REQUEST FOR PROPOSALS (RFP)

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WATER AND WASTEWATER FACILITIES OPERATION AND MAINTENANCE SERVICES

The Corporation of the Town of Moosonee

RFP Posted: June 26st, 2023

Electronic Proposal submission close date: July 24th

Town Contact:

Trevor Keefe, Public Works Manager at

trevorkeefe@moosonee.ca

Summary:

The Town of Moosonee invites qualified firms to submit proposals for municipal bridge inspections and repairs. This RFP seeks to identify a qualified contractor to perform necessary repairs on bridges within the municipality, as outlined in the attached OSIM bridge inspection report.

Appendix A:

OSIM Bridge Report 2022 - Attached

Scope of Work:

A. Repair Execution: Performing the necessary repairs as per the guidelines and specifications provided in the attached OSIM bridge inspection report and in compliance with relevant regulations and industry standards.

B. Quality Assurance: Implementing quality control measures to ensure the repairs meet the required standards and specifications. This may include testing, documentation, and any necessary follow-up inspections.

C. Project Management: Efficiently managing the project timeline, resources, and coordination with other stakeholders to ensure timely completion of the repairs.

D. Additional Repairs: The contractor will also address any other necessary repairs or maintenance tasks identified during the completion of the repairs, once discussed, and agreed upon by the municipality.

1. Butler Creek Bridge:
    - Location: Review attached OSIM report
    - Repairs Needed:
        - Tighten sway braces.
        - Re-torque all transom clamps.
        - Inspect abutments and bearings.

2. Ferguson Road Bridge:
    - Location: Review attached OSIM report
    - Repairs Needed:
        - Repair embankment and slope protection on the northwest quadrant. Erosion control measures are required.
        - Inspect expansion joints and replace missing nuts.
        -
3. Quarry Road Bridge:

- Location: Review attached OSIM report
- Repairs Needed:
    - Restraint horizontal movement of the abutments/superstructure.
    - Clean seals, drains, and conduct inspections.
    - Repair top rail on the west side.
    - Repair embankment in the northwest quadrant.
    -

4. Atim Road Bridge:

    - Location: Review attached OSIM report
    - Repairs Needed:
        - Repair attenuator on the southeast side.

Proposal Submission: Interested bidders are required to submit the following documents:

1. Cover Letter: Introduce your firm, outline your qualifications, and express your interest in this project.
2. Technical Proposal: Describe your approach to conducting bridge inspections and repairs, including your methodology, quality control measures, and any specialized equipment or techniques used.
3. Qualifications and Experience: Provide details of your firm's relevant experience, including previous bridge inspection and repair projects, certifications, and qualifications of key personnel.
4. Project Schedule: Present a detailed timeline outlining the key milestones, tasks, and deliverables for both inspections and repairs.
5. Cost Proposal: Provide a comprehensive breakdown of the proposed fees, including labor, materials, and any additional costs or expenses.

Evaluation Criteria: Proposals will be evaluated based on the following criteria:

1. Experience and qualifications of the firm and its personnel.
2. Technical approach and methodology.
3. Capacity to meet project timelines.
4. Cost-effectiveness and value for money.

Timeline:

1. RFP Release Date: June 21, 2023

2. Bid Submission Deadline: July 24, 2023
3. Evaluation of Proposals: July 30, 2023
4. Contract Award: August 15, 2023

Contact Information:

For any clarifications or inquiries regarding this RFP, please contact:

Trevor Keefe
Public Works Manager
trevorkeefe@moosonee.ca
705-336-8640

Submission of Proposals: Proposals must be submitted electronically to info@moosonee.ca no later than the bid submission deadline specified above. Late submissions will not be accepted.

Note: The Town of Moosonee reserves the right to reject any or all proposals, waive irregularities or formalities, and award the contract(s) based on the evaluation of the proposals received.

Thank you for your interest in this project.

Transportation

Town of Moosonee

2022 Municipal Bridge Inspections
Butler Creek, Ferguson Road, Quarry Road and Atim Road Bridges in Moosonee, Ontario

Final Report

Prepared by:

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Project Number:

60692533

Date:

May, 2023

Distribution List

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	Yes	Town of Moosonee

Revision Log

Revision #	Revised By	Date	Issue / Revision Description

AECOM Signatures

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2023-05-03

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Appendices

1 Introduction

AECOM was retained by the Town of Moosonee for Professional Services related to the inspection of Butler Creek, Ferguson Road, Quarry Road and Atim Road Bridges in accordance with the Ontario Structure Inspection Manual. This report summarizes the findings of the 2022 inspections including updated municipal structure inspection forms with recommendations for required bridge maintenance, rehabilitation and/or replacements.

2 Structure Location

The existing structures are situated at various locations in Moosonee, Ontario, as shown on the following Key Plans (Figure 1-5).

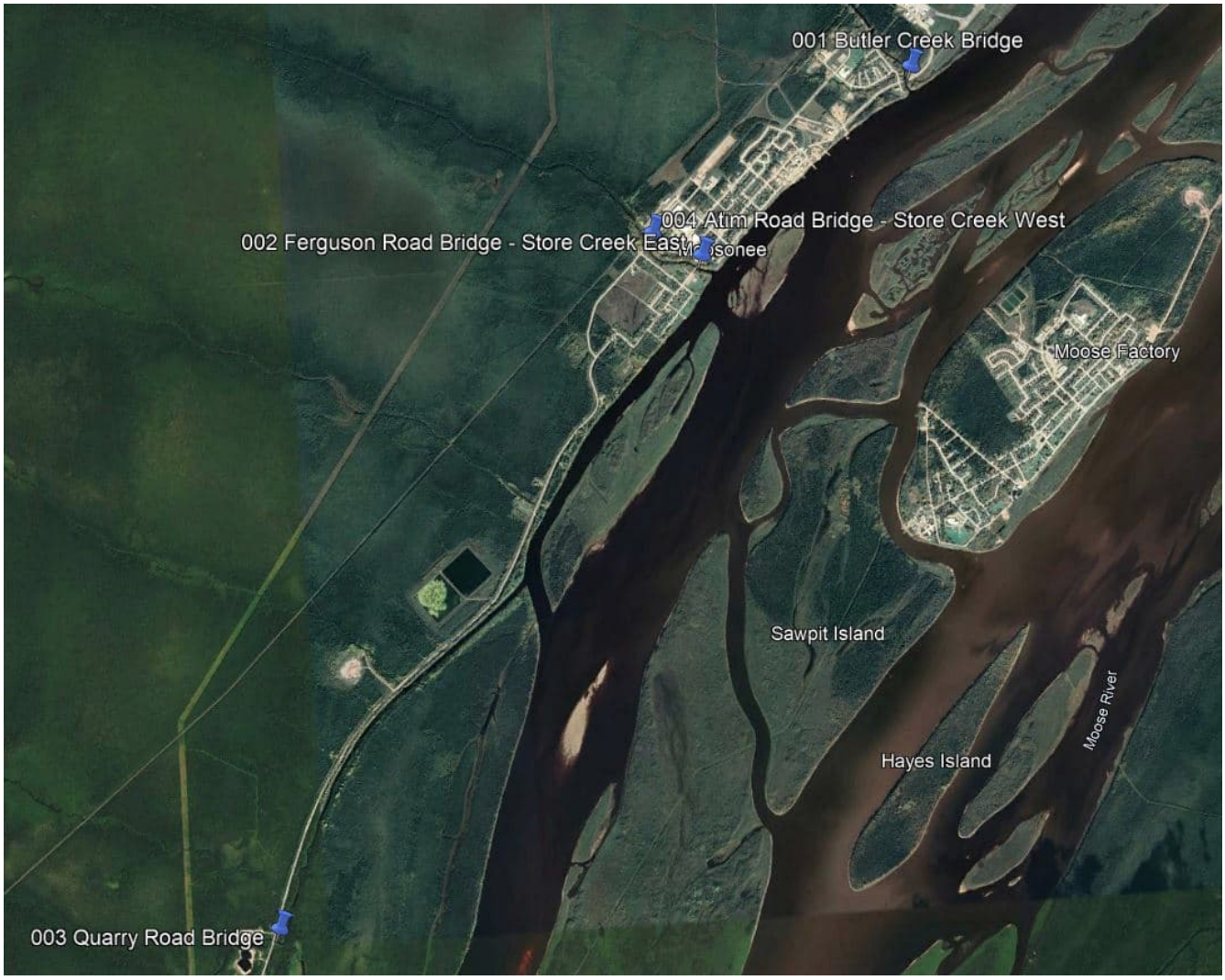


Figure 1. Key Plan

Figure 2. Key Plan – Butler Creek Bridge

Figure 3. Key Plan – Ferguson Road Bridge

Figure 4. Key Plan – Quarry Road Bridge

Figure 5. Key Plan – Atim Road Bridge

3 Available Information

The following reference drawings were available:

- SUD-00014028 Dwg. No. 1 of 2 Butler Creek Bridge Rehabilitation – General Arrangement
- SUD-00014028 Dwg. No. 2 of 2 Butler Creek Bridge Rehabilitation – Plan Section and Details
- SUD-00014028 Dwg. No. 1 of 1 Fergusion Rd Bridge Rehabilitation – General Arrangement
- SUD-00014023 Dwg. No. S-1 Atim Rd Bridge Rehabilitation – General Arrangement
- SUD-00014023 Dwg. No. S-2 Atim Rd Bridge Rehabilitation – Pile Bent Repair
- SUD-00014023 Dwg. No. S-3 Atim Rd Bridge Rehabilitation – Sidewalk Details
- SUD-00014023 Dwg. No. C-1 Atim Rd Bridge Rehabilitation – Erosion Protection Plan & Profile
- 91-020 Dwg. No. A-1 Store Creek Bridge Replacement – Horizontal and Vertical Control
- 91-020 Dwg. No. A-2 Store Creek Bridge Replacement – Sediment Control Plan
- 91-020 Dwg. No. A-3 Store Creek Bridge Replacement – Utility & Removals
- 91-020 Dwg. No. 1 Store Creek Bridge – General Arrangement
- 91-020 Dwg. No. 2 Store Creek Bridge – Foundation Layout & Pilecap Reinforcement
- 91-020 Dwg. No. 3 Store Creek Bridge – Abutments
- 91-020 Dwg. No. 4 Store Creek Bridge – Abutments Reinforcement
- 91-020 Dwg. No. 5 Store Creek Bridge – Piers
- 91-020 Dwg. No. 6 Store Creek Bridge – Structural Steel I
- 91-020 Dwg. No. 7 Store Creek Bridge – Structural Steel II
- 91-020 Dwg. No. 8 Store Creek Bridge – Structural Steel III
- 91-020 Dwg. No. 9 Store Creek Bridge – Deck Details
- 91-020 Dwg. No. 10 Store Creek Bridge – Joint Anchorage and Armouring
- 91-020 Dwg. No. 11 Store Creek Bridge – Railing
- 91-020 Dwg. No. 12 Store Creek Bridge – 6000 mm Approach Slab
- 91-020 Dwg. No. 13 Store Creek Bridge – Standard Details I
- 91-020 Dwg. No. 14 Store Creek Bridge – Standard Details II

The following previous inspection reports were available:

- 2020 Municipal Bridge Inspections

4 Historical Information

4.1 No. 001 – Butler Creek Bridge (Airport Road Bridge)

The Butler Creek bridge was built in 1970. The bridge was rehabilitated in 2014 and 2015, and consisted of the following:

- Welding repairs of the steel plates on the deck steel grating
- New timber deck on the cantilever sidewalk
- Gabion retaining wall at the Southwest corner
- Installation of narrow bridge sign at both approaches
- Installation of a triple load posting sign of 20, 27 and 34 tonnes

The last bridge inspection was done in 2020.

4.2 No. 002 – Ferguson Road Bridge

The Ferguson Road bridge was built in 1995. The bridge was rehabilitated in 2010, 2014 and 2015, and consisted of the following:

- Timber deck wearing surface replacement
- Welding repairs of the steel plates on the deck steel grating
- New timber deck on the cantilever sidewalk
- Gabion retaining wall at the Southwest corner
- Installation of narrow bridge sign at both approaches
- Installation of a triple load posting sign of 20, 27 and 34 tonnes

The last bridge inspection was done in 2020.

