MUNICIPALITY OF KINCARDINE

BRIDGE OSIM REPORTS

2021

PEDESTRIAN STRUCTURES

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MUNICIPALITY OF KINCARDINE

BRIDGE OSIM REPORTS

2021

PEDESTRIAN STRUCTURES

October, 2021

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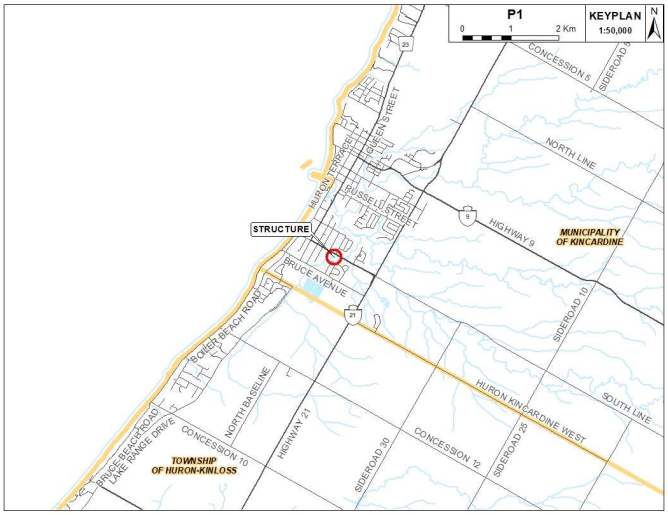
File No. 96038

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P1

Summary Report:

1-Facing South



Datum: NAD83 17N **Northing:** 4890116 **Easting:** 448999

Structure Name:	Stonehaven Pedestrian Bridge	**BMROSS File #:**	BR1083	**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	97	**CRV:**	$400,400
Road Name:	Yellow Trail			**Inspection Date:**	7/21/2021
Structure Location:	South of Kincardine Ave			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Half-through truss in good condition. Vegetation should be cut back.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Trusses/Arches	Cut back vegetation within 2.4m of bridge	1 to 5 yrs.	$3,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$3,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P1

Inventory Data:

Structure Name:	Stonehaven Pedestrian Bridge		
Main Hwy / Road #:		On ☐ Under ☐ Crossing Type:	Pedestrian
Road Name:	Yellow Trail	Northing:	4890116
Structure Location:	South of Kincardine Ave	Easting:	448999
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed: / No. of Lanes:	/
Current County:	Bruce	AADT: / % Trucks:	0-49 /
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Truss	Surface Type:	Wood
Structure Type:	Half-Through Truss	Detour Length Around Bridge:	(km)
Total Deck Length:	45.0 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.71 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	76.95 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.5 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	3	Bridge Condition Index:	97
Span Length(s):	10 (m) 25 (m) 10 (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	BR1083

Historical Data:

Year Built:	2014	Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P1

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years

Overall Comments: Half-through truss in good condition. Vegetation should be cut back.

Replacement Value:

Structure Type:	Bridge	Structure Area:	77 (sq.m)
Replacement Cost:	$ 400,400	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Trusses/Arches	Cut back vegetation within 2.4m of bridge	1 to 5 yrs.	$3,000
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	$3,000

Associated Work Required:

Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	$0
	Total Cost:	$3,000

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P1

Element Data:						
Element Group:	Abutments				**Length:**	0.61
Element Name:	Abutment Walls				**Width:**	2.4
Location:	N-S				**Height:**	1.28
Material:	Cast-in-place Concrete				**Count:**	2
Element Type:	Conventional Closed				**Total Quantity:**	6.1 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
	100% (6.1)				$5,490	$5,490
Comments:	Height: 1.28m (south), 1.80m (north)					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	1.6
Element Name:	Floor Beams				**Width:**	0.051
Location:					**Height:**	0.102
Material:	Steel				**Count:**	42
Element Type:	Box/Trapezoidal				**Total Quantity:**	17.1 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
	100% (17.1)				$7,182	$7,182
Comments:	Dimensions vary.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	1.71
Element Name:	Deck Top - Thin Slab				**Width:**	45.0
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	77 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (77)			$9,240	$6,930
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Piers				Length:	0.61
Element Name:	Shafts/Columns/Pile Bents				Width:	3.7
Location:					Height:	1.8
Material:	Cast-in-place Concrete				Count:	2
Element Type:	Concrete Rectangular Columns				Total Quantity:	31 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
	100% (31)				$27,900	$27,900
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	45.0
Element Name:	Bottom Chords				Width:	0.051
Location:					Height:	0.051
Material:	Steel				Count:	2
Element Type:	Box/Trapezoidal				Total Quantity:	13.8 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
	100% (13.8)				$4,140	$4,140
Comments:	Dimensions vary.					
Performance Deficiencies:						
Recommended Work:	Cut back vegetation within 2.4m of bridge.				Recommended Timing:	1-5 years
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	45.0
Element Name:	Top Chords				Width:	0.051
Location:					Height:	0.051
Material:	Steel				Count:	2
Element Type:	Box/Trapezoidal				Total Quantity:	13.8 m
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
	100% (13.8)				$4,140	$4,140
Comments:	HSS 51x51x4.8					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P1

Element Data:						
Element Group:	Trusses/Arches				**Length:**	1.3
Element Name:	Verticals/Diagonals				**Width:**	0.051
Location:					**Height:**	0.051
Material:	Steel				**Count:**	154
Element Type:	Box/Trapezoidal				**Total Quantity:**	30.6 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
	100% (30.6)				$9,180	$9,180
Comments:	Dimensions vary.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing South

2-West Elevation

3-Soffit

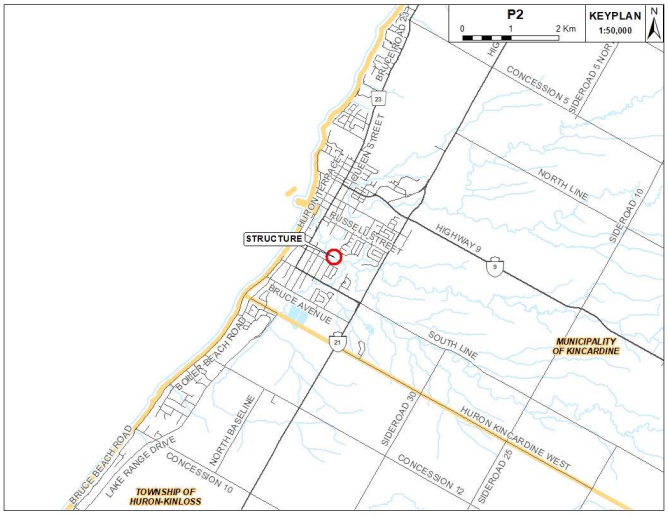
4-Steel Plates

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P2

Summary Report:

1-Facing South



Datum: NAD83 17N **Northing:** 4890676 **Easting:** 449317

Structure Name:	South Penetangore Bridge		**BMROSS File #:**	BR906	**MTO #:**
Main Hwy / Road #:			**Bridge Condition Index (BCI:)**	88	**CRV:** $650,000
Road Name:	Green Trail				**Inspection Date:** 7/21/2021
Structure Location:	Between St. Albert St and Scott St				**Next Inspection:** 8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years		**Current Load Limit:** N/A
Overall Comments:	Half-through truss in good condition. Plate over expansion locations recommended.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Decks	Cover plates for expansion locations	1 to 5 yrs.	$2,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$1,000
		Total	$3,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P2

Inventory Data:

Structure Name:	South Penetangore Bridge		
Main Hwy / Road #:		On ☐ Under ☐ Crossing Type:	Pedestrian
Road Name:	Green Trail	Northing:	4890676
Structure Location:	Between St. Albert St and Scott St	Easting:	449317
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed: / No. of Lanes:	
Current County:	Bruce	AADT: 0-49 / % Trucks:	
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Truss	Surface Type:	Wood
Structure Type:	Half-Through Truss	Detour Length Around Bridge:	(km)
Total Deck Length:	75.05 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.66 (m)	Skew Angle:	(Degrees)
Total Struct. Area:	124.583 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.5 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	4	Bridge Condition Index:	88

Span Length(s): 14.05 (m) 36.1 (m) 15.5 (m) 9.4 (m) (m)

MTO Number:

BMROSS File Number: BR906

Historical Data:

Year Built:	2012	Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P2

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years

Overall Comments: Half-through truss in good condition. Plate over expansion locations recommended.

Replacement Value:

Structure Type: Bridge

Structure Area: 125 (sq.m)

Replacement Cost: $ 650,000

Complexity Factor: 1

Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Decks	Cover plates for expansion locations	1 to 5 yrs.	$2,000
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$2,000**

Associated Work Required:

Mobilize / Demobilize		$1,000
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$1,000**
	Total Cost:	**$3,000**

Justification:

Element Data:						
Element Group:	Abutments				**Length:**	0.56
Element Name:	Abutment Walls				**Width:**	2.35
Location:					**Height:**	0.5
Material:	Cast-in-place Concrete				**Count:**	2
Element Type:	Conventional Closed				**Total Quantity:**	2.35 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
	100% (2.35)				$2,115	$2,115
Comments:	Height varies.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	1.65
Element Name:	Floor Beams				**Width:**	0.051
Location:					**Height:**	0.102
Material:	Steel				**Count:**	58
Element Type:	Box/Trapezoidal				**Total Quantity:**	24.4 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (24.4)			$10,248	$7,686
Comments:	Dimensions vary.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	75.05
Element Name:	Deck Top - Thin Slab				**Width:**	1.66
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	124.6 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (124.6)			$14,952	$11,214
Comments:						
Performance Deficiencies:						
Recommended Work:	Cover plates to cover gaps between each span.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Piers				Length:	0.62
Element Name:	Shafts/Columns/Pile Bents				Width:	2.85
Location:					Height:	3.0
Material:	Cast-in-place Concrete				Count:	3
Element Type:	Concrete Rectangular Columns				Total Quantity:	62.5 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
	100% (62.5)				$56,250	$56,250
Comments:	Height varies.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	75.05
Element Name:	Bottom Chords				Width:	0.76
Location:					Height:	0.76
Material:	Steel				Count:	2
Element Type:	Box/Trapezoidal				Total Quantity:	34.2 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (34.2)			$10,260	$7,695
Comments:	Dimensions vary.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	75.05
Element Name:	Top Chords				Width:	0.076
Location:					Height:	0.076
Material:	Steel				Count:	2
Element Type:	Box/Trapezoidal				Total Quantity:	34.2 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (34.2)			$10,260	$7,695
Comments:	Dimensions vary.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P2

