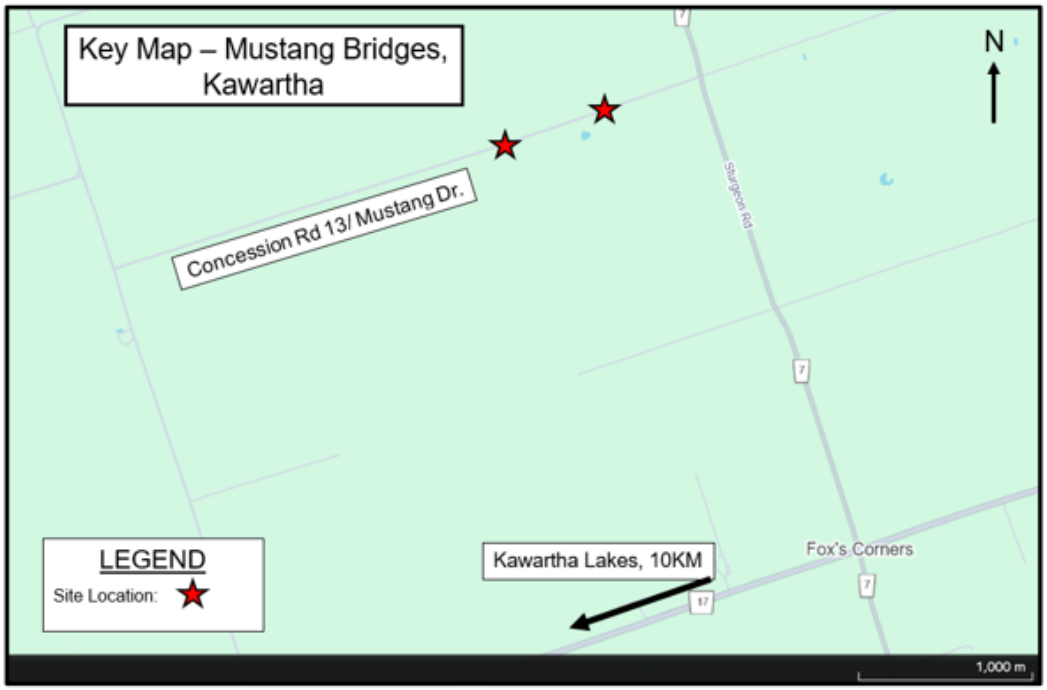
Date: November 19, 2025

Introduction

- We encourage your input and feedback.
- If you have any comments, please complete the comment sheet provided with these slides and send via email to the following address on or before **December 17th, 2025: mneumann@planmac.com**
- There is an opportunity at any time during the Detail Design process for interested persons to provide written input.
- Any comments received will be collected under the *Freedom of Information and Protection of Privacy Act* and, with the exception of personal information, will become part of the public record.