4.3 No. 003 – Quarry Road Bridge

The Quarry Road bridge was built in 1974. Since its construction, some rehabilitation works have been done to the bridge, however none were recorded. Nevertheless, the 2015 inspection report noted a change in 1998 with new slope protection on the east abutment.

The last bridge inspection was done in 2020.

4.4 No. 004 – Atim Road Bridge

The Atim Road bridge construction date is unknown. The bridge was rehabilitated in 2010, 2014 and 2015, and consisted of the following:

- Injection in concrete deck cracks
- Replacement of damaged bridge railing
- Replacement of expansion joints seals
- Repaired unsound concrete on the fascia
- Rock fill for scoured and eroded area under the bridge
- Steel H piles coated with a coal tar epoxy system
- H-piles steel repairs
- New drainage ditches Northeast and Southwest corners
- Northeast approach sidewalk
- New energy attenuating terminals at the approaches
- Installation of a triple load posting sign of 16, 29 and 40 tonnes

The last bridge inspection was done in 2020.

5 Bridge Description

5.1 No. 001 – Butler Creek Bridge (Airport Road Bridge)

The Butler Creek bridge crosses Butler Creek in the town of Moosonee. The bridge is a single span Bailey Bridge with Double Double reinforced construction and 64 mm thick steel grating deck. The Bailey bridge is divided into 15 bays with 2 transoms in each bay. The entire length of the bridge measures 45.7 m. The roadway consists of a single lane riding surface, 3.81m wide. There is a cantilever sidewalk on the south side of the bridge.

5.2 No. 002 – Ferguson Road Bridge

The Ferguson Road bridge crosses Store Creek in the town of Moosonee. The bridge is a three-span continuous steel girder bridge with a transverse laminated timber deck. The bridge is divided into 3 unequal spans of 16.3m, 31.1m and 19.6m, the entire length of the bridge measures 67.5m from north to south. The roadway single lane, timber riding surface of 4.9m wide consists of a series of 2” x12” timber. There is a 1.57m timber deck sidewalk on the south side of the bridge.

The superstructure is made up of 3 welded plate girders at 2.3m spacing with a timber deck. Diaphragms at the bearings consist of steel plate while the intermediate diaphragms consist of steel K-frames.

The substructure consists of reinforced concrete abutments and piers consisting of steel tube pile bents with concrete pile caps.

5.3 No. 003 – Quarry Road Bridge

The Quarry Road bridge crosses Maidman's Creek south of the town of Moosonee. The bridge is a single-span steel girder bridge with a concrete deck. The bridge length is 21.4m, measured center to center at the bearings. The roadway consists of two lanes of concrete riding surface of 7.9m wide. On the deck, there are 0.6m wide curbs on the East and West sides.

The superstructure is made up of 4 welded plate girders at 2.4m spacing with a cast-in-place concrete deck. Diaphragms at the bearings consist of steel I-sections and the intermediate diaphragms consist of steel channels.

The substructure consists of reinforced concrete abutments.

5.4 No. 004 – Atim Road Bridge

The Atim Road bridge crosses Store Creek in the town of Moosonee. The bridge is a nineteen-span continuous wood-concrete composite deck bridge. The entire length of the bridge measures approximately 122m and is divided into 19 spans of lengths varying between 5.4m and 6.9m. The roadway consists of two lanes concrete riding surface of 8.0m wide. On the deck, there is a 1.25m wide curb on the East side and a 0.35 wide curb on the West side.

The superstructure is built with a timber deck soffit and concrete deck top.

The substructure consists of steel H-pile bents which act as the piers and abutments.

6 Bridge Condition

6.1 No. 001 – Butler Creek Bridge (Airport Road Bridge)

The Butler Creek bridge is in generally fair condition. There are safety issues with the cantilever walkway (height and close opening) and a missing bottom panel. At the Northeast and Southeast quadrants, the steel Flex Beam Guide Rails are damaged from vehicle impact. On the deck surface grating, longitudinal welds on both sides of the two (2) steel plates are cracked. All the transom clamps and 50 % of the swaybraces are loose. Could not inspect abutments and bearings due to them being covered with dirt and gravel.

The current condition of the bridge is considered for the calculated 2022 Bridge Condition Index (BCI). The 2022 BCI is 68.12 with an increase from the 2020 BCI. This increase in BCI is a result of adding missing elements for foundations, streams/waterways, embankments and slope protection, and also, discrepancies in element condition ratings for the stringers, bracing and railing systems.

6.2 No. 002 – Ferguson Road Bridge

The Ferguson road bridge is in fair to good condition. There is some severe damage to the longitudinal and transverse timber wearing surface in the middle span and approaches. Furthermore, the timber is deteriorating with no connection to the lower layer of the deck. The laminated transverse timber deck soffit is showing signs of deterioration with discoloration and wet areas. There is a missing nut at the north abutment diaphragm tie-down. Could not fully inspect expansion joints, sidewalk and deck top due to them being covered with dirt and gravel.

The current condition of the bridge is considered for the calculated 2022 Bridge Condition Index (BCI). The 2022 BCI is 71.99 and is a decrease from the 2020 BCI.

6.3 No. 003 – Quarry Road Bridge

The Quarry road bridge is in generally good condition. It is noted that the superstructure is not connected laterally or longitudinally to the substructure. There are localised signs of leaking on the ballast walls and bearing seats below the expansion joints. The embankment in the northwest quadrant is severely eroded. There are potholes on the approaches. Could not fully inspect expansion joints, curbs, deck top and deck drains due to them being covered with dirt and gravel.

The current condition of the bridge is considered for the calculated 2022 Bridge Condition Index (BCI). The 2022 BCI is 74.15 and is a decrease from the 2020 BCI.

6.4 No. 004 – Atim Road Bridge

The Atim road bridge is in generally good condition. There is a localised deformation on one of the pier H-piles in the creek probably from ice/debris impact. There are localised signs of leaking on the ballast walls and bearing seats below the expansion joints. There are potholes on the approaches and a damaged attenuator in the Southeast quadrant. The stream is partially blocked with debris. Could not fully inspect expansion joints, curbs and deck top due to them being covered with dirt and gravel.

The current condition of the bridge is considered for the calculated 2022 Bridge Condition Index (BCI). The 2022 BCI is 71.56 and is a decrease from the 2020 BCI.

7 Recommendations

7.1 No. 001 – Butler Creek Bridge (Airport Road Bridge)

Maintenance Needs:

- Replace the Northeast and Southeast approach steel flex beam guide rails.
- Remove dirt and gravel on the abutments and bearings.
- Replace missing bottom panel on handrail.
- Re-torque all transom clamps.
- Tighten swaybraces and re-torque raker bolts as per manufacturer's instruction.

Rehab/Repair Recommendations:

- Repair longitudinal welds on the deck plates.
- Replace or modify the walkway railing to meet bridge code requirement.

7.2 No. 002 – Ferguson Road Bridge

Maintenance Needs:

- Remove dirt and gravel on the deck.

Rehab/Repair Recommendations:

- Replace missing nut on North abutment diaphragm uplift tie-down.
- Remove and replace timber deck wearing surface.
- Replacement of laminated transverse timber deck soffit should be considered at the same time.

7.3 No. 003 – Quarry Road Bridge

Maintenance Needs:

- Repair embankment in Northwest quadrant and place rock protection.
- Repair top rail of guide rail.
- Remove dirt and gravel on the deck.
- Repair potholes on approaches.

Rehab/Repair Recommendations:

- Restrain horizontal movement of the superstructure.

7.4 No. 004 – Atim Road Bridge

Maintenance Needs:

- Repair potholes on approaches.
- Remove dirt and gravel on the deck.
- Remove debris in stream.
- Repair attenuator in Southeast quadrant.

Monitoring Requirements:

- Deformations from ice/debris impacts on river piers.

Appendix A

Inspection Forms

- Butler Creek Bridge
- Ferguson Creek Bridge
- Quarry Road Bridge
- Atim Road Bridge

Summary Action Report

Structure 001 (MTO Site No. 639-0002)

Butler Creek Bridge

Inspection Date 10-21-2022 mm/dd/yyyy

Next Biennial Inspection 10-21-2024 mm/dd/yyyy

Condition Index Value (BCI) **68.12**

Current Rep. Value **$945,263**

Additional Investigations

Investigation	Priority	Cost	Investigation	Priority	Cost

No additional investigations required.

Performance Deficiencies

Element Group	Element	Performance Deficiency
Barriers	Hand Railings	Pedestrian/vehicular hazard
Barriers	Railing Systems	Pedestrian/vehicular hazard
Bracing	Bracing	Load carrying capacity

Maintenance Needs

Element Group	Element	Maintenance Required	Priority	Comment
Bracing	Bracing	Bailey bridges - Maintenance	Urgent	Tighten swaybraces and re-torque all raker bolts.
Barriers	Railing Systems	Bridge Handrail Maintenance	2 yr	Repair damaged guide rail.
Abutments	Bearings	Bridge Cleaning	2 yr	Clean off dirt and gravel
Abutments	Abutment Walls	Bridge Cleaning	2 yr	Clean off dirt and gravel.
Barriers	Hand Railings	Bridge Handrail Maintenance	Urgent	Replace missing bottom panel.
Beams/MLE's	Floor Beams	Bailey bridges - Maintenance	Urgent	Re-torque all transom clamps.

Repair/Rehabilitation

Element Group	Element	Repair/Rehabilitation		Priority	Cost
Decks	Deck Top	Rehab	Repair welds.	1-5 yrs	$5,000
Barriers	Hand Railings	Rehab	Increase railing height and close opening to code requirement prior to opening sidewalk to public.	1-5 yrs	$10,000
			Total Repair/Rehabilitation Cost		**$15,000**

Town of Moosonee	100 %	$15,000.00	**Total Associated Work Cost**	**$0**
	%		**Total Cost**	**$15,000**

Overall Comments

Bridge is in generally fair condition. There are safety issues with the cantilever walkway (height and close opening) and a missing bottom panel. At the Northeast and Southeast quadrants, the steel Flex Beam Guide Rails are damaged from vehicle impact. On the deck surface grating, longitudinal welds on both sides of the two (2) steel plates are cracked. All the transom clamps and 50 % of the swaybraces are loose. Could not inspect abutments and bearings due to them being covered with dirt and gravel.

Municipal Structure Inspection Form

Structure Number: 001

Inventory Data

Structure Name	Butler Creek Bridge	**Hwy No.**	1	**Key Photo**	
Cross. Type Over	☑ Road ☐ Rail ☐ Ped ☐ Nav. Water ☐ Non-Nav. Wat. ☐ Other				
Cross. Type Under	☐ Road ☐ Rail ☐ Ped ☑ Nav. Water ☐ Non-Nav. Wat. ☐ Other				
Road Name	Airport Road				
Structure Location	Over Butler Creek				
Latitude	51.28417	**Longitude**	80.61639	**Cur. Rep.Value**	$945,263 **
Owner(s)/ % Share	Town of Moosonee 100 %				
	%	**Heritage Status**	Not Considered for Designation		
MTO Region		**Road Side Env.**	Rural		
MTO District		**Road Class**	Freeway		
Old County		**Lane Type**			
Geographic Twp.		**Posted Speed**	15	**No. of Lanes**	1
Structure Type	Bailey Panel	**AADT**	400	**Pct. Trucks**	
Structure Material	Structural Steel	**Inspection Route Sequence**			
Articulation		**Interchange Number**			
Total Deck Length	45.7 m	**Road Width**	3.81 m	**Interchange Structure Number**	
Overall Width	6.1 m	**Vert. Clear.**	0 m	**Detour Length**	0 km
Total Deck Area	278.77 m^2	**No. of Spans**	1	**Fill on Structure**	0 m
Special Routes	☐ Transit ☐ School ☐ Truck ☐ Bicycle	**Insp. Duration**	hr		

** Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure.

Skew Angle 0 °

Struct. Dir. North/South

Spans

Span Name	Span Length	Span Name	Span Length
1	45.7 m		m
	m		m
	m		m

Historical Data

Year Built	1970 yyyy	**Year of Last Major Rehab**	2014 yyyy
Last OSIM Inspection	09-07-2020 mm/dd/yyyy	**Contract No. When Built**	
Last Enhanced OSIM	mm/dd/yyyy	**Last Evaluation**	mm/dd/yyyy
Last Enhanced Access	mm/dd/yyyy	**Current Load Limit**	20 t 27 t 34 t
Last Underwater Insp.	mm/dd/yyyy	**Load Limit By-Law No.**	mm/dd/yyyy
Last Condition Survey	mm/dd/yyyy	**By-Law Expiry Date**	mm/dd/yyyy

Rehab History

Rehab Date	Rehab Description
2014-01-01	Replaced timber decking of cantilever bridge sidewalk, repaired steel deck grating and installed gabion retaining wall at SW of bridge. Posted bridge for triple load posting of 20, 27 and 34 tonnes.

