

THE CORPORATION OF THE CITY OF SARNIA
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ENGINEERING DEPARTMENT

OPEN SESSION REPORT

TO: Mayor Bradley and Members of Sarnia City Council

FROM: J.P. André Morin, P.Eng., City Engineer

DATE: August 5, 2014

SUBJECT: Cull Drain Pedestrian Bridge – Urgent Action

Recommendation:

It is recommended:

1. That Sarnia City Council direct staff to immediately take steps to remove the Cull Drain Bridge in the interest of public safety, with the costs of this removal to be funded from the Rehabilitation of Various Structures (Bridges and Culverts) capital funding.

Background:

The Cull Drain bridge was inspected on July 31, 2014, by Engineered Management Systems Inc., as part of our bi-annual, Ministry of Transportation Ontario (MTO) mandated bridge inspection program. The inspection revealed an immediate safety concern of potential bridge collapse. The report recommended that the bridge be removed immediately. A copy of the inspection report is attached.

Comments:

The bridge was closed to pedestrian traffic in September of 2012. Significant fencing and signage was installed to prevent the public from using the bridge and the underside of the bridge. The fencing and the signage has been the target of a great deal of vandalism. The fencing has been repaired many times and graffiti removed as much as is possible. It is clear that the public continue to attempt to use the bridge and specifically the area under the bridge.

Additional fencing was installed on Saturday, August 2, 2014, to the underside area of the bridge with the intention to better prevent the public from accessing this area. New warning signs are also being installed that explicitly warn of potential bridge collapse. This new fencing is a temporary

measure only as it is at risk of being washed away with the next rainfall event or if there is a significant north wind.

Consultation:

A number of bridge engineering consulting firms have been consulted throughout the investigative work on this bridge. These include MIG Engineering, B.M. Ross and Associates, and Engineered Management Systems Inc.

Staff have contacted and consulted with the St. Clair Region Conservation Authority, and will work with them to acquire all necessary approvals to work within the creek during removal of the bridge.

Financial Implications:

The approximate cost estimate received in October 2012, to remove the bridge was \$51,000. The cost for removal of the bridge in its current further deteriorated state is anticipated to be higher than the initial \$51,000, due to certain components of the structure having failed and leading to a possible total or partial collapse during the removal if proper steps are not taken. Staff will attempt to secure competitive pricing on the removal and will work to keep costs as low as possible. Staff will report back to Council on the final cost of removal once the project is complete.

Staff is appreciative of the historical significance of some of the components of this bridge. However, in order to lift the bridge and attempt to move it to another location through an engineered lift, or any attempts to salvage the trusses during removal, would significantly increase the cost and the amount of time required to remove the structure. There would be increased engineering costs and construction costs to attempt a salvage of the existing trusses, with a conservative estimate of 2 or 3 times the cost of simply removing the bridge.

With a number of other competing infrastructure priorities for capital funding throughout the community and in light of the recommendation to immediately remove the structure, staff is not prepared to recommend a more complicated and costly option of salvaging any of the structure during the removal process.

It is proposed to fund this project from the "Rehabilitation of Various Structures (Bridges and Culverts)" capital funding which has a current uncommitted balance of \$499,883.

A capital project for construction of a new pedestrian bridge in this area to replace the removed structure will be brought before Council as part of the 2015 Capital Budget deliberations along with a report on the findings and recommendations regarding the Old Lakeshore Road right-of-way and

easement agreements as outlined in the report to Council at the June 30th, 2014 meeting.

Reviewed by:



J.P. André Morin, P.Eng.
City Engineer

Approved by:



Margaret Misek-Evans
City Manager

This report was prepared by Robert Williams, Construction Manager.

Attachment(s): Engineered Management Systems Inc. – Safety Critical
Report 2014-001



SAFETY CRITICAL REPORT 2014 - 001

Site: 000310
Address: Old Lakeshore Road Over Cull Drain Bridge
Inspected By: M. Serban
Inspection Date: July 31, 2014

Attention: Robert Williams, Construction Manager

URGENT ACTION REQUIRED – This superstructure should be removed immediately. Partial or total collapse may occur even as a result of high winds.

The bridge is currently closed to pedestrian/vehicular traffic; however, the underside can still be accessed from all four corners and from the water. Apart from the obvious hazard to public safety, collapse would also block the waterway which is at least partially navigable.

All warning signs at the east are in poor condition and some of the signs at the west are also damaged (graffiti).



The bottom chords are completely severed at the west end while at the east they are almost completely severed. The top chords are buckled.



Stringers at the east end are in very poor condition as is the concrete deck which poses at the very least an overhead falling debris hazard.



Both end sections of the deck have dropped together with the floor beams on the bearing seats as the floor beams are completely detached from the truss (failure of these deck sections could trigger collapse of the entire superstructure). The east section of the deck is in an advanced state of deterioration.



The northeast bearing seat has failed and the northeast wing wall should be partially removed as well.



If you have any questions regarding the contents of this report please do not hesitate to contact the undersigned.

Respectfully submitted by;

Engineered Management Systems Inc.

A handwritten signature in black ink, appearing to read 'M. C. Wallrap'.

M. C. Wallrap, P. Eng.
President