Municipal Class Environmental Assessment

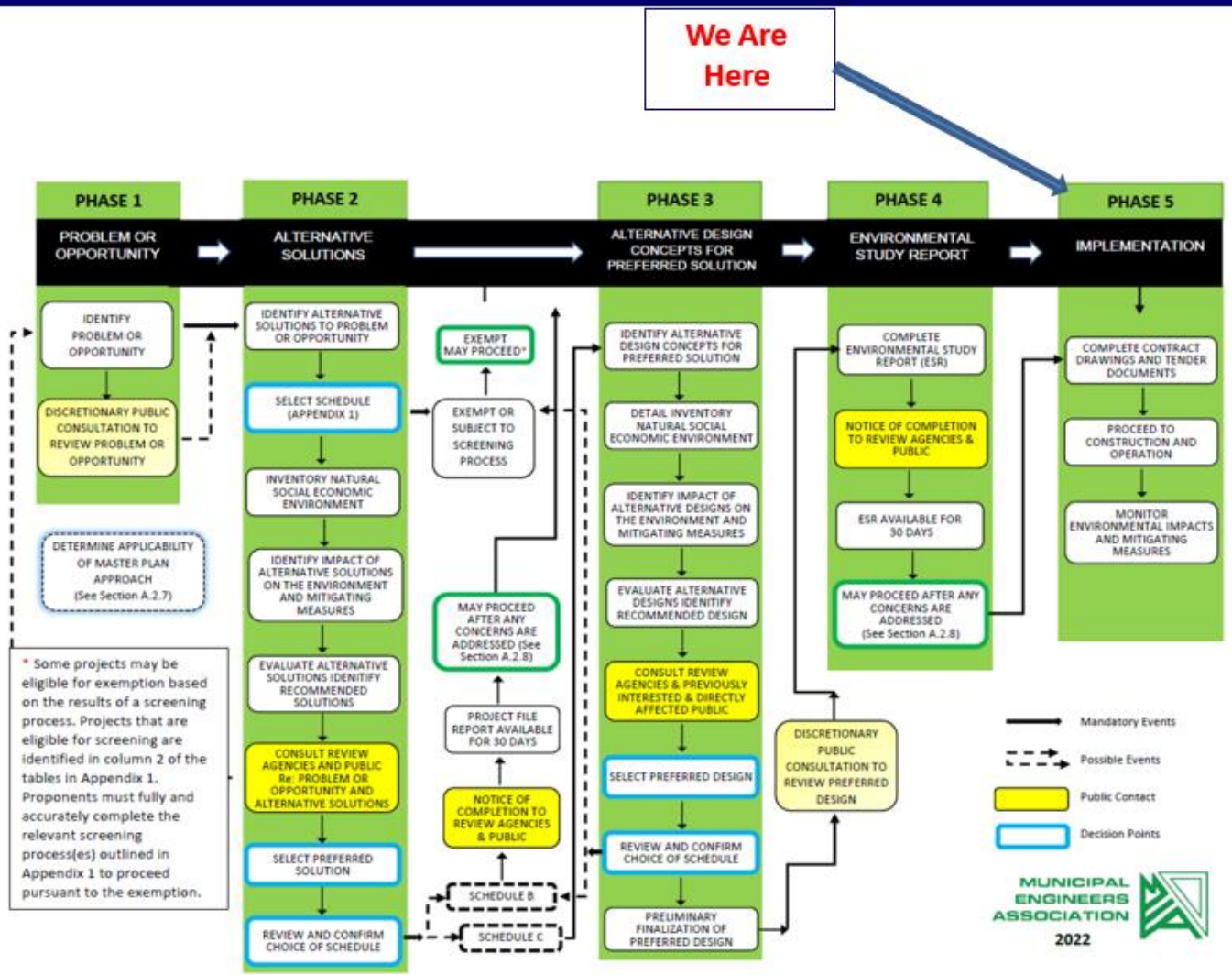
- The site location is provided below on the Key Map.
- The purpose of the public information materials is to present the Design to date, technical investigations completed, the alternative solutions for the future of the bridge, and a Preliminary Preferred Alternative Solution. Comments on the materials are encouraged to aid design development.
- This project is classified as an 'Exempt' project under the Municipal Class Environmental Assessment (2000, as amended in 2007, 2011, 2015, and 2024). Exempt activities are pre-approved. As such, the City may proceed to the implementation phase (i.e. design and construction) without following the procedures set out in any other part of the Class EA.



Mustang Drive Bridges Site Investigations and Detailed Design

MUNICIPAL CLASS EA PLANNING & DESIGN PROCESS

As 'Exempt' projects are pre-approved, Phases 1 - 4 are optional. The project instead follows a similar process of careful investigation, analysis and design to discover and implement the "best-fit" solution for the City and Stakeholders.



Existing Site Conditions/Constraints

- Bridge B100032 is located on Mustang Drive approximately 1,000 metres west of County Road 7 (Sturgeon Road), while Bridge B100033 is located approximately 500 metres west of County Road 7, also along Mustang Drive. Both structures are currently functioning as two-lane bridges but lack side safety barriers.

- Based on the Ontario Structure Inspection Manual (OSIM) records and our detailed visual inspection, both structures are classified in **fair to poor condition requiring rehabilitation or replacement with 1-5 years.**

- Due to the existing size of the culverts, there is not enough space to economically widen the road and lengthen the culverts to install appropriate protective barriers. Since the structures are in an extreme state of deterioration, full-replacement of the bridges provides greater long-term value and functionality for the City and Stakeholders.

Technical Studies Completed

- OSIM Inspection – Standardized structural inspection conducted in Ontario that assess all features of a given structure. This inspection provides an opinion of the remaining service life of the structure

- Geotechnical Investigation – Geotechnical Investigations were undertaken to determine the underlying conditions and inform the design for the foundations of replacement structures.

- Environmental studies will be limited to gaining approval from Kawartha Lakes Conservation Authority under O.Reg 178/06, along with development of strict mitigation measures for construction (e.g. erosion and sediment control measures) to protect fisheries and the natural environment.

Design Alternatives

- As part of many environmental studies and design processes for similar municipal projects, several alternatives are created and designed to a preliminary level to allow the complete involved team to assess the advantages and draw backs of these alternatives. The following alternatives were presented for this project:

- Option 1: Rehabilitation – Recommended repairs are conducted on the bridge structure.
- Option 2: Replacement with single cell reinforced concrete open bottom box culvert.
- Option 3: Single Span semi-integral bridge with hollow-core slab (Concrete) superstructure.
- Option 4: Single Span prefabricated steel bridge.