Municipal Structure Inspection Form

Structure Number: 001

Field Inspection Information:

Inspection Date	10-21-2022 mm/dd/yyyy	☐ Multi Day Inspection	☑ OSIM	☐ Enhanced OSIM	**BCI** 68.12
Inspector	S. Williams	**Eng. Responsible**	D. Adamson		
Others in Party	O. Zhychkovska				
Access Equip.	☐ Lift	☐ Ladder	☐ Boat	☐ Bridge Master	Other
Other Equip.	Camera, Hammer, Other Hand Tools				
Weather	Rain	**Temperature**	2 °C		

Additional Investigations Required:

Investigation	**Priority** None	Normal	Urgent	**Estimated Cost**
Detailed Deck Condition Survey	☐	☐	☐	$0
Delamination Survey of Asphalt-Covered Deck	☐	☐	☐	$0
Concrete Substructure Condition Survey	☐	☐	☐	$0
Detailed Coating Condition Survey	☐	☐	☐	$0
Detailed Timber Investigation	☐	☐	☐	$0
Post-Tensioned Strand Investigation	☐	☐	☐	$0
Underwater Investigation	☐	☐	☐	$0
Fatigue Investigation	☐	☐	☐	$0
Seismic Investigation	☐	☐	☐	$0
Structure Evaluation	☐	☐	☐	$0
Monitoring of Deformations, Movements and Settlements	☐	☐	☐	$0
Monitoring of Crack Widths	☐	☐	☐	$0
			Total Cost	$0

Investigation Notes

Overall Structure Notes:

Recommended Work on Structure ☐ None ☑ Rehab ☐ Replace ☐ Remove

Timing of Recommended Work ☐ None ☐ Now ☑ 1 to 5 years ☐ 6 to 10 years

Overall Comments

Bridge is in generally fair condition. There are safety issues with the cantilever walkway (height and close opening) and a missing bottom panel. At the Northeast and Southeast quadrants, the steel Flex Beam Guide Rails are damaged from vehicle impact. On the deck surface grating, longitudinal welds on both sides of the two (2) steel plates are cracked. All the transom clamps and 50 % of the swaybraces are loose. Could not inspect abutments and bearings due to them being covered with dirt and gravel.

BCI Change Justification

Added missing elements.

Next Inspection 10-21-2024 mm/dd/yyyy

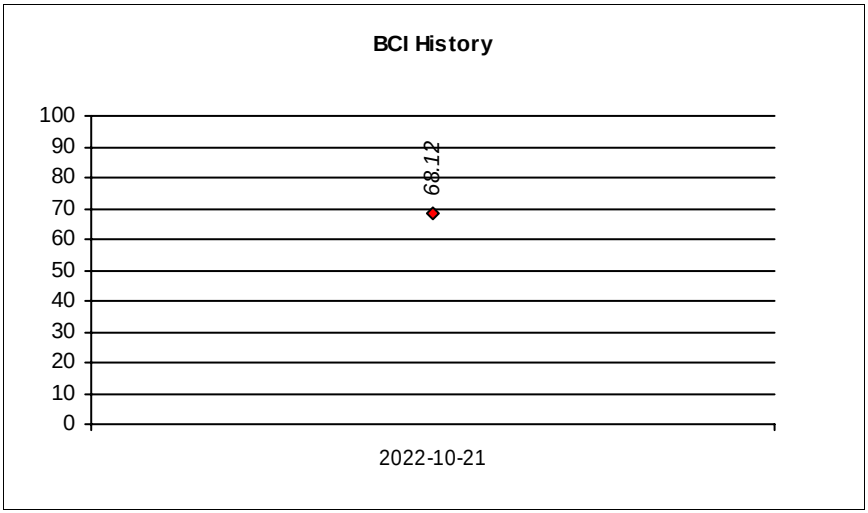
Estimated Load Limit 20 t 27 t 34 t

Municipal Structure Inspection Form

Structure Number: 001

BCI History

Insp. Date	BCI	Inspector
21-Oct-22	68.12	S. Williams



All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

Standard Codes

Suspected Performance Deficiencies

00	None	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
01	Load carrying capacity	07	Jammed expansion joint	13	Flooding/channel blockage
02	Excessive deformations (deflections/rotations)	08	Pedestrian/vehicular hazard	14	Undermining of foundation
03	Continuing settlement	09	Rough riding surface	15	Unstable embankments
04	Continuing movements	10	Surface ponding	16	Other
05	Seized bearings	11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey Bridges - Maintenance	16	Bridge deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

Decks - Deck Top

Element Group	Decks	**Length**	45.70 **Width** 4.45
Element Name	Deck Top	**Height**	0.06 **Count** 0.00
Location		**Total Quantity**	203.37
Material	Steel	☐ **Limited Inspection**	
Element Type	Metal Grid	**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	75.00	128.37	0.00

☐ Moderate
☑ Severe

Comments

Welds are cracked on steel plates.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***
Rehab	1-5 yrs	$5,000	Repair welds.

Sidewalks/curbs - Sidewalks/Medians

Element Group	Sidewalks/curbs	**Length**	45.70 **Width** 1.06
Element Name	Sidewalks/Medians	**Height**	0.20 **Count** 1.00
Location	East Side	**Total Quantity**	57.58
Material	Timber	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	57.58	0.00	0.00

☐ Moderate
☑ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 001

Barriers - Railing Systems

Element Group	Barriers	**Length**	50.00	**Width**	
Element Name	Railing Systems	**Height**		**Count**	2.00
Location	North Side and South Side			**Total Quantity**	100.00
Material	Steel	☐ **Limited Inspection**			
Element Type	Steel Flex Beam over Bailey Bridge	**Environment**			
Protection System		☐ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	m	0.00	93.00	0.00	7.00

☐ Moderate
☑ Severe

Comments

Impact damage at northeast, southeast and centre of west side.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
Pedestrian/vehicular hazard	Bridge Handrail Maintenance	2 yr	Repair damaged guide rail.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Barriers - Hand Railings

Element Group	Barriers	**Length**	45.70	**Width**	
Element Name	Hand Railings	**Height**		**Count**	1.00
Location	East Side			**Total Quantity**	45.70
Material	Steel	☐ **Limited Inspection**			
Element Type		**Environment**			
Protection System	Hot dip galvanizing	☑ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	m	0.00	0.00	43.70	2.00

☐ Moderate
☐ Severe

Comments

Railing height/opening do not meet bridge code requirements. Missing bottom panel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
Pedestrian/vehicular hazard	Bridge Handrail Maintenance	Urgent	Replace missing bottom panel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***
Rehab	1-5 yrs	$10,000	Increase railing height and close opening to code requirement prior to opening sidewalk to public.

Beams/MLE's - Floor Beams

Element Group	Beams/MLE's	**Length**	**Width**
Element Name	Floor Beams	**Height**	**Count** 31.00
Location		**Total Quantity**	31.00
Material	Steel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	20.00	11.00	0.00

☑ Moderate
☐ Severe

Comments

Structure has large vibrations and deflection during vehicle loading. Light surface corrosion.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bailey bridges - Maintenance	Urgent	Re-torque all transom clamps.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Stringers

Element Group	Beams/MLE's	**Length**	**Width**
Element Name	Stringers	**Height**	**Count** 270.00
Location		**Total Quantity**	270.00
Material	Steel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	270.00	0.00	0.00

☑ Moderate
☐ Severe

Comments

Structure has large vibrations and deflection during vehicle loading.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Trusses/Arches - Top Chords

Element Group	Trusses/Arches	**Length**	**Width**
Element Name	Top Chords	**Height**	**Count** 120.00
Location		**Total Quantity**	120.00
Material	Steel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System	Hot dip galvanizing	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	100.00	20.00	0.00

☐ Moderate
☑ Severe

Comments

Two (2) panels are painted instead of galvanised, with paint approximately 60% fair and 40% poor.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Bracing - Bracing

Element Group	Bracing	**Length** 5.10	**Width**
Element Name	Bracing	**Height**	**Count** 30.00
Location		**Total Quantity**	153.00
Material	Steel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	m	0.00	153.00	0.00	0.00

☑ Moderate
☐ Severe

Comments

50% of swaybraces are loose.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
Load carrying capacity	Bailey bridges - Maintenance	Urgent	Tighten swaybraces and re-torque all raker bolts.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 001

Abutments - Abutment Walls

Element Group	Abutments	**Length** 0.00	**Width** 6.00
Element Name	Abutment Walls	**Height** 0.50	**Count** 2.00
Location	East Side and West Side	**Total Quantity**	6.00
Material	Wood	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	6.00	0.00	0.00

☑ Moderate
☐ Severe

Comments

Silt and gravel from roadway being tracked onto the bridge is accumulating on the abutments and bearings which prevents any visual inspection.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Clean off dirt and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Abutments - Bearings

Element Group	Abutments	**Length** 0.00	**Width** 0.00
Element Name	Bearings	**Height** 0.00	**Count** 4.00
Location	All	**Total Quantity**	4.00
Material	Steel	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	0.00	4.00	0.00

☑ Moderate
☐ Severe

Comments

Medium corrosion, less than 10% section loss. Buried in sand.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Clean off dirt and gravel

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 001

Foundations - Foundations (below ground level)

Element Group	Foundations	**Length** 0.00	**Width** 0.00
Element Name	Foundations (below ground level)	**Height** 0.00	**Count** 0.00
Location	West Abutment and Piers		**Total Quantity** 0.00
Material		☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	All				

☐ Moderate
☐ Severe

Comments

No deficiencies observed.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Embankments & Streams - Streams & Waterways

Element Group	Embankments & Streams	**Length** 0.00	**Width** 0.00
Element Name	Streams & Waterways	**Height** 0.00	**Count** 0.00
Location	Under Bridge		**Total Quantity** 1.00
Material		☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	All	0.00	1.00	0.00	0.00

☐ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 001

Embankments & Streams - Embankments

Element Group	Embankments & Streams	**Length**	0.00 **Width** 0.00
Element Name	Embankments	**Height**	0.00 **Count** 2.00
Location	In Front of Abutments	**Total Quantity**	2.00
Material		☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	2.00	0.00	0.00

☐ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Embankments & Streams - Slope Protection

Element Group	Embankments & Streams	**Length**	0.00 **Width** 0.00
Element Name	Slope Protection	**Height**	0.00 **Count** 2.00
Location	In Front of Abutments	**Total Quantity**	2.00
Material	Vegetation	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	2.00	0.00	0.00

☐ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 001

Accessories - Signs

Element Group	Accessories	**Length** 0.00	**Width** 0.00
Element Name	Signs	**Height** 0.00	**Count** 12.00
Location	East Side and West Side	**Total Quantity**	12.00
Material		☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	12.00	0.00	0.00

☑ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Approaches - Wearing Surface

Element Group	Approaches	**Length** 3.00	**Width** 3.50
Element Name	Wearing Surface	**Height**	**Count** 2.00
Location	East Side and West Side	**Total Quantity**	2.00
Material	Steel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	0.00	2.00	0.00

☐ Moderate
☑ Severe

Comments

Approach ramps are buried and not accessible for inspection.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 001

Repair/Rehabilitation Required

Element Group	Element	Repair/Rehabilitation	Priority	Cost
Decks	Deck Top	Rehab	1-5 yrs	$5,000
Barriers	Hand Railings	Rehab	1-5 yrs	$10,000
		Total Repair/Rehabilitation Cost		**$15,000**

Associated Work

	Comments			Estimated Cost
Approaches				$0
Detours				$0
Traffic Control				$0
Utilities				$0
Right-of-Way				$0
Environmental Study				$0
Other				$0
Contingencies			**%**	** $0
Engineering			**%**	** $0

** If based on a percentage calculated values rounded-up to the nearest thousand dollars.

Total Associated Work Cost	**$0**
Total Repair/Rehabilitation Cost	**$15,000**
Total Cost	**$15,000**
Town of Moosonee Share @ 100%	$15,000

Justification

Looking North at Bridge

Looking South at Bridge

East Elevation

West Elevation

North Approach

South Approach

Impact Damage to Guiderail in Northeast Quadrant

Impact Damage to Guiderail in Southwest Quadrant

Impact Damage to Centre of West Guiderail

Typical Signs on Approach

Typical Double Truss Member of Bailey Bridge

Welds Cracked at decking steel plates

Looking South at Cantilevered Walkway

Missing Bottom Panel on Exterior Handrail

Abutment Bearings Buried in Sand

North Abutment

South Abutment

Typical Soffit

Typical Light Corrosion on Floor Beam

Typical Stringers

Typical Bracing

South Embankment

Summary Action Report

Structure 002 (MTO Site No. 639-0003)

Ferguson Road Bridge - Store Creek East

Inspection Date 10-21-2022 mm/dd/yyyy

Next Biennial Inspection 10-21-2024 mm/dd/yyyy

Condition Index Value (BCI) **71.99**

Current Rep. Value

Additional Investigations

Investigation	Priority	Cost	Investigation	Priority	Cost

No additional investigations required.