Element Data:						
Element Group:	Trusses/Arches				**Length:**	1.3
Element Name:	Verticals/Diagonals				**Width:**	0.051
Location:					**Height:**	0.051
Material:	Steel				**Count:**	200
Element Type:	Box/Trapezoidal				**Total Quantity:**	39.8 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (39.8)			$11,940	$8,955
Comments:	Dimensions vary.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing South

2-West Elevation

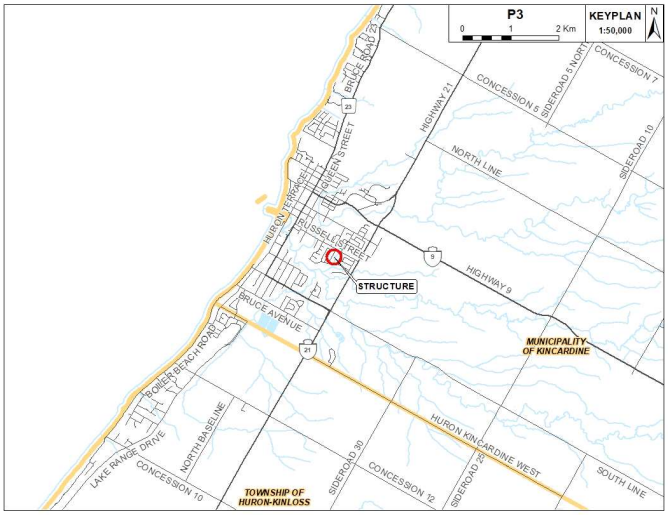
3-Soffit - North Span

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P3

Summary Report:

1-Facing East



Datum: NAD83 17N **Northing:** 4890840 **Easting:** 449936

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	75	**CRV:**	$88,400
Road Name:	Red Trail			**Inspection Date:**	7/21/2021
Structure Location:	Between Scott Street and Palmateer Drive (Helliwell Park)			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Steel beam bridge with wood deck in good condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P3

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Red Trail	Northing:	4890840
Structure Location:	Between Scott Street and Palmateer Drive (Helliwell Pa	Easting:	449936
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	12.25 (m)	Fill on Structure: 0	(m)
Overall Str. Width:	1.42 (m)	Skew Angle: 0	(Degrees)
Total Struct. Area:	17.395 (sq.m)	Direction of Structure:	East/West
Roadway Width:	1.1 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	75
Span Length(s):	11.8 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P3

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**

Overall Comments: Steel beam bridge with wood deck in good condition.

Replacement Value:

Structure Type:	Bridge	Structure Area:	17 (sq.m)
Replacement Cost:	$ 88,400	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P3

Element Data:						
Element Group:	Abutments				**Length:**	
Element Name:	Abutment Walls				**Width:**	1.84
Location:					**Height:**	0.56
Material:	Mass Concrete				**Count:**	2
Element Type:	Conventional Closed				**Total Quantity:**	2.1 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (2.1)			$1,890	$1,418
Comments:	Concrete blocks on both ends, east end almost completely buried.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Approaches				**Length:**	
Element Name:	Wearing surface				**Width:**	
Location:					**Height:**	
Material:					**Count:**	
Element Type:					**Total Quantity:**	
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% ()				$0
Comments:	Trail recently paved at both ends of bridge, two concrete retaining blocks installed at east end.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	12.25
Element Name:	Railing Systems				**Width:**	0.09
Location:					**Height:**	1.17
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	24.5 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (24.5)			$2,450	$1,838
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				Length:	12.25
Element Name:	Girders				Width:	0.14
Location:					Height:	0.4
Material:	Steel				Count:	2
Element Type:	I-type				Total Quantity:	29.9 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (29.9)			$12,558	$9,419
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	12.25
Element Name:	Deck Top - Thin Slab				Width:	1.42
Location:					Height:	
Material:	Wood				Count:	1
Element Type:	Wood Planks				Total Quantity:	17.4 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (17.4)			$2,088	$1,566
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

1-Facing East

2-South Elevation

3-Soffit

4-Beams and West Abutment

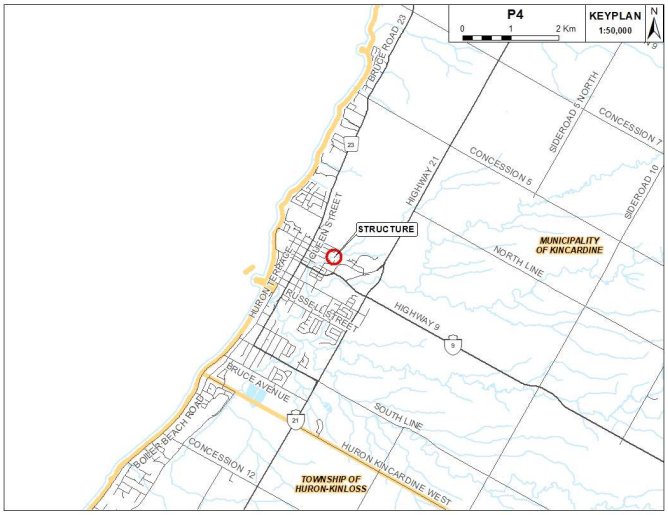
5-North Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P4

Summary Report:

1-Facing South



Datum: NAD83 17N **Northing:** 4892308 **Easting:** 450189

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	100	**CRV:**	$62,400
Road Name:	Blue Trail			**Inspection Date:**	7/22/2021
Structure Location:	Alps Park			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Twin CSP in excellent condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P4

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Blue Trail	Northing:	4892308
Structure Location:	Alps Park	Easting:	450189
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Culverts	Surface Type:	Gravel
Structure Type:	Round Culvert	Detour Length Around Bridge:	(km)
Total Deck Length:	2.6 (m)	Fill on Structure:	0.4 (m)
Overall Str. Width:	6.0 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	15.6 (sq.m)	Direction of Structure:	North/South
Roadway Width:	2.0 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	2	Bridge Condition Index:	100

Span Length(s): 1.2 (m) 1.2 (m) (m) (m) (m)

MTO Number: **BMROSS File Number:**

Historical Data:

Year Built:	2020	Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P4

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**
Overall Comments: Twin CSP in excellent condition.

Replacement Value:

Structure Type: Culvert
Structure Area: 16 (sq.m)
Replacement Cost: $ 62,400
Complexity Factor: 1
Price per sq. m.: $ 3,900.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P4

Element Data:						
Element Group:	Culverts				**Length:**	1.2
Element Name:	Barrels				**Width:**	6.0
Location:					**Height:**	1.2
Material:	Plastic				**Count:**	2
Element Type:	Pipe Round				**Total Quantity:**	45.2 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	Epoxy zinc/acrylic/acrylic				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
	100% (45.2)				$15,820	$15,820
Comments:	Polymer coated.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing South

2-South Barrel Facing East

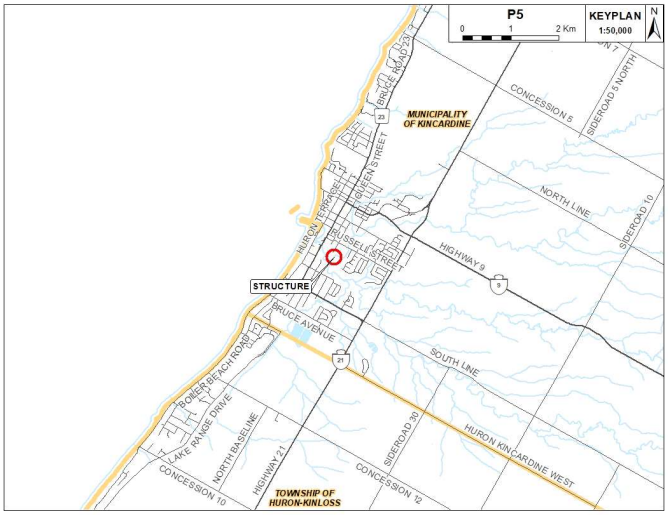
3-North Barrel Facing East

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P5

Summary Report:

1-Facing East



Datum: NAD83 17N **Northing:** 4891052 **Easting:** 449244

Structure Name:	North Penetangore Bridge	**BMROSS File #:**	BR804	**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	78	**CRV:**	$348,400
Road Name:	Red Trail			**Inspection Date:**	7/21/2021
Structure Location:	Geddes Park			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Half-through truss in good condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P5

Inventory Data:

Structure Name:	North Penetangore Bridge		
Main Hwy / Road #:		On ☐ Under ☐ Crossing Type:	Pedestrian
Road Name:	Red Trail	Northing:	4891052
Structure Location:	Geddes Park	Easting:	449244
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed: / No. of Lanes:	/
Current County:	Bruce	AADT: / % Trucks:	0-49 /
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Truss	Surface Type:	Wood
Structure Type:	Half-Through Truss	Detour Length Around Bridge:	(km)
Total Deck Length:	40.4 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.66 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	67.064 (sq.m)	Direction of Structure:	East/West
Roadway Width:	1.5 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	3	Bridge Condition Index:	78
Span Length(s):	18.2 (m) 15.5 (m) 6.7 (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	BR804

Historical Data:

Year Built:	2007	Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P5

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**
Overall Comments: Half-through truss in good condition.

