



MUNICIPALITY OF
**HURON
SHORES**

Dean Lake Bridge

Presented by:

Infrastructure Services Committee

Councillor Tim Currie

Councillor Jock Pirrie

Councillor Roger Mulligan


huronshores.ca

Why are we here?

Agenda


- History
- Current state
- Options
- Current actions and next steps



Dean Lake Bridge



- Located ~8 km southeast of the Village of Iron Bridge
- Three (3) span through truss bridge, ~111m long.
- Built in 1908; undergone several rehabilitations in its history



Rehabilitation in 1963

(55 yrs)

- ✓ Original timber deck replaced with 3" thick creosote timber deck;
- ✓ Replacement of original stringers from 9" channels and beams to 8" channels and beams



Major Rehabilitation in 1988

(80 yrs)

Replacement of:

- ✓ Old 3" timber creosote deck with new 2X6 on edge pressure treated timber deck;
- ✓ Elastomeric bearing pads;
- ✓ New concrete ballast walls;
- ✓ New flex beam guiderails on wooden posts on the approaches and on the structure;
- ✓ Replacement/modification to existing stringer beams; and
- ✓ Reinforcing/modifications to gusset plates.



Rehabilitation in 2008

(100 yrs)

- ✓ Replace 2X6 on edge pressure treated timber deck with laminated timber deck wrapped in fiberglass and embedded with epoxy resin;
- ✓ Laminated timber deck system topped with layer of asphalt as a wearing surface;
- ✓ Deck sections on the north span pushed in place “forcibly” by an excavator bucket (likely cause of damage to wearing surface on the north span, or the use of test panels from strength verification).

Ontario Structure Inspection Manual (OSIM)



Ministry of Transportation's structural management system



The manual sets standards for detailed inspections and condition ratings for these inspections for all structures in Ontario



Biennial (every 2nd year) Structure Inspections are required to assess the condition of the structure, in accordance with the methodology described in OSIM



OSIM Report

OSIM Report (2020)



Wearing surface is in fair condition with some minor potholes and cracking;

North span bridge deck is absorbing/retaining water and accelerating the deterioration. This will continue and eventually need replacement;

The deck joints/cracks require sealing to avoid any further deterioration;

Rust jacking is present at almost all of the connection locations and some connections have loose or missing rivets. Truss system has several loose/missing rivets, however no single connection has more than 10% loose/missing;

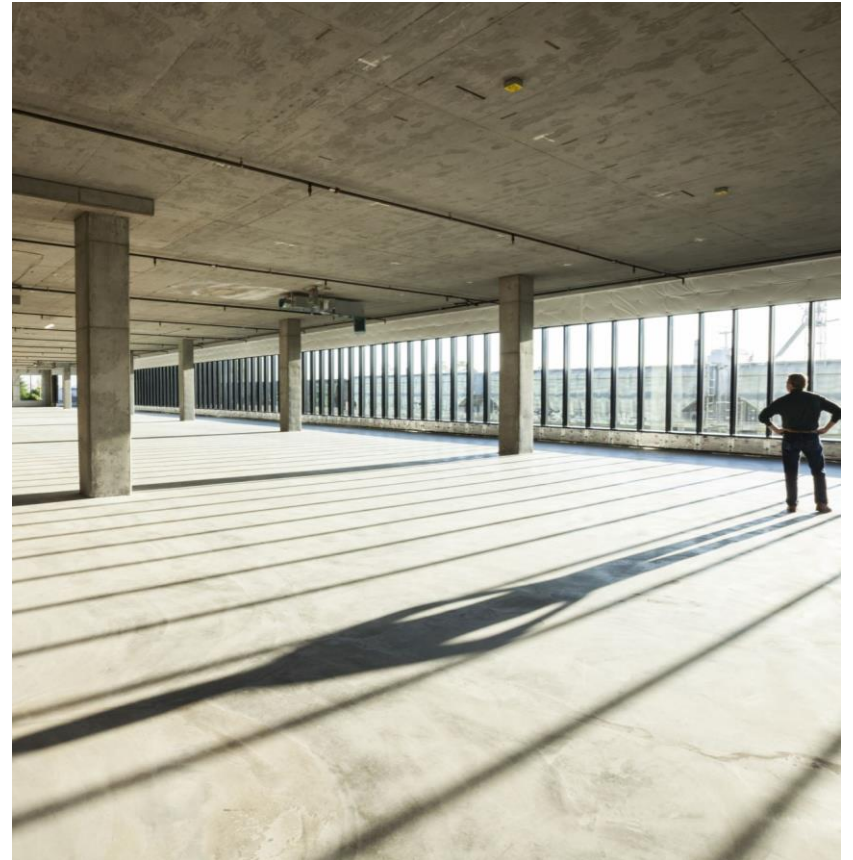
...Report Summary 2020

- Steel trusses are in good to fair shape overall, however are considered to be in poor condition due to the bottom chord which is severely corroded at locations;
- The bottom chord of the east truss has permanently deflected in the middle of the south span;
- Intermediate concrete piers and concrete abutments in fair to very poor condition and show spalling, delamination, efflorescence, medium to wide map cracking and disintegration. The abutments are in worse condition than the piers.