Performance Deficiencies

No Performance Deficiencies

Maintenance Needs

Element Group	Element		Maintenance Required	Priority	Comment
Joints	Armouring/Retaining Devices		Bridge Cleaning	1 yr	Remove sand and gravel.
Joints	Concrete End Dams		Bridge Cleaning	1 yr	Remove sand and gravel.
Joints	Seals/Sealants		Bridge Cleaning	1 yr	Remove sand and gravel.
Sidewalks/curbs	Sidewalks/Medians		Bridge Cleaning	1 yr	Remove sand and gravel.
Decks	Deck Top		Bridge Cleaning	1 yr	Remove sand and gravel.
Decks	Deck Top		Repair of Bridge Timber	1 yr	Replace rotten/broken transverse deck boards.
Decks	Deck Top		Bridge Cleaning	1 yr	Remove sand and gravel.
Beams/MLE's	Diaphragms	End	Repair to Structural Steel	2 yr	Replace missing nut.

Repair/Rehabilitation

Element Group	Element	Repair/Rehabilitation		Priority	Cost
Decks	Deck Top	Rehab	Consider replacement of deck.	1-5 yrs	
Decks	Deck Top	Rehab	Consider replacement of deck.	1-5 yrs	
			Total Repair/Rehabilitation Cost		

Town of Moosonee	100 %	$0.00	**Total Associated Work Cost**	**$0**
	%		**Total Cost**	**$0**

Overall Comments

Bridge is in generally good condition. There is some severe damage to the running planks in the middle span and approaches. Furthermore, the timber is deteriorating with no connection to the lower layer of the deck. There is a missing nut at the north abutment diaphragm tie-down. Could not fully inspect expansion joints, sidewalk and deck top due to them being covered with dirt and gravel.

Municipal Structure Inspection Form

Structure Number: 002

Inventory Data

Structure Name	Ferguson Road Bridge - Store Creek East	**Hwy No.**	Ferguso	**Key Photo**	
Cross. Type Over	☑ Road ☐ Rail ☐ Ped ☐ Nav. Water ☐ Non-Nav. Wat. ☐ Other				
Cross. Type Under	☐ Road ☐ Rail ☐ Ped ☑ Nav. Water ☐ Non-Nav. Wat. ☐ Other				
Road Name	Ferguson Road				
Structure Location	Over Store Creek				
Latitude	51.27083	**Longitude**	80.64333	**Cur. Rep.Value**	**
Owner(s)/ % Share	Town of Moosonee 100 %				
	%	**Heritage Status**	Not Considered for Designation		
MTO Region		**Road Side Env.**			
MTO District		**Road Class**	Collector		
Old County		**Lane Type**			
Geographic Twp.		**Posted Speed**	15	**No. of Lanes**	1
Structure Type		**AADT**	400	**Pct. Trucks**	
Structure Material	Wood	**Inspection Route Sequence**			
Articulation		**Interchange Number**			
Total Deck Length	67.5 m	**Road Width**	4.9 m	**Interchange Structure Number**	
Overall Width	6.95 m	**Vert. Clear.**	0 m	**Detour Length**	1.5 km
Total Deck Area	469.13 m^2	**No. of Spans**	3	**Fill on Structure**	m
Special Routes	☐ Transit ☐ School ☐ Truck ☐ Bicycle	**Insp. Duration**	hr		

** Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure.

Spans

Span Name	Span Length	Span Name	Span Length
1	16.3 m	2	31.1 m
3	19.6 m		

Historical Data

Year Built	1995 yyyy	**Year of Last Major Rehab**	yyyy
Last OSIM Inspection	09-07-2020 mm/dd/yyyy	**Contract No. When Built**	
Last Enhanced OSIM	mm/dd/yyyy	**Last Evaluation**	mm/dd/yyyy
Last Enhanced Access	mm/dd/yyyy	**Current Load Limit**	t t t
Last Underwater Insp.	mm/dd/yyyy	**Load Limit By-Law No.**	mm/dd/yyyy
Last Condition Survey	mm/dd/yyyy	**By-Law Expiry Date**	mm/dd/yyyy

Rehab History

Rehab Date	Rehab Description
2010-01-01	Replaced wearing strips.
2014-01-01	Replaced missing Handrails at North East side. Installed New Single Lane Signs, WA-241 and WA-24 Narrow at each approach. Coat Steel Tube Pile Bents.

Municipal Structure Inspection Form

Structure Number: 002

Field Inspection Information:

Inspection Date	10-21-2022 mm/dd/yyyy	☐ Multi Day Inspection	☑ OSIM	☐ Enhanced OSIM	**BCI** 71.99
Inspector	S. Williams	**Eng. Responsible**	D. Adamson		
Others in Party	O. Zhychkovska				
Access Equip.	☐ Lift	☐ Ladder	☐ Boat	☐ Bridge Master	Other
Other Equip.	Camera, Hammer, Other Hand Tools				
Weather	Rain	**Temperature**	4 °C		

Additional Investigations Required:

Investigation	**Priority** None	Normal	Urgent	**Estimated Cost**
Detailed Deck Condition Survey	☐	☐	☐	$0
Delamination Survey of Asphalt-Covered Deck	☐	☐	☐	$0
Concrete Substructure Condition Survey	☐	☐	☐	$0
Detailed Coating Condition Survey	☐	☐	☐	$0
Detailed Timber Investigation	☐	☐	☐	$0
Post-Tensioned Strand Investigation	☐	☐	☐	$0
Underwater Investigation	☐	☐	☐	$0
Fatigue Investigation	☐	☐	☐	$0
Seismic Investigation	☐	☐	☐	$0
Structure Evaluation	☐	☐	☐	$0
Monitoring of Deformations, Movements and Settlements	☐	☐	☐	$0
Monitoring of Crack Widths	☐	☐	☐	$0
			Total Cost	$0

Investigation Notes

Overall Structure Notes:

Recommended Work on Structure ☐ None ☑ Rehab ☐ Replace ☐ Remove

Timing of Recommended Work ☐ None ☐ Now ☑ 1 to 5 years ☐ 6 to 10 years

Overall Comments

Bridge is in generally good condition. There is some severe damage to the running planks in the middle span and approaches. Furthermore, the timber is deteriorating with no connection to the lower layer of the deck. There is a missing nut at the north abutment diaphragm tie-down. Could not fully inspect expansion joints, sidewalk and deck top due to them being covered with dirt and gravel.

BCI Change Justification

Next Inspection 10-21-2024 mm/dd/yyyy

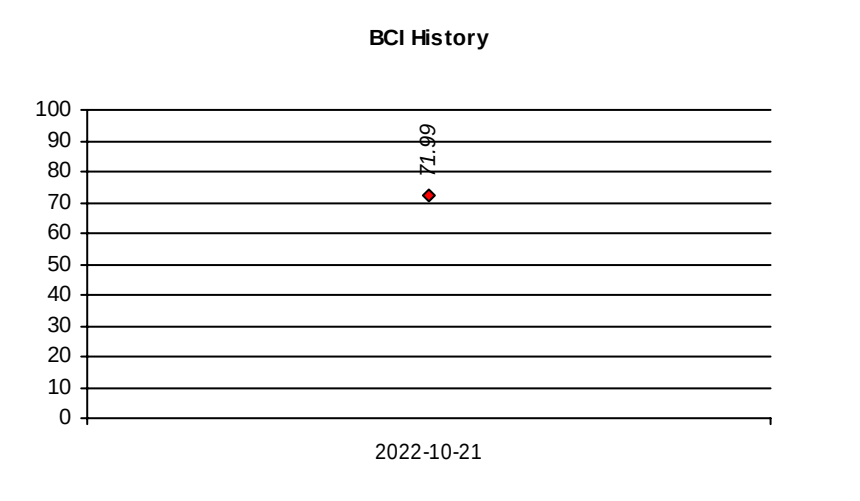
Estimated Load Limit t t t

Municipal Structure Inspection Form

Structure Number: 002

BCI History

Insp. Date	BCI	Inspector
21-Oct-22	71.99	S. Williams



All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

Standard Codes

Suspected Performance Deficiencies

00	None	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
01	Load carrying capacity	07	Jammed expansion joint	13	Flooding/channel blockage
02	Excessive deformations (deflections/rotations)	08	Pedestrian/vehicular hazard	14	Undermining of foundation
03	Continuing settlement	09	Rough riding surface	15	Unstable embankments
04	Continuing movements	10	Surface ponding	16	Other
05	Seized bearings	11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey Bridges - Maintenance	16	Bridge deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

Decks - Deck Top

Element Group	Decks	**Length**	67.00 **Width** 0.61
Element Name	Deck Top	**Height**	0.00 **Count** 2.00
Location	2 - 2"x12" longitudinal running strips	**Total Quantity**	40.87
Material	Wood	☑ **Limited Inspection**	
Element Type	Laminated Wood Decking - Longitudinal	**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	30.87	10.00	0.00

☐ Moderate
☑ Severe

Comments

Covered with sand and gravel. Light to medium checks and edge wearing.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	1 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***
Rehab	1-5 yrs		Consider replacement of deck.

Decks - Deck Top

Element Group	Decks	**Length**	67.00 **Width** 4.23
Element Name	Deck Top	**Height**	**Count** 0.00
Location	2"x12" transverse laminated	**Total Quantity**	283.41
Material	Wood	☑ **Limited Inspection**	
Element Type	Laminated Wood Decking - Transverse	**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	153.41	100.00	30.00

☐ Moderate
☑ Severe

Comments

Covered with sand and gravel. Transverse deck boards rotten and broken along east sidewalk.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	1 yr	Remove sand and gravel.
	Repair of Bridge Timber	1 yr	Replace rotten/broken transverse deck boards.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***
Rehab	1-5 yrs		Consider replacement of deck.