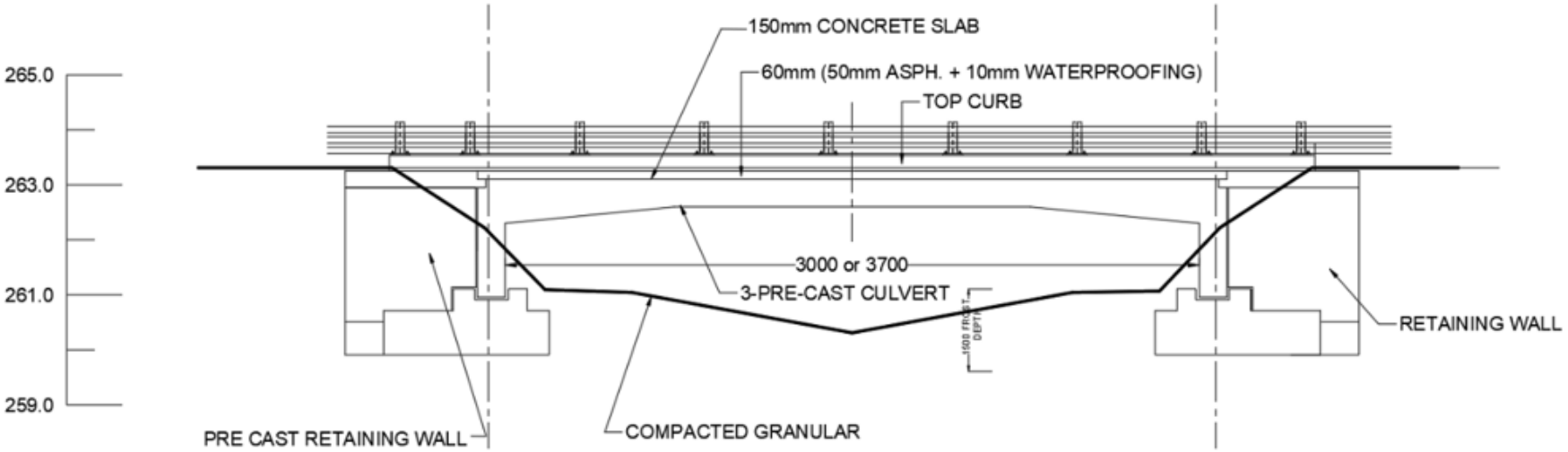
Recommended Design Alternative

- **The Project Team has recommended Option 2 as the preferred alternative**

- Option 1 was not evaluated due to the very high cost, and low expected lifespan of a rehabilitation on a culvert of this size and type.
- Options 2-4 were evaluated based on construction cost, ease of constructability, material consumption, ease of maintenance, and aesthetics.
- Option 2 scored best overall, and the best in all categories except for material consumption.

Metrics	Box Culvert	Single span-semi-integral hollow core slabs bridge	Single span prefabricated steel bridge
Construction Cost (6)	6	5.7	5.8
Ease of Constructability (5)	5	4.2	4.6
Material Consumption (4)	3.2	3.0	4
Ease of Maintenance (3)	3.0	2.8	2.5
Aesthetics (2)	2	1.6	1.5
Total (20)	19.2	17.3	18.4

Design Drawings: Option 2: Example of Open Bottom Box Culvert



Design/Construction Considerations

- Environmental impacts will be taken into consideration through implementation of construction methods and procedures to minimize impact on several different aspects of the study area. This includes considering the impact on vegetation, erosion and sediment control and soil contamination.
- All applicable legal regulations pertaining to engineering design and environmental impact mitigation will be followed during the design and pre-construction process.
- The Proposed Culvert will have an overall length of 7.5 m, allowing for 0.50 m curbs on either side and two standard, 3.25m traffic lanes. This widening will allow appropriate space for larger farm equipment to use it safely. A 2% slope will be incorporated to facilitate better drainage, the decks will have asphalt wearing surfaces, and the structure will feature modern, compliant guide rail barriers.

Next Steps

- Review and consider public comments.
- Receive permitting from Kawartha Lakes Conservation Authority and complete the Detailed Design.
- Prepare Construction Tender Document.
- Initiate Construction and Contract Administration.

YOUR COMMENTS ARE IMPORTANT TO US

Please complete a Comment Sheet provided and email or mail to either of the below contacts on or before **December 17th, 2025**:

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