



Meeting Date: June 7, 2023

Submitted by: Rob Cascaden, P.Eng – Director, Public Works and Engineering

Prepared by: Andrew Giesen, C.E.T, PMP Transportation Manager

Report No: PWE 28-2023

Subject: Ivan Drive Culvert

Recommendation:

THAT Report PWE-28-2023, re: Ivan Drive Culvert be received for information;

Purpose:

To advise Council and residents of a culvert on Ivan Drive and to recommend that this capital item be brought forward in the 2024 budget.

Background:

On May 23, 2023, staff were alerted to significant structural deterioration to a culvert located on Ivan Drive located approximately 520m east of Coldstream Road.

Analysis:

Upon staff being advised of the deterioration of a culvert located on Ivan Drive, staff further discussed with the structural engineering firm undertaking the municipalities Ontario Structural Inspection Manual (OSIM) inspections, and several options were reviewed. A review letter completed by B.M Ross is attached in Appendix A.

The structure contains large wide vertical cracks on the southwest wingwall that extend to the abutment face just above the footing. In addition to wide cracks along the footing and west abutment, there are several defects that are affecting the performance and safety of the structure (images included below).

Wide Cracking at Footing:



Wide Cracking of Abutment Face to Footing:



Option #1 – Road Closure:

This option was reviewed and considered but given the impact to the community and length of a detour route, in addition to the structure still being passable to vehicles weighing 5 tonnes or less, this option was discarded in favour of option #2.

Option #2 – Emergency 5 Tonne Load Limit

This option was reviewed with the structural consulting engineers and deemed to be the most prudent course of action. This will still allow for light vehicle access over the culvert, while limiting larger vehicles that will accelerate and/or ultimately cause the structure to fail.

As a result of the review, staff implemented an emergency 5 tonne load limit on Ivan Drive at the culvert location. Residents and heavy vehicles will still have access to Ivan Drive from Coldstream Road or Nairn Road using Ivan Drive. However, they are not permitted to cross the culvert. Signs advising of the load limit have been placed on Ivan Drive at Coldstream Road and Nairn Road as well as at the culvert location advising of the load limit in affect.

Financial Implications:

Staff are recommending through the 2024 budget process that the culvert on Ivan Drive be considered for capital replacement.

Strategic Plan:

This matter aligns with following strategic priorities:

- Sustainable Infrastructure and Services

To ensure a safe and reliable transportation, network staff are looking to minimize impacts to residents of Ivan Drive while ensuring the safety of the transportation network.

Attachments:

Appendix A – BM Ross and Associated Limited – Ivan Drive Culvert Review Letter.