Municipal Structure Inspection Form

Structure Number: 002

Decks - Soffit - Thin Slab

Element Group	Decks	**Length** 67.00	**Width** 6.00
Element Name	Soffit - Thin Slab	**Height** 0.00	**Count** 0.00
Location	Dimensional lumber (2"x12")	**Total Quantity**	402.00
Material	Wood	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	342.00	60.00	0.00

☑ Moderate
☐ Severe

Comments

Wet areas.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Joints - Seals/Sealants

Element Group	Joints	**Length** 6.95	**Width** 0.00
Element Name	Seals/Sealants	**Height** 0.00	**Count** 2.00
Location	North Side and South Side	**Total Quantity**	2.00
Material		☑ **Limited Inspection**	
Element Type	Strip Seal	**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	2.00	0.00	0.00

☐ Moderate
☑ Severe

Comments

Covered with sand and gravel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	1 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Joints - Concrete End Dams

Element Group	Joints	**Length** 5.45	**Width** 0.50
Element Name	Concrete End Dams	**Height** 0.00	**Count** 4.00
Location	Both Ends	**Total Quantity**	10.90
Material	Cast-in-place concrete	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	10.90	0.00	0.00

☐ Moderate
☑ Severe

Comments

Covered with sand and gravel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	1 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Joints - Armouring/Retaining Devices

Element Group	Joints	**Length** 5.45	**Width** 0.00
Element Name	Armouring/Retaining Devices	**Height** 0.00	**Count** 4.00
Location	Both Sides	**Total Quantity**	21.80
Material	Steel	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	m	0.00	21.80	0.00	0.00

☐ Moderate
☑ Severe

Comments

Covered with sand and gravel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	1 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Sidewalks/curbs - Sidewalks/Medians

Element Group	Sidewalks/curbs	**Length** 67.00	**Width** 1.50
Element Name	Sidewalks/Medians	**Height** 0.00	**Count** 1.00
Location	East Side	**Total Quantity**	100.50
Material	Wood	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	99.50	0.00	1.00

☐ Moderate
☑ Severe

Comments

Covered with sand and gravel. Minor impact damage and deformation to edge plate. Localised abrasion and wearing at north expansion joint.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	1 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Barriers - Railing Systems

Element Group	Barriers	**Length** 67.00	**Width** 0.00
Element Name	Railing Systems	**Height** 0.90	**Count** 2.00
Location	Both Sides	**Total Quantity**	134.00
Material	Steel	☐ **Limited Inspection**	
Element Type	Steel Flex Beam on steel post	**Environment**	
Protection System	Hot dip galvanizing	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	m	0.00	134.00	0.00	0.00

☐ Moderate
☑ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 002

Beams/MLE's - Girders

Element Group	Beams/MLE's		**Length**	3.00	**Width** 0.29
Element Name	Girders	End	**Height**	1.13	**Count** 3.00
Location	South Side				**Total Quantity** 28.17
Material	Steel		☐ **Limited Inspection**		
Element Type	I-type		**Environment**		
Protection System			☐ Benign		
Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	28.17	0.00	0.00
Comments					☐ Severe

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Girders

Element Group	Beams/MLE's		**Length**	3.00	**Width** 0.29
Element Name	Girders	End	**Height**	1.13	**Count** 3.00
Location	North Side				**Total Quantity** 28.17
Material	Steel		☐ **Limited Inspection**		
Element Type	I-type		**Environment**		
Protection System			☐ Benign		
Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	28.17	0.00	0.00
Comments					☐ Severe

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Girders

Element Group	Beams/MLE's		**Length**	61.00	**Width** 0.36
Element Name	Girders	Middle	**Height**	1.50	**Count** 3.00
Location	All				**Total Quantity** 746.64
Material	Steel		☐ **Limited Inspection**		
Element Type	I-type		**Environment**		
Protection System			☑ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	695.14	51.50	0.00

☐ Moderate
☐ Severe

Comments

Some minor pitting along bottom flanges.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Diaphragms

Element Group	Beams/MLE's		**Length**	2.30	**Width** 0.25
Element Name	Diaphragms	End	**Height**	0.66	**Count** 4.00
Location	North Side and South Side				**Total Quantity** 4.00
Material	Steel		☐ **Limited Inspection**		
Element Type	I-type		**Environment**		
Protection System			☐ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	4.00	0.00	0.00

☑ Moderate
☐ Severe

Comments

Nut missing on north abutment uplift tie-down.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Repair to Structural Steel	2 yr	Replace missing nut.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Diaphragms

Element Group	Beams/MLE's		**Length**	0.00	**Width** 0.00
Element Name	Diaphragms	Intermediate	**Height**	0.00	**Count** 4.00
Location	Middle				**Total Quantity** 4.00
Material	Steel		☐ **Limited Inspection**		
Element Type	Cross Type		**Environment**		
Protection System			☑ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	4.00	0.00	0.00

☐ Moderate ☐ Severe

Comments

Light surface patina.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Coatings - Structural Steel

Element Group	Coatings		**Length**	0.00	**Width** 0.00
Element Name	Structural Steel		**Height**	0.00	**Count** 0.00
Location	Girder Ends				**Total Quantity** 24.48
Material			☐ **Limited Inspection**		
Element Type			**Environment**		
Protection System			☐ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	23.48	1.00	0.00

☑ Moderate ☐ Severe

Comments

Edge defects.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 002

Abutments - Abutment Walls

Element Group	Abutments	**Length**	0.00	**Width**	7.40
Element Name	Abutment Walls	**Height**	2.01	**Count**	2.00
Location	North Side and South Side	**Total Quantity**			29.75
Material	Cast-in-place concrete	☐ **Limited Inspection**			
Element Type		**Environment**			
Protection System		☐ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	29.75	0.00	0.00

☑ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Abutments - Ballast Walls

Element Group	Abutments	**Length**	0.00	**Width**	7.40
Element Name	Ballast Walls	**Height**	1.70	**Count**	1.00
Location	South Side	**Total Quantity**			12.58
Material	Cast-in-place concrete	☐ **Limited Inspection**			
Element Type		**Environment**			
Protection System		☐ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	12.58	0.00	0.00

☑ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 002

Abutments - Ballast Walls

Element Group	Abutments	**Length**	0.00 **Width** 7.40
Element Name	Ballast Walls	**Height**	1.55 **Count** 1.00
Location	North Side	**Total Quantity**	11.47
Material	Cast-in-place concrete	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	11.47	0.00	0.00

☑ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Abutments - Wingwalls

Element Group	Abutments	**Length**	3.80 **Width**
Element Name	Wingwalls	**Height**	1.55 **Count** 2.00
Location	North Side	**Total Quantity**	11.78
Material	Cast-in-place concrete	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	11.78	0.00	0.00

☑ Moderate
☐ Severe

Comments

Light honeycombing throughout.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 002

Abutments - Wingwalls

Element Group	Abutments	**Length**	3.75	**Width**	
Element Name	Wingwalls	**Height**	1.70	**Count**	2.00
Location	South Side			**Total Quantity**	12.75
Material	Cast-in-place concrete	☐ **Limited Inspection**			
Element Type		**Environment**			
Protection System		☐ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	12.75	0.00	0.00

☑ Moderate
☐ Severe

Comments

Light honeycombing throughout.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Abutments - Bearings

Element Group	Abutments	**Length**	0.00	**Width**	0.00
Element Name	Bearings	**Height**	0.00	**Count**	3.00
Location	North Side			**Total Quantity**	3.00
Material	Rubber	☐ **Limited Inspection**			
Element Type	Elastomeric pad	**Environment**			
Protection System		☐ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	3.00	0.00	0.00

☑ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 002

Abutments - Bearings

Element Group	Abutments	**Length** 0.00	**Width** 0.00
Element Name	Bearings	**Height** 0.00	**Count** 3.00
Location	South Side	**Total Quantity**	3.00
Material	Rubber	☐ **Limited Inspection**	
Element Type	Elastomeric pad	**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	3.00	0.00	0.00

☑ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Piers - Shafts/Columns/Pile Bents

Element Group	Piers	**Length** 0.25	**Width** 0.25
Element Name	Shafts/Columns/Pile Bents	**Height** 3.10	**Count** 4.00
Location	South Side	**Total Quantity**	9.74
Material	Steel	☐ **Limited Inspection**	
Element Type	Steel tube piles with capping beam	**Environment**	
Protection System	Coal tar epoxy	☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	8.24	1.50	0.00

☐ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 002

Piers - Shafts/Columns/Pile Bents

Element Group	Piers	**Length**	0.25	**Width**	0.25
Element Name	Shafts/Columns/Pile Bents	**Height**	3.50	**Count**	3.00
Location	North Side	**Total Quantity**			8.25
Material	Steel	☐ **Limited Inspection**			
Element Type	Steel tube piles with capping beam	**Environment**			
Protection System	Coal tar epoxy	☑ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	8.25	0.00	0.00

☐ Moderate ☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Piers - Caps

Element Group	Piers	**Length**	0.65	**Width**	6.10
Element Name	Caps	**Height**	0.90	**Count**	1.00
Location	South Side	**Total Quantity**			20.08
Material	Cast-in-place concrete	☐ **Limited Inspection**			
Element Type		**Environment**			
Protection System		☑ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	20.08	0.00	0.00

☐ Moderate ☐ Severe

Comments

Minor construction defects, rust stains and wet areas.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 002

Piers - Caps

Element Group	Piers	**Length** 0.65	**Width** 6.10
Element Name	Caps	**Height** 0.90	**Count** 1.00
Location	North Side	**Total Quantity**	20.08
Material	Cast-in-place concrete	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	20.08	0.00	0.00

☐ Moderate ☐ Severe

Comments

Minor construction defects, rust stains and wet areas.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Piers - Bearings

Element Group	Piers	**Length** 0.00	**Width** 0.00
Element Name	Bearings	**Height** 0.00	**Count** 6.00
Location	Piers	**Total Quantity**	6.00
Material	Rubber	☐ **Limited Inspection**	
Element Type	Elastomeric pad	**Environment**	
Protection System		☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	6.00	0.00	0.00

☐ Moderate ☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 002

Repair/Rehabilitation Required

Element Group	Element	Repair/Rehabilitation	Priority	Cost
Decks	Deck Top	Rehab	1-5 yrs	
Decks	Deck Top	Rehab	1-5 yrs	
		Total Repair/Rehabilitation Cost		

Associated Work

	Comments			Estimated Cost
Approaches				$0
Detours				$0
Traffic Control				$0
Utilities				$0
Right-of-Way				$0
Environmental Study				$0
Other				$0
Contingencies		**%**	**	$0
Engineering		**%**	**	$0

** If based on a percentage calculated values rounded-up to the nearest thousand dollars.

Total Associated Work Cost	**$0**
Total Repair/Rehabilitation Cost	**$0**
Total Cost	**$0**
Town of Moosonee Share @ 100%	$0

Justification

Looking North at Bridge

East Elevation

West Elevation

Looking North at North Approach

Looking South at South Approach

Looking North at Deck from Centre of Bridge

Looking South at Deck from Centre of Bridge

Looking North at East Sidewalk

Typical Sand and Gravel Covering Deck

Rotten and Broken Transverse Deck Boards along East Sidewalk

Impact Damage to Edge Plate and Localised Abrasion/Wear near North Expansion Joint.

Looking West at South Expansion Joint

Looking West at North Expansion Joint

Missing End Cap on Handrail

Missing Anchor Bolt on Handrail

Typical Soffit

Wet Areas on Soffit

North Abutment

South Abutment

Typical Abutment Diaphragm

Missing Nut at North Abutment Tie-Down

Typical Abutment Bearing

Typical Wingwall

Typical Pier

Typical Pier Diaphragm

Typical Intermediate Diaphragm

Typical Pier Bearing

Wet Areas on Pier Cap

Edge Defect in Coating at Girder End

Summary Action Report

Structure 003 (MTO Site No. 639-0006)

Quarry Road Bridge

Inspection Date 10-21-2022 mm/dd/yyyy

Next Biennial Inspection 10-21-2024 mm/dd/yyyy

Condition Index Value (BCI) **74.15**

Current Rep. Value

Additional Investigations

Investigation	Priority	Cost	Investigation	Priority	Cost

No additional investigations required.

Performance Deficiencies

Element Group	Element	Performance Deficiency
Abutments	Bearings	Other
Approaches	Wearing Surface	Rough riding surface
Embankments & Streams	Embankments	Unstable embankments
Embankments & Streams	Slope Protection	Unstable embankments

Maintenance Needs

Element Group	Element	Maintenance Required	Priority	Comment
Embankments & Streams	Slope Protection	Erosion Control at Bridges	1 yr	Repair embankment in Northwest quadrant.
Embankments & Streams	Embankments	Erosion Control at Bridges	1 yr	Repair embankment in Northwest quadrant..
Sidewalks/curbs	Curbs	Bridge Cleaning	2 yr	Remove sand and gravel.
Barriers	Railing Systems	Bridge Handrail Maintenance	2 yr	Repair top rail.
Joints	Seals/Sealants	Bridge Cleaning	2 yr	Clean seals.
Approaches	Wearing Surface	Bridge Surface Repair	2 yr	Repair potholes.
Decks	Deck Top	Bridge Cleaning	2 yr	Remove sand and gravel.
Decks	Drainage	Bridge Cleaning	2 yr	Clean drains.