Replacement Value:

Structure Type: Bridge
Structure Area: 67 (sq.m)
Replacement Cost: $ 348,400
Complexity Factor: 1
Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Element Data:						
Element Group:	Abutments				Length:	0.55
Element Name:	Abutment Walls				Width:	2.15
Location:					Height:	1.13
Material:	Cast-in-place Concrete				Count:	2
Element Type:	Conventional Closed				Total Quantity:	4.9 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
	100% (4.9)				$4,410	$4,410
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	40.4
Element Name:	Deck Top - Thin Slab				Width:	1.66
Location:					Height:	
Material:	Wood				Count:	1
Element Type:	Wood Planks				Total Quantity:	67.1 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (67.1)			$8,052	$6,039
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Piers				Length:	0.55
Element Name:	Shafts/Columns/Pile Bents				Width:	2.8
Location:					Height:	0.95
Material:	Cast-in-place Concrete				Count:	2
Element Type:	Concrete Rectangular Columns				Total Quantity:	12.7 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (12.7)			$11,430	$8,573
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				**Length:**	40.4
Element Name:	Bottom Chords				**Width:**	0.076
Location:					**Height:**	0.076
Material:	Steel				**Count:**	2
Element Type:	Box/Trapezoidal				**Total Quantity:**	18.4 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (18.4)			$5,520	$4,140
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Trusses/Arches				**Length:**	40.4
Element Name:	Top Chords				**Width:**	0.076
Location:					**Height:**	0.076
Material:	Steel				**Count:**	2
Element Type:	Box/Trapezoidal				**Total Quantity:**	18.4 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (18.4)			$5,520	$4,140
Comments:	Atmospheric corrosion resistant steel.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Trusses/Arches				**Length:**	1.5
Element Name:	Verticals/Diagonals				**Width:**	0.05
Location:					**Height:**	0.05
Material:	Steel				**Count:**	68
Element Type:	Box/Trapezoidal				**Total Quantity:**	15.3 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (15.3)			$4,590	$3,443
Comments:	Diagonals.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P5

Element Data:						
Element Group:	Trusses/Arches				**Length:**	1.04
Element Name:	Verticals/Diagonals				**Width:**	0.05
Location:					**Height:**	0.05
Material:	Steel				**Count:**	70
Element Type:	Box/Trapezoidal				**Total Quantity:**	10.9 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (10.9)			$3,270	$2,453
Comments:	Verticals.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing East

2-South Elevation

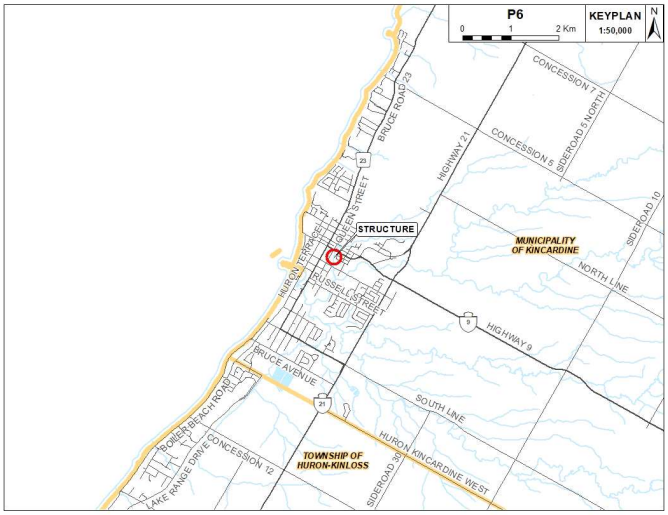
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P6

Summary Report:

1-Facing West



Datum: NAD83 17N **Northing:** 4891966 **Easting:** 449632

Structure Name:		**BMROSS File #:**	BR1258	**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	40	**CRV:**	$436,800
Road Name:	Blue Trail			**Inspection Date:**	7/22/2021
Structure Location:	Between Princess St. and William St.			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	Within 1 yr.	**Current Load Limit:**	N/A

Overall Comments: Multi-span steel beam bridge in fair condition. New decking in 2017 and protection of pier footings. Continue to monitor pier footings on each side of low flow channel and remove debris in channel.

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Piers	Remove debris in channel	Within 1 yr.	$3,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$3,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P6

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐ Crossing Type:	Pedestrian
Road Name:	Blue Trail	Northing:	4891966
Structure Location:	Between Princess St. and William St.	Easting:	449632
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed: / No. of Lanes:	
Current County:	Bruce	AADT: 0-49 / % Trucks:	
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	52.2 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.6 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	83.52 (sq.m)	Direction of Structure:	East/West
Roadway Width:	1.3 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	8	Bridge Condition Index:	40
Span Length(s):	52.2 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	BR1258

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Rehabilitation / Investigation History:

Year	Work Type	Description	Cost
2017		New deck boards, protection of pier 3 footing (numbered from east end)	52000

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P6

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** Within 1 yr.

Overall Comments: Multi-span steel beam bridge in fair condition. New decking in 2017 and protection of pier footings. Continue to monitor pier footings on each side of low flow channel and remove debris in channel.

Replacement Value:

Structure Type:	Bridge	Structure Area:	84 (sq.m)
Replacement Cost:	$ 436,800	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
Piers	Remove debris in channel	Within 1 yr.	$3,000
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$3,000**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$3,000**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P6

Element Data:						
Element Group:	Abutments				**Length:**	
Element Name:	Abutment Walls				**Width:**	2.0
Location:	E/W				**Height:**	0.3
Material:	Cast-in-place Concrete				**Count:**	2
Element Type:	Conventional Closed				**Total Quantity:**	1.2 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (1.2)		$1,080	$432
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Approaches				**Length:**	
Element Name:	Sidewalk				**Width:**	
Location:					**Height:**	
Material:					**Count:**	2
Element Type:					**Total Quantity:**	
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% ()			$0
Comments:	Concrete sidewalks at each end of the bridge.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	52.2
Element Name:	Railing Systems				**Width:**	0.05
Location:					**Height:**	1.08
Material:	Steel				**Count:**	2
Element Type:	Steel Post and Steel Panel				**Total Quantity:**	104.4 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (104.4)		$20,880	$8,352
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				Length:	52.2
Element Name:	Girders				Width:	0.1
Location:					Height:	0.2
Material:	Steel				Count:	4
Element Type:	I-type				Total Quantity:	146.2 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			90% (131.58)	10% (14.62)	$61,404	$22,105
Comments:	3 to 5 beams per span. Outside beams C-channels, middle beams are I-beams. Surface rust.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	52.2
Element Name:	Deck Top - Thin Slab				Width:	1.5
Location:					Height:	0.038
Material:	Wood				Count:	1
Element Type:	Wood Planks				Total Quantity:	78.3 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (78.3)			$9,396	$7,047
Comments:	Replaced in 2017. Spans (m): 4.8 (east), 7.0, 6.6, 8.8, 6.2, 6.9, 6.8, 5.1 (west).					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Piers				Length:	0.1
Element Name:	Shafts/Columns/Pile Bents				Width:	1.6
Location:					Height:	3.7
Material:	Steel				Count:	7
Element Type:	Steel Frame				Total Quantity:	88.1 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (88.1)		$79,290	$31,716
Comments:	Dimensions vary. Constructed from steel w-sections and angle iron.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P6

Element Data:						
Element Group:	Piers				**Length:**	1.5
Element Name:	Shafts/Columns/Pile Bents				**Width:**	3.5
Location:					**Height:**	3
Material:	Cast-in-place Concrete				**Count:**	7
Element Type:	Concrete Rectangular Columns				**Total Quantity:**	210 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (210)		$189,000	$75,600
Comments:	Dimensions vary. Patch repaired piers 2 and 3 (numbered from east end). Underpinned pier 3 in 2017. Debris in channel.					
Performance Deficiencies:						
Recommended Work:	Remove debris from channel.				**Recommended Timing:**	< 1 year
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing West

2-South Elevation

3-Soffit

4-Middle Pier

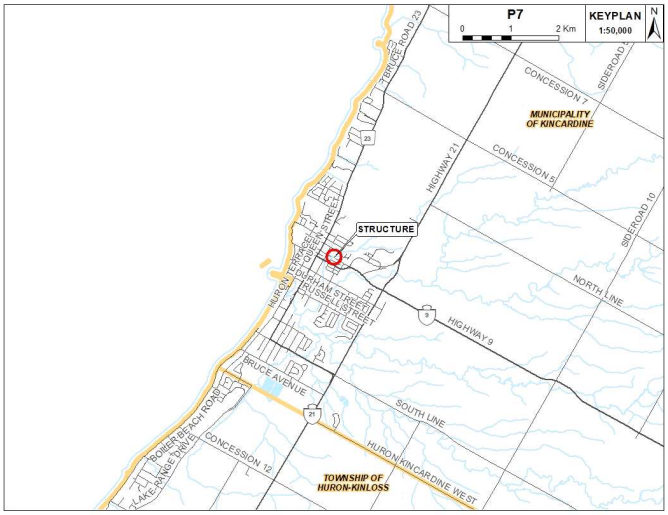
5-North Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P7

Summary Report:

1-Facing East



Datum: NAD83 17N **Northing:** 4892178 **Easting:** 449848

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	75	**CRV:**	$98,800
Road Name:	Blue Trail			**Inspection Date:**	7/22/2021
Structure Location:	Mechanics Avenue			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Steel beam bridge with steel grating in good condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Abutments	Erosion protection	1 to 5 yrs.	$7,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$7,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P7

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Blue Trail	Northing:	4892178
Structure Location:	Mechanics Avenue	Easting:	449848
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Metal
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	14.7 (m)	Fill on Structure: 0	(m)
Overall Str. Width:	1.32 (m)	Skew Angle: 0	(Degrees)
Total Struct. Area:	19.404 (sq.m)	Direction of Structure:	East/West
Roadway Width:	1.2 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	75
Span Length(s):	11.6 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P7

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years

Overall Comments: Steel beam bridge with steel grating in good condition.