Required Remediation to extend the life of the Bridge:

- Concrete Abutments (existing concrete is disintegrating and will continue at accelerated rates);
- Steel repairs on south end to address significant corrosion on exterior stringer beam;
- Deck joints replaced and repaired;
- Deck surface (problematic since installation in 2008);
- Eliminate deck panels from retaining water in order to extend life of deck panels.



Inspection Recommendations

Municipal Structure Inspection Form

MTO Site Number:

38S-234

Repair and Rehabilitation Required:		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6 to 10 years	1 to 5 years	Within 1 year	Urgent	
Signs	Install hazard markers, single lane bridge sign			X		\$1,000
Top Chord	Localized steel repairs at North pier			X		\$2,500
Approaches	Replace South wearing surface, replace gulderall		X			\$45,000
Trusses	Clean bearings, bottom chord and connections			X		Maintenance
Joints	Replace bridge deck seals/joints		X			\$40,000
Abutments	Partial depth concrete repairs	X				\$500,000
Beams/MLE	Reinforcing at section loss to webs		X			\$40,000
Steel Elements	Sand blasting, re-coat and misc steel repairs	X				\$2,575,000
Decks	Repairs to wearing surface across structure			X		\$5,000
Total Cost						\$3,208,500

An aerial photograph of a multi-lane bridge spanning a body of water. The bridge has a central median and multiple lanes on each side. The water is a deep teal color. The bridge structure is visible, including the supports and the road surface.

Replacement Options & Cost Estimates

REHAB: \$4M

(estimate established in 2020). No increase to load limit, but prolongs the life of the bridge.

REPLACE: \$10M

(estimate established in 2020 but includes inflation up to today)

CLOSE: \$4M for road improvements plus 800K for demolition and removal



Immediate Action

- Limit bridge traffic to Light Passenger Vehicles only (under consideration)
- Bridge Inspection (July 2023); Updated assessment and cost estimates
- Mtce and Remediation per recommendations (OSIM)
- MP and MPP Engagement
- Funding

6 – 12 Months

- Road assessment; Engineering study and cost estimates
- Firm up cost estimates for extended remediation (OSIM Report)
- Assess long-term viability of current structure
- Financial options; funding, financing
- Public Consultations

Regular Council Meeting June 12, 2023:

Resolution No. 23-14-38

Moved: T. Currie

Seconded: R. Mulligan

WHEREAS Councillors Currie, Councillor Mulligan and Superintendent Ravnaas met with the Parliamentary Assistant to the Minister of Infrastructure at the 2023 Ontario Good Roads Conference to discuss the funding challenges for the rehabilitation and replacement of the Dean Lake Bridge;

NOW THEREFORE BE IT RESOLVED THAT Council receive the correspondence from the Parliamentary Assistant to the Minister of Infrastructure;

AND THAT Council continue to call on the federal government to invest in more infrastructure funding to help address the local needs of municipalities across the province;

AND THAT a copy of this resolution, together with the correspondence received from the Minister of Infrastructure, be sent to the Association of Municipalities of Ontario, all Northern Ontario MP's and MPP's;

AND THAT staff continue to seek and explore alternate sources of funding.

CARRIED



What Can you do?

- Stay Informed! Public Notices on Municipal website. Please subscribe.
- Read the OSIM report
- Contact your local MP and MPP to call on the Federal and Provincial Government to invest in more Infrastructure Funding. (Template for letter can be obtained by contacting the Municipal Office).

Play the Northern Ontario Card!

- Repeat!

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Infrastructure Services Committee

Every third Thursday at 3:00 p.m. in Council Chambers/Zoom, or at the call of the Chair (excluding July and August).

Members:

Councillor Tim Currie, Chair
Councillor Roger Mulligan
Councillor Jock Pirrie

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[Your Name]
[Your Address]
[City, Province]
[Postal Code]
[Date]

Template Letter

[Honourable Member of Parliament's Name]

Dear [Honourable Member of Parliament's Name],

I am writing to you today as a resident of the Municipality of Huron Shores, a small rural community located in the District of Algoma, Province of Ontario. Our community is currently facing a significant challenge with regards to the state of a major bridge that connects our community to the Trans-Canada Highway.

The bridge in question is in dire need of repair and has become a safety concern for our residents. Unfortunately, our municipality does not have the funds necessary to undertake such a large-scale project on our own. We are therefore turning to the federal government for assistance in this matter.

We understand that the federal government has various programs and funding opportunities available for communities like ours, and we would be grateful for any assistance you may be able to provide us in identifying and accessing these resources. Repairing this bridge is crucial for the safety and economic wellbeing of our community, and we cannot do it without your help.

Thank you for your time and consideration, and we look forward to hearing from you soon.

Sincerely,

[Your Name]