Repair/Rehabilitation

Element Group	Element	Repair/Rehabilitation		Priority	Cost
Abutments	Bearings	Rehab	Restraint horizontal movement	None	$10,000
			Total Repair/Rehabilitation Cost		**$10,000**

Town of Moosonee	100 %	$10,000.00	**Total Associated Work Cost**	**$0**
	%		**Total Cost**	**$10,000**

Overall Comments

Bridge is in generally good condition. It is noted that the superstructure is not connected laterally or longitudinally to the substructure. There are localised signs of leaking on the ballast walls and bearing seats below the expansion joints. The embankment in the northwest quadrant is severely eroded. There are potholes on the approaches. Could not fully inspect expansion joints, curbs, deck top and deck drains due to them being covered with dirt and gravel.

Municipal Structure Inspection Form

Structure Number: 003

Inventory Data

Structure Name	Quarry Road Bridge	**Hwy No.**	Quarry	**Key Photo**	
Cross. Type Over	☒ Road ☒ Rail ☒ Ped ☒ Nav. Water ☒ Non-Nav. Wat. ☒ Other				
Cross. Type Under	☐ Road ☐ Rail ☐ Ped ☐ Nav. Water ☑ Non-Nav. Wat. ☐ Other				
Road Name	Quarry Road				
Structure Location	Overy Maidman's Creek				
Latitude	51.22167	**Longitude**	-80.70000	**Cur. Rep.Value**	**
Owner(s)/ % Share	Town of Moosonee 100 %				
	%	**Heritage Status**			
MTO Region		**Road Side Env.**			
MTO District		**Road Class**	Collector		
Old County		**Lane Type**			
Geographic Twp.		**Posted Speed**		**No. of Lanes**	2
Structure Type		**AADT**	200	**Pct. Trucks**	
Structure Material		**Inspection Route Sequence**			
Articulation		**Interchange Number**			
Total Deck Length	22.3 m	**Road Width**	7.9 m	**Interchange Structure Number**	
Overall Width	9.32 m	**Vert. Clear.**	m	**Detour Length** km	**Skew Angle** 0 °
Total Deck Area	207.84 m^2	**No. of Spans**	0	**Fill on Structure** 0 m	**Struct. Dir.** North/South
Special Routes	☐ Transit ☐ School ☐ Truck ☐ Bicycle			**Insp. Duration** hr	

** Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure.

Spans

Span Name	Span Length	Span Name	Span Length
1	21.4 m		

Historical Data

Year Built	1974 yyyy	**Year of Last Major Rehab**	yyyy
Last OSIM Inspection	09-07-2020 mm/dd/yyyy	**Contract No. When Built**	
Last Enhanced OSIM	mm/dd/yyyy	**Last Evaluation**	mm/dd/yyyy
Last Enhanced Access	mm/dd/yyyy	**Current Load Limit**	t t t
Last Underwater Insp.	mm/dd/yyyy	**Load Limit By-Law No.**	mm/dd/yyyy
Last Condition Survey	mm/dd/yyyy	**By-Law Expiry Date**	mm/dd/yyyy

Rehab History

Municipal Structure Inspection Form

Structure Number: 003

Field Inspection Information:

Inspection Date	10-21-2022 mm/dd/yyyy	☐ Multi Day Inspection	☑ OSIM	☐ Enhanced OSIM	**BCI** 74.15
Inspector	S. Williams	**Eng. Responsible**	D. Adamson		
Others in Party	O. Zhychkovska				
Access Equip.	☐ Lift	☐ Ladder	☐ Boat	☐ Bridge Master	Other
Other Equip.	Camera, Hammer, Other Hand Tools				
Weather	Rain	**Temperature**	3 °C		

Additional Investigations Required:

Investigation	**Priority** None	Normal	Urgent	**Estimated Cost**
Detailed Deck Condition Survey	☐	☐	☐	$0
Delamination Survey of Asphalt-Covered Deck	☐	☐	☐	$0
Concrete Substructure Condition Survey	☐	☐	☐	$0
Detailed Coating Condition Survey	☐	☐	☐	$0
Detailed Timber Investigation	☐	☐	☐	$0
Post-Tensioned Strand Investigation	☐	☐	☐	$0
Underwater Investigation	☐	☐	☐	$0
Fatigue Investigation	☐	☐	☐	$0
Seismic Investigation	☐	☐	☐	$0
Structure Evaluation	☐	☐	☐	$0
Monitoring of Deformations, Movements and Settlements	☐	☐	☐	$0
Monitoring of Crack Widths	☐	☐	☐	$0
			Total Cost	$0

Investigation Notes

Overall Structure Notes:

Recommended Work on Structure ☐ None ☑ Rehab ☐ Replace ☐ Remove

Timing of Recommended Work ☐ None ☐ Now ☑ 1 to 5 years ☐ 6 to 10 years

Overall Comments

Bridge is in generally good condition. It is noted that the superstructure is not connected laterally or longitudinally to the substructure. There are localised signs of leaking on the ballast walls and bearing seats below the expansion joints. The embankment in the northwest quadrant is severely eroded. There are potholes on the approaches. Could not fully inspect expansion joints, curbs, deck top and deck drains due to them being covered with dirt and gravel.

BCI Change Justification

Next Inspection 10-21-2024 mm/dd/yyyy

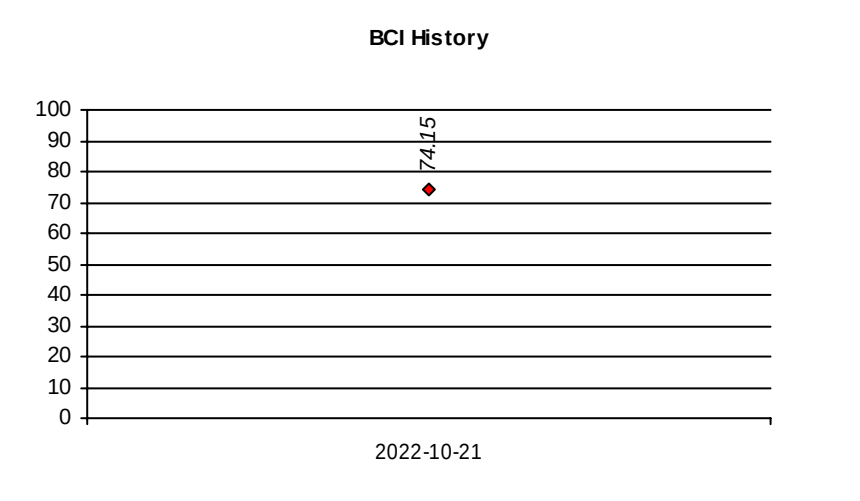
Estimated Load Limit t t t

Municipal Structure Inspection Form

Structure Number: 003

BCI History

Insp. Date	BCI	Inspector
21-Oct-22	74.15	S. Williams



All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

Standard Codes

Suspected Performance Deficiencies

00	None	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
01	Load carrying capacity	07	Jammed expansion joint	13	Flooding/channel blockage
02	Excessive deformations (deflections/rotations)	08	Pedestrian/vehicular hazard	14	Undermining of foundation
03	Continuing settlement	09	Rough riding surface	15	Unstable embankments
04	Continuing movements	10	Surface ponding	16	Other
05	Seized bearings	11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey Bridges - Maintenance	16	Bridge deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

Decks - Deck Top

Element Group	Decks	**Length**	22.30 **Width** 9.32
Element Name	Deck Top	**Height**	0.00 **Count** 0.00
Location	All	**Total Quantity**	207.84
Material	Cast-in-place concrete	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	197.84	10.00	0.00

☐ Moderate
☑ Severe

Comments

Covered with sand and gravel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Decks - Soffit - Thin Slab

Element Group	Decks	**Length**	6.00 **Width** 8.28
Element Name	Soffit - Thin Slab End	**Height**	0.00 **Count** 0.00
Location	Both Ends	**Total Quantity**	49.68
Material	Cast-in-place concrete	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	49.68	0.00	0.00

☑ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 003

Decks - Soffit - Thin Slab

Element Group	Decks		**Length**	16.30	**Width** 1.80
Element Name	Soffit - Thin Slab	Exterior	**Height**	0.00	**Count** 0.00
Location	East Side and West Side				**Total Quantity** 29.34
Material	Cast-in-place concrete		☐ **Limited Inspection**		
Element Type			**Environment**		
Protection System			☐ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	28.34	0.00	1.00

☑ Moderate
☐ Severe

Comments

Efflorescence stained cracks.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Decks - Soffit - Thin Slab

Element Group	Decks		**Length**	16.30	**Width** 6.48
Element Name	Soffit - Thin Slab	Interior	**Height**	0.00	**Count** 0.00
Location	Under Roadway				**Total Quantity** 105.62
Material	Cast-in-place concrete		☐ **Limited Inspection**		
Element Type			**Environment**		
Protection System			☑ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	105.62	0.00	0.00

☐ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 003

Decks - Drainage

Element Group	Decks	**Length** 0.00	**Width** 0.00
Element Name	Drainage	**Height** 0.00	**Count** 2.00
Location	All	**Total Quantity**	2.00
Material	Steel	☐ **Limited Inspection**	
Element Type	Drain Pipe with Basins	**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	0.00	2.00	0.00

☐ Moderate
☑ Severe

Comments

Gravel on deck blocking drains.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Clean drains.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Joints - Seals/Sealants

Element Group	Joints	**Length** 9.30	**Width** 0.00
Element Name	Seals/Sealants	**Height** 0.00	**Count** 2.00
Location	All	**Total Quantity**	2.00
Material		☑ **Limited Inspection**	
Element Type	Strip Seal	**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	0.00	2.00	0.00

☐ Moderate
☑ Severe

Comments

Signs of leaking below. Seals covered in sand and gravel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Clean seals.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Sidewalks/curbs - Curbs

Element Group	Sidewalks/curbs	**Length** 28.30	**Width** 0.60
Element Name	Curbs	**Height** 0.00	**Count** 2.00
Location	East Side and West Side	**Total Quantity**	33.96
Material	Cast-in-place concrete	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	31.96	1.00	1.00

☐ Moderate
☑ Severe

Comments

Narrow to medium cracks, small spalls. Covered in sand and gravel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Barriers - Railing Systems

Element Group	Barriers	**Length** 28.30	**Width** 0.00
Element Name	Railing Systems	**Height** 0.80	**Count** 2.00
Location	Both Sides	**Total Quantity**	56.60
Material	Steel	☐ **Limited Inspection**	
Element Type	Steel Flex Beam on steel post	**Environment**	
Protection System	Hot dip galvanizing	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	m	0.00	53.60	0.00	3.00

☐ Moderate
☑ Severe

Comments

Two sections of top rail deformed from impact on west side.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Handrail Maintenance	2 yr	Repair top rail.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Girders

Element Group	Beams/MLE's		**Length**	6.00	**Width** 0.41
Element Name	Girders	End	**Height**	0.84	**Count** 4.00
Location	North Side and South Side				**Total Quantity** 69.84
Material	Weathering steel		☐ **Limited Inspection**		
Element Type	I-type		**Environment**		
Protection System			☐ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	69.84	0.00	0.00

☑ Moderate
☐ Severe

Comments

Minor pitting.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Girders

Element Group	Beams/MLE's		**Length**	15.70	**Width** 0.41
Element Name	Girders	Middle	**Height**	0.84	**Count** 4.00
Location	Middle				**Total Quantity** 182.75
Material	Weathering steel		☐ **Limited Inspection**		
Element Type	I-type		**Environment**		
Protection System			☑ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	182.75	0.00	0.00

☐ Moderate
☐ Severe

Comments

Minor pitting.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Diaphragms

Element Group	Beams/MLE's		**Length**	2.40	**Width** 0.08
Element Name	Diaphragms	Intermediate	**Height**	0.40	**Count** 6.00
Location	Middle				**Total Quantity** 6.00
Material	Steel		☐ **Limited Inspection**		
Element Type			**Environment**		
Protection System	Hot dip galvanizing		☑ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	6.00	0.00	0.00

☐ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Beams/MLE's - Diaphragms

Element Group	Beams/MLE's		**Length**	2.40	**Width** 0.18
Element Name	Diaphragms	End	**Height**	0.35	**Count** 6.00
Location	Both Ends				**Total Quantity** 6.00
Material	Steel		☐ **Limited Inspection**		
Element Type	I-type		**Environment**		
Protection System	Hot dip galvanizing		☐ Benign		

