



## THE CORPORATION OF THE MUNICIPALITY OF KINCARDINE

**Subject:** Concession 5 Bridge Environmental Assessment

**Director:** Infrastructure & Development

**Manager:** Operations

**Report Number:** Operations-2022-12

**Meeting Date:** Monday, February 13, 2023

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**Recommendation:** THAT Council adopt the solution identified in Report Number 2022-12 that positions Alternative 1- replacement of the existing single lane bridge (Structure 2121) with a steel beam bridge as the preferred option;

AND FURTHER THAT the project be included in the 2024 Capital Budget Plan.

**Date to be considered by Council:** Monday, February 13, 2023

**Report Summary:**

The Campbell Bridge (Structure 2121) is in the former Township of Kincardine along Concession 5. The existing structure is a single lane rigid frame concrete bridge, constructed more than 50 years ago. The 2021 OSIM inspections gave the structure a BCI rating of 21 (BCI less than 60=poor). The inspection also indicated a remaining site life on the structure to be estimated at less than 5 years and at that time the structure would require closure. Recent engineering inspections of the structure identified several structural components of the bridge in an advanced state of deterioration. The road approaches are also quite steep and currently meet a 60 km/hr design speed. Given these issues it was determined that replacement of the structure is recommended. If a structure receives a BCI of less than 40 rehabilitation is not advised. Replacement of the existing structure will improve the road network in the vicinity of the bridge site and address existing capacity and structural deficiencies.

**Origin:** OSIM Bridge Need Study

**Existing Policy:** N/A

**Background/Analysis:**

The Municipality of Kincardine initiated a Class Environmental Assessment study in May of 2014 to identify the best strategy for resolving structural deficiencies identified with the Campbell Bridge (Structure 2121), which spans a tributary of the North Penetangore River in the former Township of Kincardine. With the study having been incomplete, staff in recent years requested support and funding from Council to complete the remaining requirements to close out the EA. The study process followed the procedures set out in the Municipal Class Environmental Assessment (Class EA) document. B. M. Ross and Associates Limited (BMROSS) were engaged to conduct the Class EA investigation on behalf of the Municipality.

The Class EA investigation involved an evaluation of options to resolve deficiencies identified with the bridge. The framework of the study built upon recommendations from recent engineering inspections, which identified problems with the approaches and structural integrity of the bridge structure. It was identified at the outset of the Class EA process that the proposed project may include components which would categorize the work as a Schedule B activity (e.g., reconstruction or alteration of a structure over 40 years old, determined to have cultural heritage value). For this reason, the assessment followed the environmental screening process prescribed for Schedule B projects under the Class EA document. The process is now complete, and a detailed report has been received.

As detailed in the report, four alternative solutions identified were as follows:

- Alternative 1 – Replace the existing bridge with a steel beam bridge.
- Alternative 2 – Replace the existing bridge with 2 pipe arches.
- Alternative 3 – Replace the existing bridge with a pre-cast arch.
- Alternative 4 – Do Nothing

The preferred option is Alternative 1, reconstruction of approach roads and construction of a steel beam bridge. There are a number of attributes associated with this alternative which justified its consideration as the preferred plan (listed below):

- Represents the most practical option from a safety and engineering perspective;
- Resolves structural deficiencies present in the current structure;
- Addresses capacity limitations present with the existing single lane structure;
- Addresses concerns with the steep road approaches;
- Presents fewer impacts to adjacent natural areas by limiting construction impacts to the defined stream channel.
- Less expensive to construct and less technically complex than the arch pipe alternatives.

The preferred alternative represents the most practical approach to resolving the defined problems with the existing bridge structure. The project will consist of replacing the existing 15.24 m span rigid frame bridge on a 45° skew with a 23.3-

meter single span steel beam bridge and will also include the reconstruction of approximately 200 meters of roadway to improve the approach roads adjacent to the bridge. The estimated cost of the project is \$3.75 million.

**Integrated Strategy 2020 – 2025 - Sustainable Practices:** The Municipality is progressive in its efforts to maintain and build out infrastructure, its operational practices and managing finances.

**Financial Implications:** The project will be included in the 2024 Capital Budget

**Attachments:**

Link to Class Environmental Assessment for Replacement of Structure 2121  
Screening Report

<https://www.kincardine.ca/Modules/News/index.aspx?newsId=7ee52794-b0b3-4b3a-8656-2284d0fda232>

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