Replacement Value:

Structure Type:	Bridge	Structure Area:	19 (sq.m)
Replacement Cost:	$ 98,800	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
Abutments	Erosion protection	1 to 5 yrs.	$7,000
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$7,000**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$7,000**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P7

Element Data:						
Element Group:	Abutments				**Length:**	
Element Name:	Abutment Walls				**Width:**	0.6
Location:					**Height:**	0.25
Material:	Cast-in-place Concrete				**Count:**	4
Element Type:					**Total Quantity:**	0.6 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (0.6)			$540	$405
Comments:	Two concrete piers at either end, 600mm dia.					
Performance Deficiencies:						
Recommended Work:	Erosion protection.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	14.7
Element Name:	Railing Systems				**Width:**	
Location:					**Height:**	1.32
Material:	Steel				**Count:**	2
Element Type:	Steel Post and Steel Panel				**Total Quantity:**	29.4 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (29.4)			$5,880	$4,410
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	0.105
Element Name:	Diaphragms				**Width:**	0.065
Location:					**Height:**	0.25
Material:	Steel				**Count:**	7
Element Type:	I-type				**Total Quantity:**	7 Each
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (7)			$0	$0
Comments:	C-channels.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				Length:	14.7
Element Name:	Girders				Width:	0.14
Location:					Height:	0.4
Material:	Steel				Count:	2
Element Type:	I-type				Total Quantity:	35.9 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (35.9)			$15,078	$11,309
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	14.7
Element Name:	Deck Top - Thin Slab				Width:	1.32
Location:					Height:	
Material:	Steel				Count:	1
Element Type:					Total Quantity:	19.4 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (19.4)			$2,328	$1,746
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

1-Facing East

2-North Elevation

3-Soffit

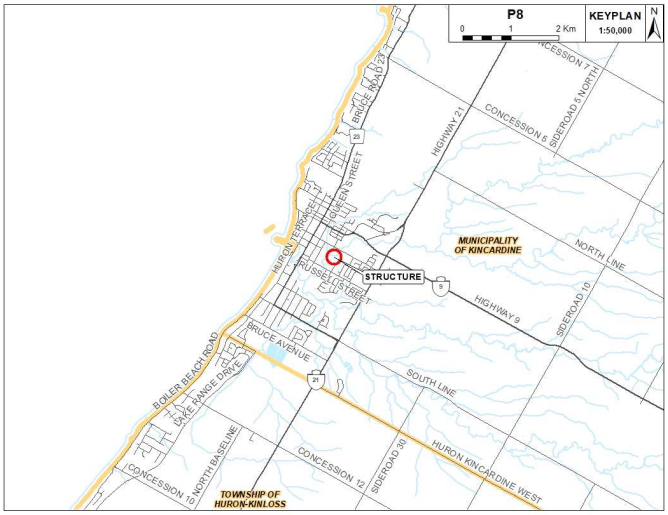
4-South Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P8

Summary Report:

1-Facing West



Datum: NAD83 17N **Northing:** 4891464 **Easting:** 449765

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	62	**CRV:**	$57,200
Road Name:	Blue Trail			**Inspection Date:**	7/21/2021
Structure Location:	Between Russell St. and Durham St.			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Wood bridge in fair condition. Bank protection recommended.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Abutments	Erosion protection	1 to 5 yrs.	$10,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$10,000
		Total	$20,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P8

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Blue Trail	Northing:	4891464
Structure Location:	Between Russell St. and Durham St.	Easting:	449765
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	7.3 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.45 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	10.585 (sq.m)	Direction of Structure:	East/West
Roadway Width:	1.2 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	62
Span Length(s):	7.3 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P8

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years
Overall Comments: Wood bridge in fair condition. Bank protection recommended.

Replacement Value:

Structure Type: Bridge
Structure Area: 11 (sq.m)
Replacement Cost: $ 57,200
Complexity Factor: 1
Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Abutments	Erosion protection	1 to 5 yrs.	$10,000
			$0
			$0
			$0
			$0
			$0
			$0

Repair/Rehabilitation Sub-Total:	**$10,000**

Associated Work Required:

Mobilize / Demobilize		$5,000
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$3,000
Other		$0
Contingencies		$2,000

Associated Work Sub-Total:	**$10,000**
Total Cost:	**$20,000**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P8

Element Data:						
Element Group:	Abutments				**Length:**	0.14
Element Name:	Abutment Walls				**Width:**	1.4
Location:					**Height:**	0.14
Material:	Wood				**Count:**	2
Element Type:					**Total Quantity:**	0.4 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (0.4)		$360	$144
Comments:	140x140 lumber. Banks are steep and eroded and should be protected with rip rap to maintain stability.					
Performance Deficiencies:						
Recommended Work:	Erosion protection.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	7.3
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	0.95
Material:	Wood				**Count:**	2
Element Type:	Wood Rail <83mm thick on Wood Post				**Total Quantity:**	14.6 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (14.6)		$1,460	$584
Comments:	Railings don't meet code for opening size, height or resistance.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	7.3
Element Name:	Girders				**Width:**	0.08
Location:					**Height:**	0.16
Material:	Aluminium				**Count:**	2
Element Type:	I-type				**Total Quantity:**	8.2 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (8.2)			$1,640	$1,230
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P8

Element Data:						
Element Group:	Decks				**Length:**	7.3
Element Name:	Deck Top - Thin Slab				**Width:**	1.45
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	10.6 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (10.6)			$1,272	$954
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing West

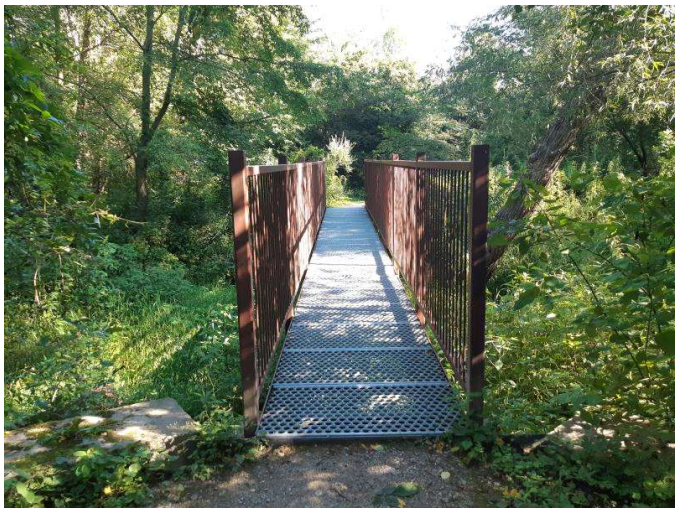
2-North Elevation

3-Soffit

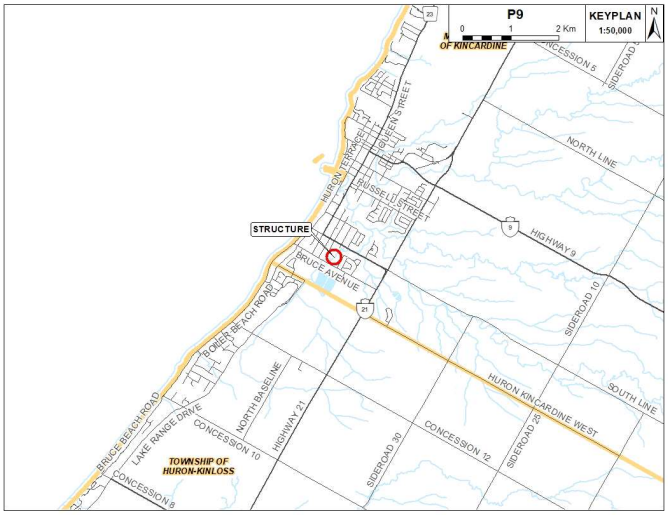
Ontario Structure Inspection Manual - Inspection Report:

Site Number: P9

Summary Report:



1-Facing North



Datum: NAD83 17N **Northing:** 4889988 **Easting:** 448749

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	75	**CRV:**	$83,200
Road Name:	Yellow Trail			**Inspection Date:**	7/21/2021
Structure Location:	Between Bruce Ave. and Kincardine Ave.			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Steel beam bridge with steel grating deck in good condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P9

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Yellow Trail	Northing:	4889988
Structure Location:	Between Bruce Ave. and Kincardine Ave.	Easting:	448749
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Metal
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	12.7 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.23 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	15.621 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.1 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	75
Span Length(s):	10.3 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P9

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**
Overall Comments: Steel beam bridge with steel grating deck in good condition.

Replacement Value:

Structure Type: Bridge
Structure Area: 16 (sq.m)
Replacement Cost: $ 83,200
Complexity Factor: 1
Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P9

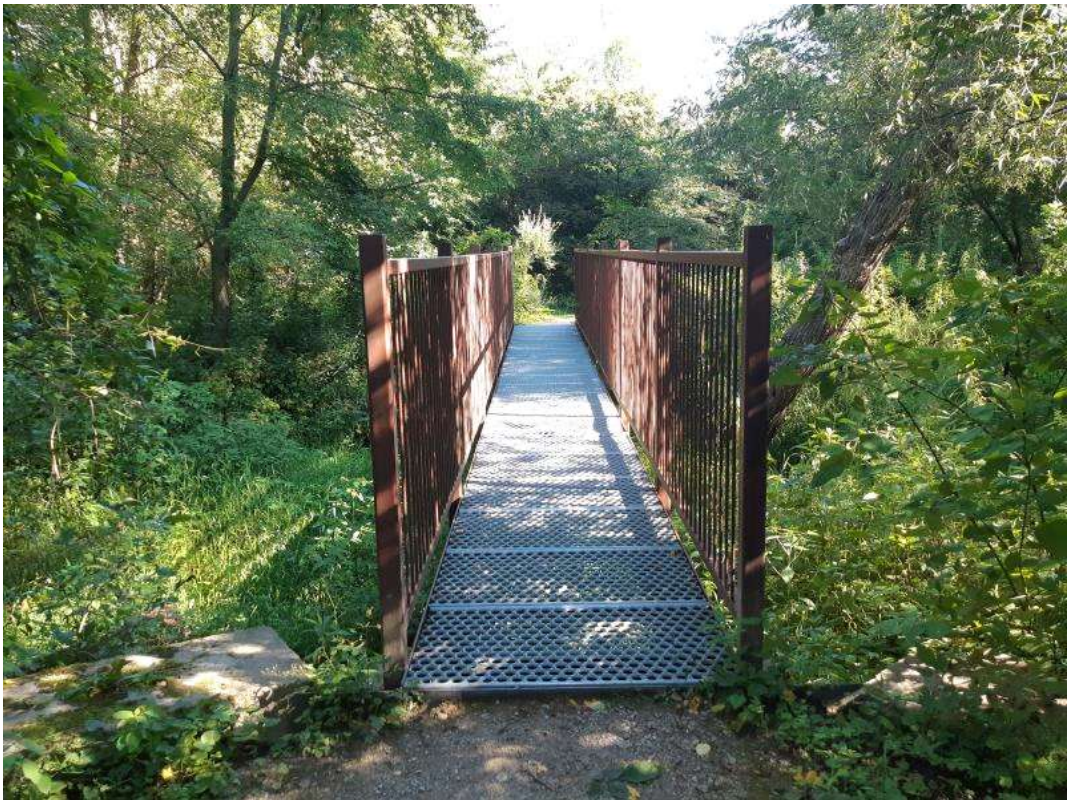
Element Data:						
Element Group:	Abutments				**Length:**	
Element Name:	Abutment Walls				**Width:**	1.83
Location:					**Height:**	0.82
Material:	Cast-in-place Concrete				**Count:**	2
Element Type:	Conventional Closed				**Total Quantity:**	3 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (3)			$2,700	$2,025
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	12.7
Element Name:	Railing Systems				**Width:**	
Location:					**Height:**	1.37
Material:	Steel				**Count:**	2
Element Type:	Steel Post and Steel Panel				**Total Quantity:**	25.4 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (25.4)			$5,080	$3,810
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	1.0
Element Name:	Diaphragms				**Width:**	
Location:					**Height:**	0.25
Material:	Steel				**Count:**	5
Element Type:	I-type				**Total Quantity:**	5 Each
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (5)			$0	$0
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				Length:	12.7
Element Name:	Girders				Width:	0.14
Location:					Height:	0.4
Material:	Steel				Count:	2
Element Type:	I-type				Total Quantity:	31 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (31)			$13,020	$9,765
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	1.23
Element Name:	Deck Top - Thin Slab				Width:	12.7
Location:					Height:	
Material:	Steel				Count:	1
Element Type:					Total Quantity:	15.6 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (15.6)			$1,872	$1,404
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	