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	6.00	0.00	0.00

☑ Moderate
☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 003

Abutments - Abutment Walls

Element Group	Abutments	**Length** 0.00	**Width** 9.13
Element Name	Abutment Walls	**Height** 2.40	**Count** 2.00
Location	North Side and South Side	**Total Quantity**	43.82
Material	Cast-in-place concrete	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	42.82	1.00	0.00

☑ Moderate ☐ Severe

Comments

Some honeycombing with hairline cracking on both abutments. Graffiti noted on north abutment.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Abutments - Ballast Walls

Element Group	Abutments	**Length** 0.00	**Width** 9.13
Element Name	Ballast Walls	**Height** 0.85	**Count** 2.00
Location	North Side and South Side	**Total Quantity**	15.52
Material	Cast-in-place concrete	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	14.52	1.00	0.00

☑ Moderate ☐ Severe

Comments

Wet areas.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 003

Abutments - Wingwalls

Element Group	Abutments	**Length**	3.30 **Width** 0.00
Element Name	Wingwalls	**Height**	1.70 **Count** 4.00
Location	North Side and South Side	**Total Quantity**	22.44
Material	Cast-in-place concrete	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	22.44	0.00	0.00

☑ Moderate ☐ Severe

Comments

Minor surface defects from casting. Light map cracking on Northeast wingwall.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Abutments - Bearings

Element Group	Abutments	**Length**	0.00 **Width** 0.00
Element Name	Bearings	**Height**	0.00 **Count** 8.00
Location	North Side and South Side	**Total Quantity**	8.00
Material	Rubber	☐ **Limited Inspection**	
Element Type	Elastomeric pad	**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	8.00	0.00	0.00

☑ Moderate ☐ Severe

Comments

No horizontal restraint provided for superstructure.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
Other			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***
Rehab	None	$10,000	Restraint horizontal movement

Municipal Structure Inspection Form

Structure Number: 003

Embankments & Streams - Streams & Waterways

Element Group	Embankments & Streams	**Length** 0.00	**Width** 0.00
Element Name	Streams & Waterways	**Height** 0.00	**Count** 0.00
Location	All	**Total Quantity**	1.00
Material		☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	All	0.00	1.00	0.00	0.00

☐ Moderate ☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Embankments & Streams - Embankments

Element Group	Embankments & Streams	**Length** 0.00	**Width** 0.00
Element Name	Embankments	**Height** 0.00	**Count** 6.00
Location	Both Sides	**Total Quantity**	6.00
Material		☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	5.00	0.00	1.00

☐ Moderate ☐ Severe

Comments

Severe erosion in Northwest quadrant.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
Unstable embankments	Erosion Control at Bridges	1 yr	Repair embankment in Northwest quadrant.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 003

Embankments & Streams - Slope Protection

Element Group	Embankments & Streams	**Length** 0.00	**Width** 0.00
Element Name	Slope Protection	**Height** 0.00	**Count** 6.00
Location	Both Sides	**Total Quantity**	6.00
Material	Vegetation	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	5.00	0.00	1.00

☐ Moderate ☐ Severe

Comments

Severe erosion in Northwest quadrant.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
Unstable embankments	Erosion Control at Bridges	1 yr	Repair embankment in Northwest quadrant.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Approaches - Wearing Surface

Element Group	Approaches	**Length** 6.00	**Width** 7.90
Element Name	Wearing Surface	**Height** 0.00	**Count** 2.00
Location	North Side and South Side	**Total Quantity**	94.80
Material	Gravel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	90.80	0.00	4.00

☐ Moderate ☑ Severe

Comments

Potholes.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
Rough riding surface	Bridge Surface Repair	2 yr	Repair potholes.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 003

Repair/Rehabilitation Required

Element Group	Element	Repair/Rehabilitation	Priority	Cost
Abutments	Bearings	Rehab	None	$10,000
		Total Repair/Rehabilitation Cost		**$10,000**

Associated Work

	Comments			Estimated Cost
Approaches				$0
Detours				$0
Traffic Control				$0
Utilities				$0
Right-of-Way				$0
Environmental Study				$0
Other				$0
Contingencies			**%**	** $0
Engineering			**%**	** $0

** If based on a percentage calculated values rounded-up to the nearest thousand dollars.

Total Associated Work Cost	**$0**
Total Repair/Rehabilitation Cost	**$10,000**
Total Cost	**$10,000**
Town of Moosonee Share @ 100%	$10,000

Justification

Looking South at Bridge

East Elevation

West Elevation

Looking North at North Approach

Looking South at South Approach

Looking North at Deck Top

Pothole on Approach

Looking West at South Expansion Joint

Looking West at North Expansion Joint

Deck Drain Catch Basin Filled with Debris

Curb Covered with Sand and Gravel

Small Spall on Curb

Deformation of Top Rail of Guide Rail

Deformation of Top Rail of Guide Rail

North Abutment

South Abutment

Light Honeycombing on Abutment

Wet Areas on Ballast Wall

Typical Abutment Bearing

Typical Soffit

Typical Abutment Diaphragm

Typical Intermediate Diaphragm

Efflorescence Stained Crack on Exterior Soffit

Severe Erosion in Northwest Quadrant

Summary Action Report

Structure 004 (MTO Site No. 39N-8)

Atim Road Bridge - Store Creek West

Inspection Date 10-21-2022 mm/dd/yyyy

Next Biennial Inspection 10-21-2024 mm/dd/yyyy

Condition Index Value (BCI) **71.56**

Current Rep. Value

Additional Investigations

Investigation	Priority	Cost	Investigation	Priority	Cost
Monitoring of Deformations, Movements and	Normal	$0			

Additional investigations required see page 3 for details.

Performance Deficiencies

Element Group	Element	Performance Deficiency
Approaches	Wearing Surface	Rough riding surface

Maintenance Needs

Element Group	Element	Maintenance Required	Priority	Comment
Approaches	Wearing Surface	Bridge Surface Repair	2 yr	Repair potholes.
Sidewalks/curbs	Curbs	Bridge Cleaning	2 yr	Remove sand and gravel.
Embankments & Streams	Streams & Waterways	Stream debris removal	1 yr	Remove debris in stream.
Barriers	Railing Systems	Bridge Handrail Maintenance	2 yr	Repair attenuator.
Decks	Deck Top	Bridge Cleaning	2 yr	Remove sand and gravel.
Joints	Seals/Sealants	Bridge Cleaning	2 yr	Clean seals.

Repair/Rehabilitation

No Repair/Rehabilitation Requirements

Town of Moosonee	100 %	$0.00	**Total Associated Work Cost**	**$0**
	%		**Total Cost**	**$0**

Overall Comments

Bridge is in generally good condition. There is a localised deformation on one of the pier H-piles in the creek probably from ice/debris impact. There are localised signs of leaking on the ballast walls and bearing seats below the expansion joints. There are potholes on the approaches and a damaged attenuator in the Southeast quadrant. The stream is partially blocked with debris. Could not fully inspect expansion joints, curbs and deck top due to them being covered with dirt and gravel.

Municipal Structure Inspection Form

Structure Number: 004

Inventory Data

Structure Name	Atim Road Bridge - Store Creek West	**Hwy No.**	Atim Rd	**Key Photo**	
Cross. Type Over	☑ Road ☐ Rail ☐ Ped ☐ Nav. Water ☐ Non-Nav. Wat. ☐ Other				
Cross. Type Under	☐ Road ☐ Rail ☐ Ped ☑ Nav. Water ☐ Non-Nav. Wat. ☐ Other				
Road Name	Atim Road				
Structure Location	Over Store Creek				
Latitude	51.27278	**Longitude**	-80.64917	**Cur. Rep.Value**	**
Owner(s)/ % Share	Town of Moosonee 100 %				
	%	**Heritage Status**			
MTO Region		**Road Side Env.**			
MTO District		**Road Class**	Local		
Old County		**Lane Type**			
Geographic Twp.		**Posted Speed**	50	**No. of Lanes**	2
Structure Type		**AADT**	400	**Pct. Trucks**	
Structure Material	Timber-Concrete Composite	**Inspection Route Sequence**			
Articulation		**Interchange Number**			
Total Deck Length	121.57 m	**Road Width**	8 m	**Interchange Structure Number**	
Overall Width	9.57 m	**Vert. Clear.**	m	**Detour Length**	1.5 km
Total Deck Area	1163.42 m^2	**No. of Spans**	19	**Fill on Structure**	0 m
Special Routes	☐ Transit ☐ School ☐ Truck ☐ Bicycle	**Insp. Duration**	hr		

** Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure.

Spans

Span Name	Span Length	Span Name	Span Length
1	5.4 m	2	6.8 m
3	6.7 m	4	6.6 m
5	5.6 m	6	5.5 m
7	7.0 m	8	6.4 m
9	6.8 m	10	6.9 m
11	6.7 m	12	6.5 m
13	6.7 m	14	5.7 m
15	5.4 m	16	6.6 m
17	6.6 m	18	6.8 m
19	5.3 m		

Historical Data

Year Built	1976 yyyy	**Year of Last Major Rehab**	yyyy
Last OSIM Inspection	09-07-2022 mm/dd/yyyy	**Contract No. When Built**	
Last Enhanced OSIM	mm/dd/yyyy	**Last Evaluation**	mm/dd/yyyy
Last Enhanced Access	mm/dd/yyyy	**Current Load Limit**	16 t 29 t 40 t
Last Underwater Insp.	mm/dd/yyyy	**Load Limit By-Law No.**	mm/dd/yyyy

Municipal Structure Inspection Form

Structure Number: 004

Last Condition Survey	mm/dd/yyyy	**By-Law Expiry Date**	mm/dd/yyyy

Rehab History

Rehab Date	Rehab Description
2000-01-01	Water pipe hung from west side.
2014-01-01	- Repaired corroded H-piles, coated all piles with coat tar epoxy system - Repaired cracks on dck surface by injection, and repaired deteriorated concretes, - Replaced damaged railing on bridge, installed new concrete curb and approach steel beam guide rail energy attenuating terminal at all four corners, - Repaired scouring and erosion areas on river bank with clean rock fills, constructed new drainage ditches on NE and SW corners.

Municipal Structure Inspection Form

Structure Number: 004

Field Inspection Information:

Inspection Date	10-21-2022 mm/dd/yyyy	☐ Multi Day Inspection	☑ OSIM	☐ Enhanced OSIM	**BCI** 71.56
Inspector	S. Williams	**Eng. Responsible**	D. Adamson		
Others in Party	O. Zhychkovska				
Access Equip.	☐ Lift	☐ Ladder	☐ Boat	☐ Bridge Master	Other
Other Equip.	Camera, Hammer, Other Hand Tools				
Weather	Rain	**Temperature**	2 °C		

Additional Investigations Required:

Investigation	**Priority** None	Normal	Urgent	**Estimated Cost**
Detailed Deck Condition Survey	☐	☐	☐	$0
Delamination Survey of Asphalt-Covered Deck	☐	☐	☐	$0
Concrete Substructure Condition Survey	☐	☐	☐	$0
Detailed Coating Condition Survey	☐	☐	☐	$0
Detailed Timber Investigation	☐	☐	☐	$0
Post-Tensioned Strand Investigation	☐	☐	☐	$0
Underwater Investigation	☐	☐	☐	$0
Fatigue Investigation	☐	☐	☐	$0
Seismic Investigation	☐	☐	☐	$0
Structure Evaluation	☐	☐	☐	$0
Monitoring of Deformations, Movements and Settlements	☐	☑	☐	$0
Monitoring of Crack Widths	☐	☐	☐	$0
			Total Cost	$0

Investigation Notes

Monitor movement at north end.

Overall Structure Notes:

Recommended Work on Structure ☐ None ☑ Rehab ☐ Replace ☐ Remove

Timing of Recommended Work ☐ None ☐ Now ☑ 1 to 5 years ☐ 6 to 10 years

Overall Comments

Bridge is in generally good condition. There is a localised deformation on one of the pier H-piles in the creek probably from ice/debris impact. There are localised signs of leaking on the ballast walls and bearing seats below the expansion joints. There are potholes on the approaches and a damaged attenuator in the Southeast quadrant. The stream is partially blocked with debris. Could not fully inspect expansion joints, curbs and deck top due to them being covered with dirt and gravel.

BCI Change Justification

Next Inspection 10-21-2024 mm/dd/yyyy

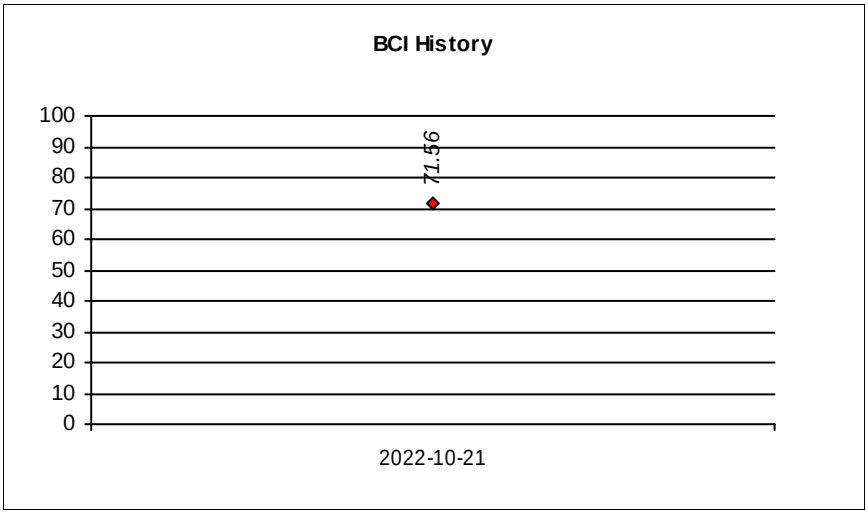
Estimated Load Limit 16 t 29 t 40 t

Municipal Structure Inspection Form

Structure Number: 004

BCI History

Insp. Date	BCI	Inspector
21-Oct-22	71.56	S. Williams



All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

Standard Codes

Suspected Performance Deficiencies

00	None	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
01	Load carrying capacity	07	Jammed expansion joint	13	Flooding/channel blockage
02	Excessive deformations (deflections/rotations)	08	Pedestrian/vehicular hazard	14	Undermining of foundation
03	Continuing settlement	09	Rough riding surface	15	Unstable embankments
04	Continuing movements	10	Surface ponding	16	Other
05	Seized bearings	11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey Bridges - Maintenance	16	Bridge deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

Decks - Deck Top

Element Group	Decks	**Length**	122.00 **Width** 8.00
Element Name	Deck Top	**Height**	0.00 **Count** 0.00
Location	All	**Total Quantity**	976.00
Material	Cast-in-place concrete	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	826.00	150.00	0.00

☐ Moderate
☑ Severe

Comments

Light scaling, longitudinal and transverse narrow to medium cracks. Covered with sand and gravel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Decks - Soffit - Thin Slab

Element Group	Decks	**Length**	122.00 **Width** 9.52
Element Name	Soffit - Thin Slab	**Height**	0.00 **Count** 0.00
Location	All	**Total Quantity**	1161.44
Material	Timber	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System	Creosote	☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	681.44	480.00	0.00

☐ Moderate
☐ Severe

Comments

General weathering, more on outside edges.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 004

Decks - Drainage

Element Group	Decks	**Length**	0.00	**Width**	0.00
Element Name	Drainage	**Height**	0.00	**Count**	18.00
Location	All			**Total Quantity**	18.00
Material	Steel	☐ **Limited Inspection**			
Element Type		**Environment**			
Protection System		☐ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	18.00	0.00	0.00

☐ Moderate
☑ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Joints - Seals/Sealants

Element Group	Joints	**Length**	0.00	**Width**	0.00
Element Name	Seals/Sealants	**Height**	0.00	**Count**	2.00
Location	All			**Total Quantity**	2.00
Material		☑ **Limited Inspection**			
Element Type	Strip Seal	**Environment**			
Protection System		☐ Benign			

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	0.00	2.00	0.00

☐ Moderate
☑ Severe

Comments

Covered with sand and gravel. Signs of leaking below.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Clean seals.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Sidewalks/curbs - Curbs

Element Group	Sidewalks/curbs	**Length** 121.57	**Width** 0.79
Element Name	Curbs	**Height** 0.30	**Count** 2.00
Location	Both Sides	**Total Quantity**	263.81
Material	Cast-in-place concrete	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	260.81	2.00	1.00

☐ Moderate
☑ Severe

Comments

Narrow to wide cracks, spalls and delaminations. Covered with sand and gravel.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Cleaning	2 yr	Remove sand and gravel.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Barriers - Railing Systems

Element Group	Barriers	**Length** 122.00	**Width** 0.00
Element Name	Railing Systems	**Height** 1.00	**Count** 2.00
Location	Both Sides	**Total Quantity**	244.00
Material	Steel	☐ **Limited Inspection**	
Element Type	Steel Flex Beam on steel post	**Environment**	
Protection System	Hot dip galvanizing	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	m	0.00	241.00	0.00	3.00

☐ Moderate
☑ Severe

Comments

Impact damage to Southeast attentuator.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Bridge Handrail Maintenance	2 yr	Repair attenuator.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 004

Coatings - Structural Steel

Element Group	Coatings	**Length** 0.00	**Width** 0.00
Element Name	Structural Steel	**Height** 0.00	**Count** 0.00
Location	Piers	**Total Quantity**	653.40
Material		☐ **Limited Inspection**	
Element Type	Coal tar epoxy	**Environment**	
Protection System		☐ Benign	

Condition Data

Units	*Excell.*	*Good*	*Fair*	*Poor*
sq. m	0.00	653.40	0.00	0.00

☑ Moderate ☐ Severe

Comments

Performance Deficiencies

None

Maintenance Needs *Priority* *Comments*

Rehab/Repair Recommendations *Priority* *Cost* *Comments*

Abutments - Abutment Walls

Element Group	Abutments	**Length** 0.00	**Width** 9.75
Element Name	Abutment Walls	**Height** 0.40	**Count** 1.00
Location	South Side	**Total Quantity**	3.90
Material	Steel	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System	None	☐ Benign	

Condition Data

Units	*Excell.*	*Good*	*Fair*	*Poor*
sq. m	0.00	1.50	2.00	0.40

☑ Moderate ☐ Severe

Comments

Light corrosion. Bottom flange covered with debris.

Performance Deficiencies

None

Maintenance Needs *Priority* *Comments*

Rehab/Repair Recommendations *Priority* *Cost* *Comments*

Municipal Structure Inspection Form

Structure Number: 004

Abutments - Abutment Walls

Element Group	Abutments	**Length** 0.00	**Width** 9.75
Element Name	Abutment Walls	**Height** 0.40	**Count** 1.00
Location	North Side	**Total Quantity**	3.90
Material	Steel	☑ **Limited Inspection**	
Element Type		**Environment**	
Protection System	None	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	1.50	2.00	0.40

☑ Moderate
☐ Severe

Comments

Light corrosion. Bottom flange covered with debris.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Piers - Shafts/Columns/Pile Bents

Element Group	Piers	**Length** 0.30	**Width** 0.30
Element Name	Shafts/Columns/Pile Bents	**Height** 5.50	**Count** 66.00
Location	All	**Total Quantity**	653.40
Material	Steel	☐ **Limited Inspection**	
Element Type	Steel H piles with capping beam	**Environment**	
Protection System	Coal tar epoxy	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	652.40	0.00	1.00

☑ Moderate
☐ Severe

Comments

Localized deformation from ice/debris impact on river pier..

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 004

Piers - Caps

Element Group	Piers	**Length** 0.37	**Width** 9.75
Element Name	Caps	**Height** 0.35	**Count** 20.00
Location	All	**Total Quantity**	285.98
Material	Steel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System	Coal tar epoxy	☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	246.00	39.98	0.00

☑ Moderate ☐ Severe

Comments

Light to medium surface rusting.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Embankments & Streams - Streams & Waterways

Element Group	Embankments & Streams	**Length** 0.00	**Width** 0.00
Element Name	Streams & Waterways	**Height** 0.00	**Count** 0.00
Location		**Total Quantity**	1.00
Material		☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☑ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	All	0.00	0.00	1.00	0.00

☐ Moderate ☐ Severe

Comments

Debris partially blocking stream.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None	Stream debris removal	1 yr	Remove debris in stream.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 004

Embankments & Streams - Embankments

Element Group	Embankments & Streams	**Length**	0.00
Element Name	Embankments	**Width**	0.00
Location	Under Bridge	**Height**	0.00
Material		**Count**	6.00
Element Type		**Total Quantity**	6.00
Protection System	Rock/Vegetation	☐ **Limited Inspection**	

Environment

☑ Benign
☐ Moderate
☐ Severe

Condition Data

Units	*Excell.*	*Good*	*Fair*	*Poor*
Each	0.00	6.00	0.00	0.00

Comments

Performance Deficiencies

None

Maintenance Needs *Priority* *Comments*

Rehab/Repair Recommendations *Priority* *Cost* *Comments*

Embankments & Streams - Slope Protection

Element Group	Embankments & Streams	**Length**	0.00
Element Name	Slope Protection	**Width**	0.00
Location	Under Bridge	**Height**	0.00
Material	Rock	**Count**	2.00
Element Type	Rock protection	**Total Quantity**	2.00
Protection System		☐ **Limited Inspection**	

Environment

☑ Benign
☐ Moderate
☐ Severe

Condition Data

Units	*Excell.*	*Good*	*Fair*	*Poor*
Each	0.00	2.00	0.00	0.00

Comments

Performance Deficiencies

None

Maintenance Needs *Priority* *Comments*

Rehab/Repair Recommendations *Priority* *Cost* *Comments*

Municipal Structure Inspection Form

Structure Number: 004

Accessories - Electrical

Element Group	Accessories	**Length** 0.00	**Width** 0.00
Element Name	Electrical	**Height** 0.00	**Count** 3.00
Location	East Side	**Total Quantity**	3.00
Material	Steel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	3.00	0.00	0.00

☑ Moderate ☐ Severe

Comments

3 light poles attached to east deck fascia.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Accessories - Utilities

Element Group	Accessories	**Length** 0.00	**Width** 0.00
Element Name	Utilities	**Height** 0.00	**Count** 1.00
Location	West Side	**Total Quantity**	1.00
Material		☐ **Limited Inspection**	
Element Type	Utilities	**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	Each	0.00	1.00	0.00	0.00

☑ Moderate ☐ Severe

Comments

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
None			

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Municipal Structure Inspection Form

Structure Number: 004

Approaches - Wearing Surface

Element Group	Approaches	**Length** 6.00	**Width** 8.00
Element Name	Wearing Surface	**Height** 0.00	**Count** 2.00
Location	Both Ends	**Total Quantity**	96.00
Material	Gravel	☐ **Limited Inspection**	
Element Type		**Environment**	
Protection System		☐ Benign	

Condition Data	***Units***	***Excell.***	***Good***	***Fair***	***Poor***
	sq. m	0.00	93.00	3.00	0.00

☐ Moderate

☑ Severe

Comments

Potholes.

Performance Deficiencies	**Maintenance Needs**	***Priority***	***Comments***
Rough riding surface	Bridge Surface Repair	2 yr	Repair potholes.

Rehab/Repair Recommendations	***Priority***	***Cost***	***Comments***

Repair/Rehabilitation Required

Associated Work

	Comments			Estimated Cost
Approaches				$0
Detours				$0
Traffic Control				$0
Utilities				$0
Right-of-Way				$0
Environmental Study				$0
Other				$0
Contingencies			% **	$0
Engineering			% **	$0

** If based on a percentage calculated values rounded-up to the nearest thousand dollars.

Total Associated Work Cost	**$0**
Total Repair/Rehabilitation Cost	**$0**
Total Cost	**$0**
Town of Moosonee Share @ 100%	$0

Justification

Looking South at Bridge

East Elevation

West Elevation

Looking North at North Approach

Looking South at South Approach

Looking South at Deck Top

Looking West at South Expansion Joint

Looking West at North Expansion Joint

Transverse Crack in Deck Top

Longitudinal Crack in Deck Top

Impact Damage to Attenuator in Southeast Quadrant

Wide Crack in Curb

Delamination on Curb

Small spall on Curb

Typical Deck Drain

North Abutment

South Abutment

Typical Pier

Typical Soffit

Weathering of Exterior Soffit

Deformation of Bottom Flange of Pier Cap Beam

Deformation of H-Pile in Stream

Debris in Stream under Bridge