1-Facing North

2-West Elevation

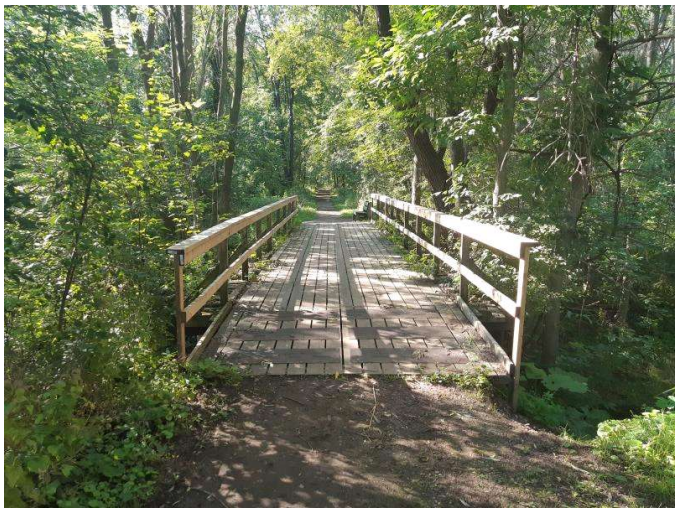
3-Soffit

4-East Elevation

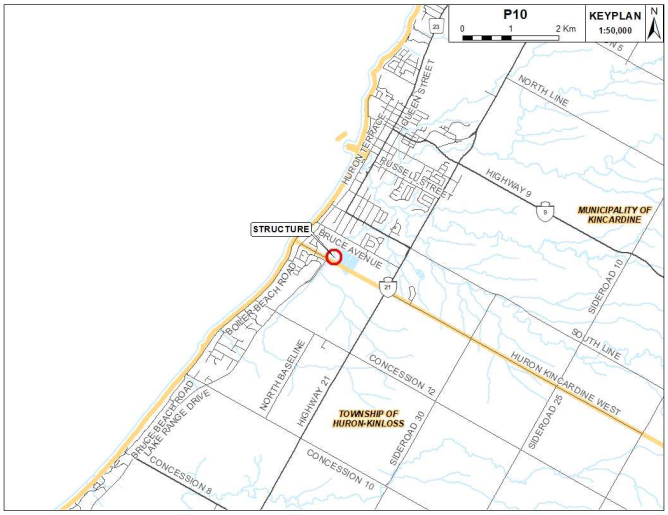
Ontario Structure Inspection Manual - Inspection Report:

Site Number: P10

Summary Report:



1-Facing East



Datum: NAD83 17N **Northing:** 4889533 **Easting:** 448270

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	40	**CRV:**	$223,600
Road Name:	Yellow Trail			**Inspection Date:**	7/21/2021
Structure Location:	South of Bruce Ave.			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Steel beam bridge with wood deck. Replace deteriorating deck boards.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Decks	Replace deteriorated deck boards	1 to 5 yrs.	$3,000
Barriers	Improve railings	1 to 5 yrs.	$2,000
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$5,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P10

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Yellow Trail	Northing:	4889533
Structure Location:	South of Bruce Ave.	Easting:	448270
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	14.96 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	2.88 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	43.0848 (sq.m)	Direction of Structure:	East/West
Roadway Width:	2.6 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	40
Span Length(s):	11.36 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P10

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years
Overall Comments: Steel beam bridge with wood deck. Replace deteriorating deck boards.

Replacement Value:

Structure Type:	Bridge	Structure Area:	43 (sq.m)
Replacement Cost:	$ 223,600	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P10

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Decks	Replace deteriorated deck boards	1 to 5 yrs.	$3,000
Barriers	Improve railings	1 to 5 yrs.	$2,000
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$5,000**

Associated Work Required:

Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$5,000**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P10

Element Data:						
Element Group:	Abutments				**Length:**	
Element Name:	Abutment Walls				**Width:**	3.25
Location:					**Height:**	1.13
Material:	Steel				**Count:**	2
Element Type:					**Total Quantity:**	7.3 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (7.3)		$6,570	$2,628
Comments:	Double steel I-beam sections bolted to steel piles. Height varies.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	1.96
Element Name:	Railing Systems				**Width:**	
Location:					**Height:**	0.96
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	3.9 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			70% (2.73)	30% (1.17)	$390	$109
Comments:	Cross member and handrails replaced recently. Some posts loose and rotting.					
Performance Deficiencies:						
Recommended Work:	Repair and improve railings.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	2.2
Element Name:	Diaphragms				**Width:**	
Location:	End span				**Height:**	0.61
Material:	Steel				**Count:**	2
Element Type:	Cross Type				**Total Quantity:**	2 Each
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (2)		$0	$0
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				Length:	0.74
Element Name:	Diaphragms				Width:	
Location:	Mid span				Height:	0.46
Material:	Steel				Count:	12
Element Type:	Cross Type				Total Quantity:	12 Each
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (12)		$0	$0
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Beams/MLE's				Length:	11.66
Element Name:	Girders				Width:	0.26
Location:					Height:	0.85
Material:	Steel				Count:	4
Element Type:	I-type				Total Quantity:	115.7 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (115.7)		$48,594	$19,438
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	2.88
Element Name:	Deck Top - Thin Slab				Width:	14.96
Location:					Height:	
Material:	Wood				Count:	1
Element Type:	Wood Planks				Total Quantity:	43.1 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			90% (38.79)	10% (4.31)	$5,172	$1,862
Comments:	2x6 deck top resting on 10x10 timbers, resting on steel beams. Some rotting 2x6 boards on deck top.					
Performance Deficiencies:						
Recommended Work:	Replace deteriorating deck boards.				Recommended Timing:	1-5 years
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

1-Facing East

2-North Elevation

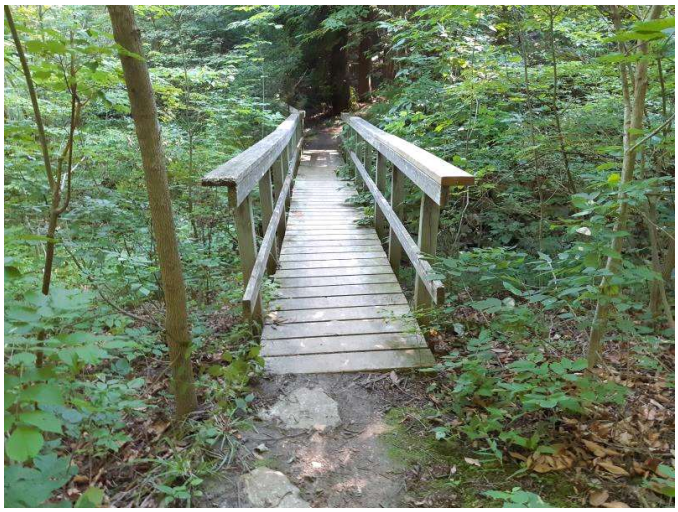
3-Soffit

4-South Elevation

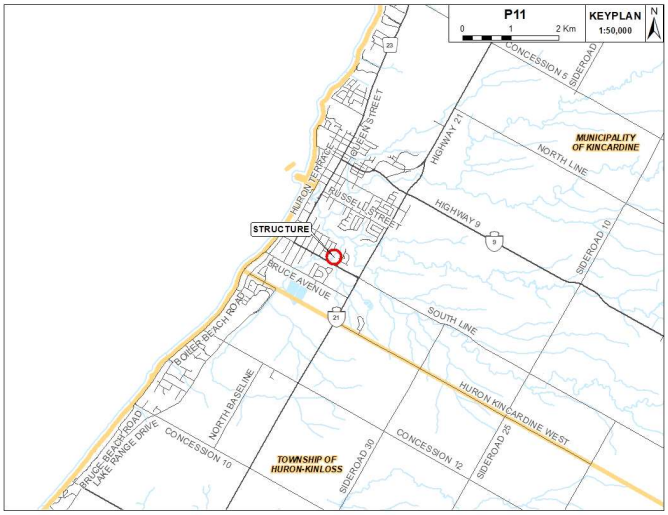
Ontario Structure Inspection Manual - Inspection Report:

Site Number: P11

Summary Report:



1-Facing North



Datum: NAD83 17N **Northing:** 4890158 **Easting:** 449340

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	40	**CRV:**	$62,400
Road Name:	Green Trail			**Inspection Date:**	7/21/2021
Structure Location:	North of Kincardine Ave.			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Wood bridge in fair condition. Railing reinforcement recommended.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Barriers	Reinforce railings and adjust pier supports	1 to 5 yrs.	$5,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$5,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P11

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Green Trail	Northing:	4890158
Structure Location:	North of Kincardine Ave.	Easting:	449340
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	Box Beams of Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	11 (m)	Fill on Structure: 0	(m)
Overall Str. Width:	1.12 (m)	Skew Angle: 0	(Degrees)
Total Struct. Area:	12.32 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	40
Span Length(s):	10 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P11

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years

Overall Comments: Wood bridge in fair condition. Railing reinforcement recommended.

Replacement Value:

Structure Type:	Bridge	Structure Area:	12 (sq.m)
Replacement Cost:	$ 62,400	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
Barriers	Reinforce railings and adjust pier supports	1 to 5 yrs.	$5,000
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$5,000**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$5,000**

Justification:

Element Data:						
Element Group:	Barriers				**Length:**	11.03
Element Name:	Railing Systems				**Width:**	
Location:					**Height:**	1.0
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	22.1 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (22.1)		$2,210	$884
Comments:	Posts are piers that extend above deck. Railings don't meet code for height, opening size.					
Performance Deficiencies:						
Recommended Work:	Reinforce railings.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	11.3
Element Name:	Girders				**Width:**	0.038
Location:					**Height:**	0.184
Material:	Wood				**Count:**	3
Element Type:					**Total Quantity:**	33.9 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (33.9)		$5,085	$2,034
Comments:	2x8 dimension lumber beams.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	1.12
Element Name:	Deck Top - Thin Slab				**Width:**	11.03
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	12.4 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (12.4)		$1,488	$595
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P11

Element Data:						
Element Group:	Piers				**Length:**	2.2
Element Name:	Shafts/Columns/Pile Bents				**Width:**	0.09
Location:					**Height:**	0.09
Material:	Wood				**Count:**	18
Element Type:					**Total Quantity:**	18 Each
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (18)		$16,200	$6,480
Comments:	4x4 wood posts resting on concrete base posts. Extend past deck to support railing.					
Performance Deficiencies:						
Recommended Work:	Monitor support conditions.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing North

2-West Elevation

3-Soffit

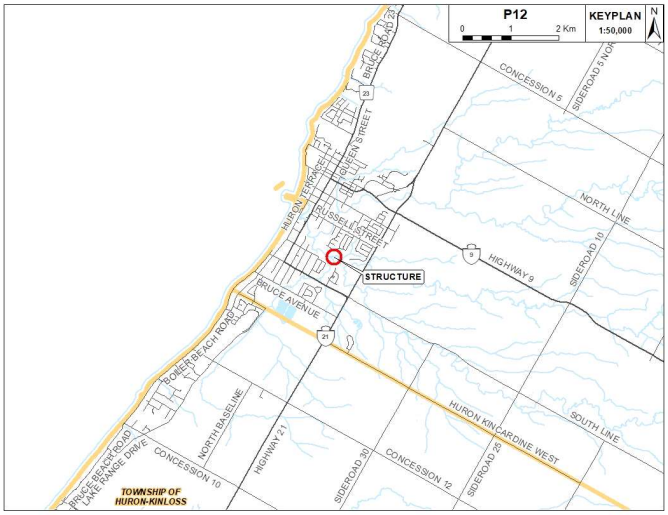
4-Pier

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P12

Summary Report:

1-Facing South



Datum: NAD83 17N **Northing:** 4890561 **Easting:** 449562

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	4	**CRV:**	$52,000
Road Name:	Green Trail			**Inspection Date:**	7/21/2021
Structure Location:				**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Log beam bridge supporting wood decking. Bridge is in poor condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
	Reinforce structure, erosion protection	1 to 5 yrs.	$20,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$20,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P12

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Green Trail	Northing:	4890561
Structure Location:		Easting:	449562
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	Box Beams of Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	8.15 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.22 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	9.943 (sq.m)	Direction of Structure:	North/South
Roadway Width:	0.9 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	4
Span Length(s):	7 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P12

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years

Overall Comments: Log beam bridge supporting wood decking. Bridge is in poor condition.

Replacement Value:

Structure Type:	Bridge	Structure Area:	10 (sq.m)
Replacement Cost:	$ 52,000	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
	Reinforce structure, erosion protection	1 to 5 yrs.	$20,000
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$20,000**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$20,000**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P12

Element Data:						
Element Group:	Abutments				**Length:**	0.35
Element Name:	Abutment Walls				**Width:**	1.5
Location:					**Height:**	0.35
Material:	Wood				**Count:**	2
Element Type:					**Total Quantity:**	1.1 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
				100% (1.1)	$990	$0
Comments:	Wood log abutments in deteriorated condition. Erosion occuring behind abutments.					
Performance Deficiencies:						
Recommended Work:	Reinforce structure, erosion protection.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Approaches				**Length:**	1.82
Element Name:	Other				**Width:**	0.76
Location:					**Height:**	0.038
Material:	Wood				**Count:**	2
Element Type:					**Total Quantity:**	2.8 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
				100% (2.8)		$0
Comments:	Dimension lumber approaches on concrete supports.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	8.15
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	0.94
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	16.3 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
				100% (16.3)	$1,630	$0
Comments:	Railings don't meet code for opening size, height or resistance.					
Performance Deficiencies:						
Recommended Work:	Reinforce structure.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	8.15
Element Name:	Girders				**Width:**	
Location:					**Height:**	
Material:	Wood				**Count:**	2
Element Type:					**Total Quantity:**	16.3 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
				100% (16.3)	$2,445	$0
Comments:	200mm diameter log beams with a noticeable sag. Noticeable deflection in structure when walking.					
Performance Deficiencies:						
Recommended Work:	Reinforce structure.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	8.15
Element Name:	Deck Top - Thin Slab				**Width:**	1.22
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	9.9 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			50% (4.95)	50% (4.95)	$1,188	$238
Comments:	Deck is uneven.					
Performance Deficiencies:						
Recommended Work:	Reinforce structure.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing South

2-West Elevation

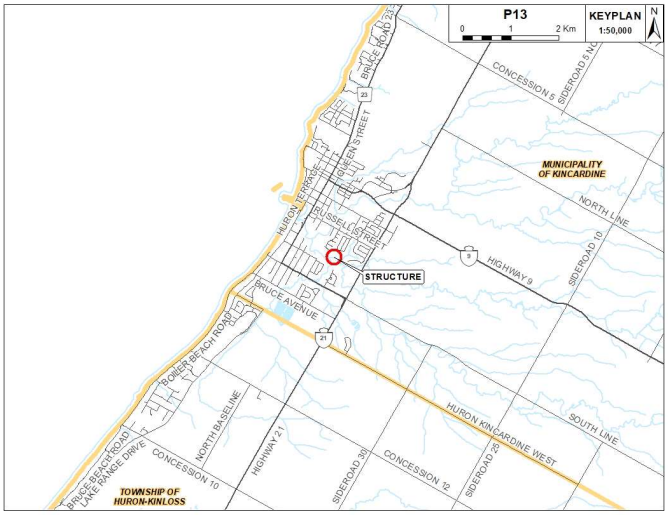
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P13

Summary Report:

1-Facing South



Datum: NAD83 17N **Northing:** 4890591 **Easting:** 449608

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	75	**CRV:**	$176,800
Road Name:	Green Trail			**Inspection Date:**	7/21/2021
Structure Location:	Transition from Green to Red Trail			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Aluminum seasonal bridge - installed in the spring and removed in the fall. Bridge is in good condition. Support condition should be monitored.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P13

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Green Trail	Northing:	4890591
Structure Location:	Transition from Green to Red Trail	Easting:	449608
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Composite
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	24.4 (m)	Fill on Structure: 0	(m)
Overall Str. Width:	1.38 (m)	Skew Angle: 0	(Degrees)
Total Struct. Area:	33.672 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.3 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	75
Span Length(s):	24.4 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P13

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**

Overall Comments: Aluminum seasonal bridge - installed in the spring and removed in the fall. Bridge is in good condition. Support condition should be monitored.

Replacement Value:

Structure Type:	Bridge	Structure Area:	34	(sq.m)
Replacement Cost:	$ 176,800	Complexity Factor:	1	
		Price per sq. m.:	$ 5,200.00	

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P13

Element Data:						
Element Group:	Barriers				**Length:**	24.4
Element Name:	Railing Systems				**Width:**	0.035
Location:					**Height:**	0.96
Material:	Aluminium				**Count:**	2
Element Type:	Aluminum Post and Aluminum Panels				**Total Quantity:**	48.8 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (48.8)			$9,760	$7,320
Comments:	Railings don't meet code for opening size or weight.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	24.4
Element Name:	Girders				**Width:**	
Location:					**Height:**	0.14
Material:	Aluminium				**Count:**	2
Element Type:	I-type				**Total Quantity:**	13.7 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (13.7)			$2,740	$2,055
Comments:	Beams rest on 12 posts.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	24.4
Element Name:	Deck Top - Thin Slab				**Width:**	1.38
Location:					**Height:**	
Material:	Aluminium				**Count:**	1
Element Type:					**Total Quantity:**	33.7 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (33.7)			$4,044	$3,033
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing South

2-East Elevation

3-Soffit

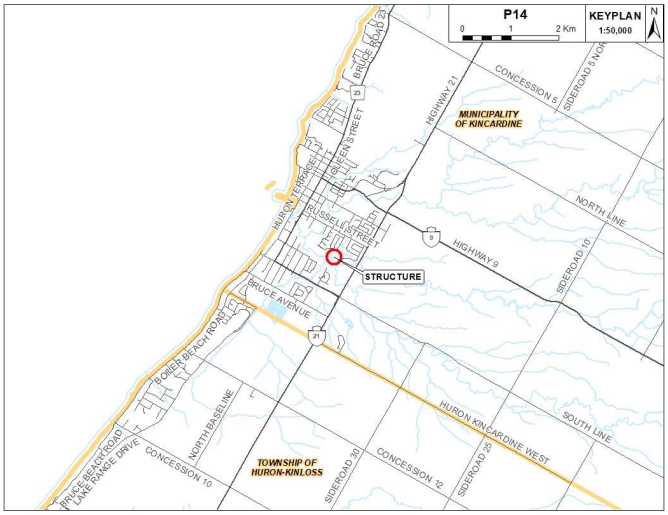
4-West Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P14

Summary Report:

1-Facing West



Datum: NAD83 17N **Northing:** 4890553 **Easting:** 449749

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	62	**CRV:**	$78,000
Road Name:	Red Trail			**Inspection Date:**	7/21/2021
Structure Location:				**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Aluminum girders supporting wood decking. Bridge is in fair to good condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P14

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Red Trail	Northing:	4890553
Structure Location:		Easting:	449749
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	10.4 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.43 (m)	Skew Angle:	(Degrees)
Total Struct. Area:	14.872 (sq.m)	Direction of Structure:	East/West
Roadway Width:	1.2 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	62
Span Length(s):	7.4 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P14

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**
Overall Comments: Aluminum girders supporting wood decking. Bridge is in fair to good condition.

Replacement Value:

Structure Type: Bridge
Replacement Cost: $ 78,000
Structure Area: 15 (sq.m)
Complexity Factor: 1
Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P14

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Element Data:						
Element Group:	Barriers				Length:	10.4
Element Name:	Railing Systems				Width:	0.038
Location:					Height:	0.95
Material:	Wood				Count:	2
Element Type:	Wood Rail >83mm thick on Wood Post				Total Quantity:	20.8 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (20.8)		$2,080	$832
Comments:	Railings don't meet code for height, opening size, or resistance.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Beams/MLE's				Length:	7.6
Element Name:	Girders				Width:	0.08
Location:					Height:	0.16
Material:	Aluminium				Count:	2
Element Type:	I-type				Total Quantity:	8.5 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (8.5)			$1,700	$1,275
Comments:	Girders appear to be supported on the stream banks.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	10.4
Element Name:	Deck Top - Thin Slab				Width:	1.43
Location:					Height:	
Material:	Wood				Count:	1
Element Type:	Wood Planks				Total Quantity:	14.9 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (14.9)			$1,788	$1,341
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

1-Facing West

2-North Elevation

3-Soffit

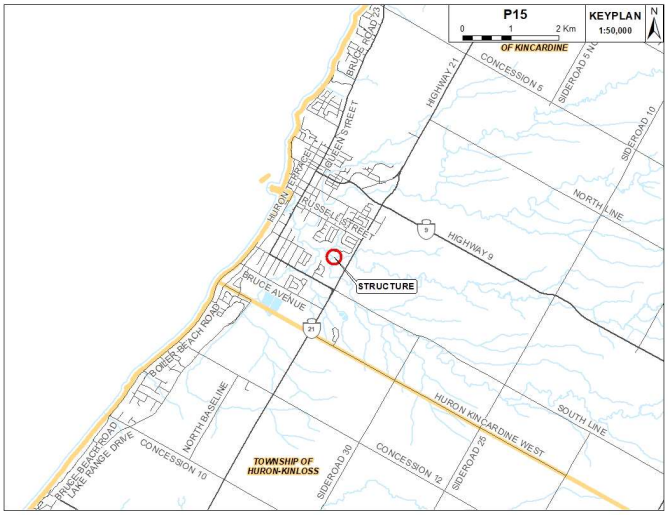
4-South Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P15

Summary Report:

1-Facing North



Datum: NAD83 17N **Northing:** 4890398 **Easting:** 449860

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	75	**CRV:**	$67,600
Road Name:	Red Trail			**Inspection Date:**	7/21/2021
Structure Location:				**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A

Overall Comments: Aluminum seasonal bridge - installed in the spring and removed in the fall. Bridge is in good condition. Support condition should be monitored.

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P15

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Red Trail	Northing:	4890398
Structure Location:		Easting:	449860
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Composite
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	9.18 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.39 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	12.7602 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.3 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	75
Span Length(s):	9 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P15

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**

Overall Comments: Aluminum seasonal bridge - installed in the spring and removed in the fall. Bridge is in good condition. Support condition should be monitored.

Replacement Value:

Structure Type:	Bridge	Structure Area:	13 (sq.m)
Replacement Cost:	$ 67,600	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Element Data:						
Element Group:	Approaches				Length:	4.75
Element Name:	Other				Width:	1.21
Location:	North End				Height:	
Material:	Wood				Count:	1
Element Type:					Total Quantity:	5.7 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (5.7)				$0
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Barriers				Length:	9.18
Element Name:	Railing Systems				Width:	0.035
Location:					Height:	0.97
Material:	Aluminium				Count:	2
Element Type:	Aluminum Post and Aluminum Panels				Total Quantity:	18.4 m
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (18.4)			$3,680	$2,760
Comments:	Railings don't meet code for height or opening size.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Beams/MLE's				Length:	9.18
Element Name:	Girders				Width:	0.05
Location:					Height:	0.14
Material:	Aluminium				Count:	2
Element Type:	I-type				Total Quantity:	5.6 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (5.6)			$1,120	$840
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P15

Element Data:						
Element Group:	Decks				**Length:**	9.18
Element Name:	Deck Top - Thin Slab				**Width:**	1.39
Location:					**Height:**	
Material:	Aluminium				**Count:**	1
Element Type:					**Total Quantity:**	12.8 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (12.8)			$1,536	$1,152
Comments:						
Performance Deficiencies:						
Recommended Work:						
					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing North

2-West Elevation

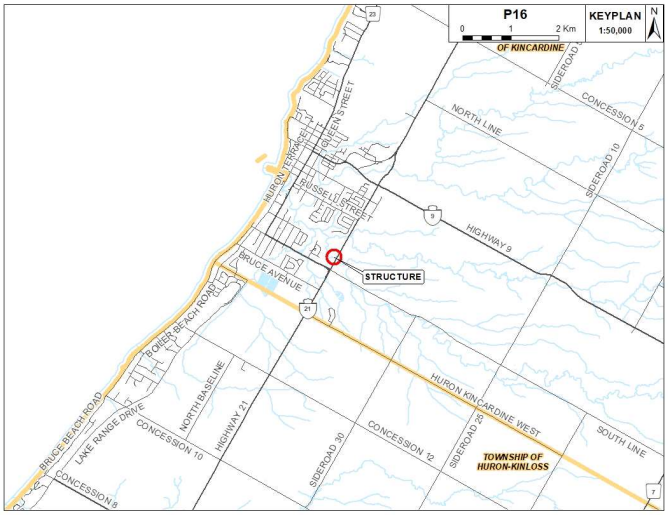
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P16

Summary Report:

1-Facing North



Datum: NAD83 17N **Northing:** 4889985 **Easting:** 449939

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	75	**CRV:**	$109,200
Road Name:	Red Trail			**Inspection Date:**	7/21/2021
Structure Location:	South End of Red Trail			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Aluminum seasonal bridge - installed in the spring and removed in the fall. Bridge is in good condition. Support condition should be monitored.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P16

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Red Trail	Northing:	4889985
Structure Location:	South End of Red Trail	Easting:	449939
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Composite
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	15.25 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.4 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	21.35 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.3 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	75
Span Length(s):	15.25 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:	2016	Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P16

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**

Overall Comments: Aluminum seasonal bridge - installed in the spring and removed in the fall. Bridge is in good condition. Support condition should be monitored.

Replacement Value:

Structure Type:	Bridge	Structure Area:	21 (sq.m)
Replacement Cost:	$ 109,200	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Element Data:						
Element Group:	Approaches				Length:	4.95
Element Name:	Other				Width:	1.3
Location:	South End				Height:	0.93
Material:	Wood				Count:	1
Element Type:					Total Quantity:	6.4 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (6.4)				$0
Comments:	Wood deck approach with wood railing, slopes down toward bridge.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Barriers				Length:	15.25
Element Name:	Railing Systems				Width:	
Location:					Height:	1.11
Material:	Aluminium				Count:	2
Element Type:	Aluminum Post and Aluminum Panels				Total Quantity:	30.5 m
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (30.5)			$6,100	$4,575
Comments:	Railings don't meet code for opening size.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Beams/MLE's				Length:	15.25
Element Name:	Girders				Width:	
Location:					Height:	0.14
Material:	Aluminium				Count:	2
Element Type:	Rectangular-solid				Total Quantity:	8.5 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (8.5)			$1,700	$1,275
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	15.25
Element Name:	Deck Top - Thin Slab				Width:	1.4
Location:					Height:	
Material:	Other				Count:	1
Element Type:					Total Quantity:	21.4 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (21.4)			$2,568	$1,926
Comments:	Composite material deck top.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Piers				Length:	
Element Name:	Shafts/Columns/Pile Bents				Width:	
Location:					Height:	1.42
Material:	Aluminium				Count:	8
Element Type:					Total Quantity:	8 Each
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (8)			$7,200	$5,400
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

1-Facing North

2-East Elevation

3-Soffit

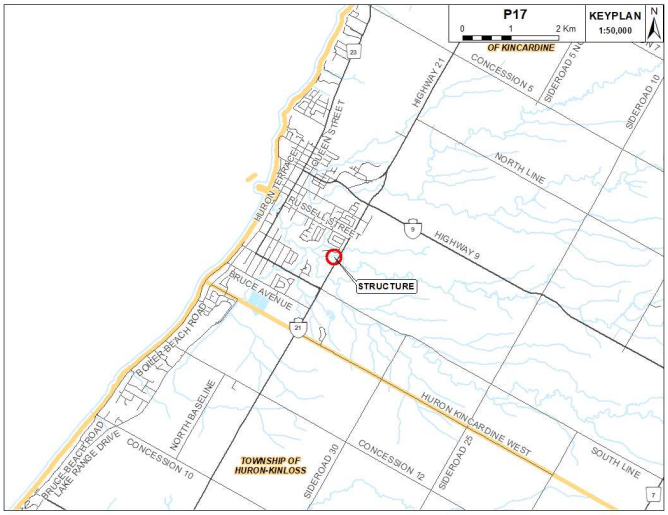
4-West Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P17

Summary Report:

1-Facing East



Datum: NAD83 17N **Northing:** 4890382 **Easting:** 450135

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	40	**CRV:**	$26,000
Road Name:	Red Trail			**Inspection Date:**	7/21/2021
Structure Location:	East End of Red Trail			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Wood structure in fair condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P17

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Red Trail	Northing:	4890382
Structure Location:	East End of Red Trail	Easting:	450135
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	4.94 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	0.96 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	4.7424 (sq.m)	Direction of Structure:	East/West
Roadway Width:	0.9 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	2	Bridge Condition Index:	40
Span Length(s):	2.5 (m) 2.48 (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P17

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**

Overall Comments: Wood structure in fair condition.

Replacement Value:

Structure Type:	Bridge	Structure Area:	5 (sq.m)
Replacement Cost:	$ 26,000	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P17

Element Data:						
Element Group:	Barriers				**Length:**	4.74
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	1.05
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	9.5 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (9.5)		$950	$380
Comments:	Railings don't meet code for opening size or resistance.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	4.74
Element Name:	Stringers				**Width:**	0.038
Location:					**Height:**	0.14
Material:	Wood				**Count:**	3
Element Type:	Rectangular-solid				**Total Quantity:**	3 Each
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (3)			$0	$0
Comments:	Appear to rest on banks.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	4.74
Element Name:	Deck Top - Thin Slab				**Width:**	0.96
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	4.7 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (4.7)		$564	$226
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing East

2-North Elevation

3-Soffit

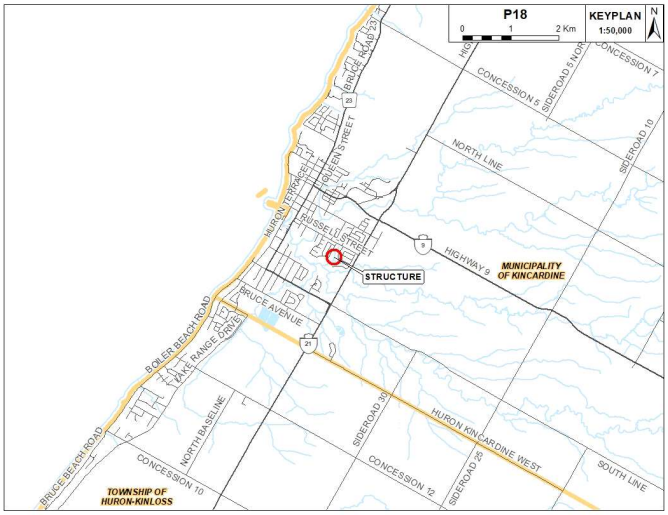
4-South Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P18

Summary Report:

1-Facing North



Datum: NAD83 17N **Northing:** 4890712 **Easting:** 449925

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	50	**CRV:**	$93,600
Road Name:	Red Trail			**Inspection Date:**	7/21/2021
Structure Location:	North End of Red Trail			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Aluminum beams supporting wood decking in fair condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P18

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐ Crossing Type:	Pedestrian
Road Name:	Red Trail	Northing:	4890712
Structure Location:	North End of Red Trail	Easting:	449925
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed: / No. of Lanes:	
Current County:	Bruce	AADT: / % Trucks:	0-49
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	12.3 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.43 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	17.589 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.2 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	50
Span Length(s):	7 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P18

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**
Overall Comments: Aluminum beams supporting wood decking in fair condition.

Replacement Value:

Structure Type: Bridge
Structure Area: 18 (sq.m)
Replacement Cost: $ 93,600
Complexity Factor: 1
Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Element Data:						
Element Group:	Abutments				Length:	0.14
Element Name:	Abutment Walls				Width:	1.2
Location:					Height:	0.28
Material:	Wood				Count:	2
Element Type:	Conventional Closed				Total Quantity:	0.67 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (0.67)		$603	$241
Comments:	2-140 x 140 wood boards at both ends.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Barriers				Length:	12.3
Element Name:	Railing Systems				Width:	0.038
Location:					Height:	0.95
Material:	Wood				Count:	2
Element Type:	Wood Rail >83mm thick on Wood Post				Total Quantity:	24.6 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (24.6)		$2,460	$984
Comments:	Railings don't meet code for opening size, height, or resistance.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Beams/MLE's				Length:	7.1
Element Name:	Girders				Width:	0.085
Location:					Height:	0.33
Material:	Aluminium				Count:	2
Element Type:	I-type				Total Quantity:	13 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (13)		$2,600	$1,040
Comments:	Additional height at midspan. Noticeable deflection when walking.					
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P18

Element Data:						
Element Group:	Decks				**Length:**	12.3
Element Name:	Deck Top - Thin Slab				**Width:**	1.43
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	17.6 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (17.6)			$2,112	$1,584
Comments:	Tree at southeast corner.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing North

2-West Elevation

3-Soffit

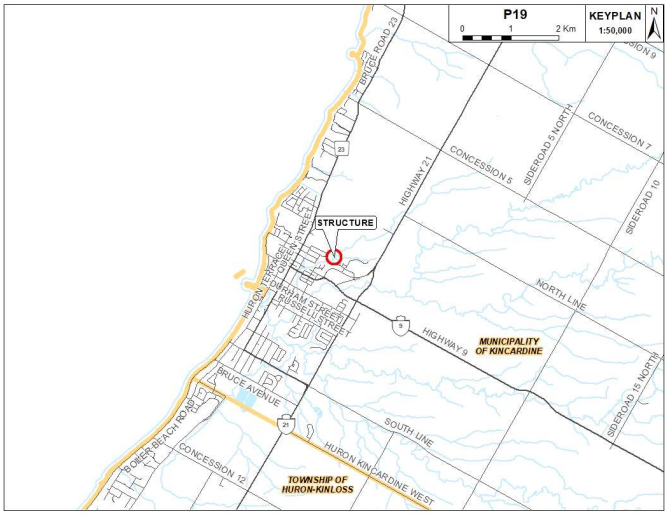
4-East Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P19

Summary Report:

1-Facing East



Datum: NAD83 17N **Northing:** 4892402 **Easting:** 450389

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	58	**CRV:**	$36,400
Road Name:	Blue Trail			**Inspection Date:**	7/22/2021
Structure Location:	89-North Line Extension			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Aluminum beams supporting wood deck. Bridge is in fair condition but supports should continue to be monitored.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Approaches	Re-align approaches	1 to 5 yrs.	$6,000
Barriers	Reinforce railings	1 to 5 yrs.	$4,000
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$10,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P19

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Blue Trail	Northing:	4892402
Structure Location:	89-North Line Extension	Easting:	450389
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	4.87 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.41 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	6.8667 (sq.m)	Direction of Structure:	East/West
Roadway Width:	1.1 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	58
Span Length(s):	4.87 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P19

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years

Overall Comments: Aluminum beams supporting wood deck. Bridge is in fair condition but supports should continue to be monitored.

Replacement Value:

Structure Type:	Bridge	Structure Area:	7 (sq.m)
Replacement Cost:	$ 36,400	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Approaches	Re-align approaches	1 to 5 yrs.	$6,000
Barriers	Reinforce railings	1 to 5 yrs.	$4,000
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$10,000**

Associated Work Required:

Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$10,000**

Justification:

Element Data:						
Element Group:	Abutments				**Length:**	
Element Name:	Abutment Walls				**Width:**	1.2
Location:					**Height:**	0.5
Material:	Wood				**Count:**	2
Element Type:					**Total Quantity:**	1.2 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (1.2)		$1,080	$432
Comments:	Built up from dimension lumber and 140 x 140 wood.					
Performance Deficiencies:						
Recommended Work:	Monitor and stabilize.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Approaches				**Length:**	1.61
Element Name:	Sidewalk				**Width:**	1.22
Location:					**Height:**	
Material:	Wood				**Count:**	2
Element Type:					**Total Quantity:**	2 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (2)		$120	$48
Comments:	Out of alignment with deck.					
Performance Deficiencies:						
Recommended Work:	Re-align approaches.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	4.9
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	0.96
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	9.8 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (9.8)		$980	$392
Comments:	Railings don't meet code for height, resistance, or opening size.					
Performance Deficiencies:						
Recommended Work:	Reinforce railings.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P19

Element Data:						
Element Group:	Beams/MLE's				**Length:**	4.87
Element Name:	Girders				**Width:**	0.08
Location:					**Height:**	0.165
Material:	Aluminium				**Count:**	2
Element Type:	I-type				**Total Quantity:**	7.2 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (7.2)			$1,440	$1,080
Comments:						
Performance Deficiencies:						
Recommended Work:						
					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	4.87
Element Name:	Deck Top - Thin Slab				**Width:**	1.41
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	6.9 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (6.9)			$828	$621
Comments:						
Performance Deficiencies:						
Recommended Work:						
					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing East

2-South Elevation

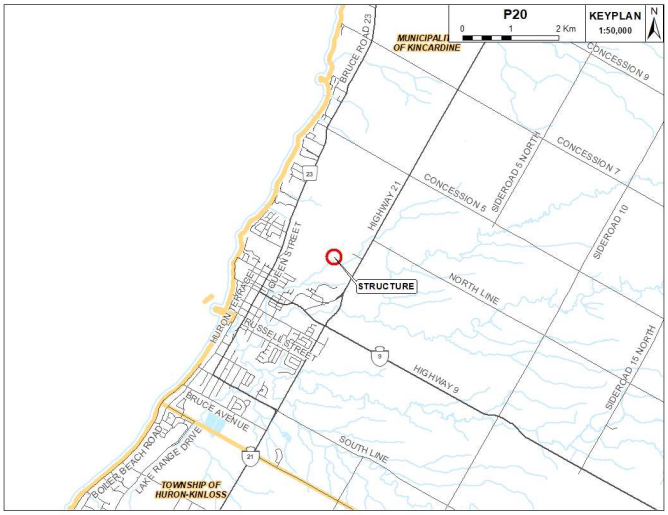
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P20

Summary Report:

1-Facing South



Datum: NAD83 17N **Northing:** 4892920 **Easting:** 451040

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	33	**CRV:**	$78,000
Road Name:	Blue Trail			**Inspection Date:**	7/22/2021
Structure Location:	84-North Line Extension			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Log beam bridge supporting wood deck. Reinforcement recommended.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Beams/MLE's	Reinforcement recommended	1 to 5 yrs.	$15,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$15,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P20

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Blue Trail	Northing:	4892920
Structure Location:	84-North Line Extension	Easting:	451040
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	Box Beams of Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	11.25 (m)	Fill on Structure: 0	(m)
Overall Str. Width:	1.36 (m)	Skew Angle: 0	(Degrees)
Total Struct. Area:	15.3 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.1 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	2	Bridge Condition Index:	33

Span Length(s): 3.65 (m) 7.55 (m) (m) (m) (m)

MTO Number: **BMROSS File Number:**

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P20

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years
Overall Comments: Log beam bridge supporting wood deck. Reinforcement recommended.

Replacement Value:

Structure Type: Bridge
Structure Area: 15 (sq.m)
Replacement Cost: $ 78,000
Complexity Factor: 1
Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Beams/MLE's	Reinforcement recommended	1 to 5 yrs.	$15,000
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$15,000**

Associated Work Required:

Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$15,000**

Justification:

Element Data:						
Element Group:	Abutments				**Length:**	
Element Name:	Abutment Walls				**Width:**	1.8
Location:					**Height:**	0.36
Material:	Wood				**Count:**	2
Element Type:	Conventional Closed				**Total Quantity:**	1.3 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (1.3)		$1,170	$468
Comments:	Built-up from 180 x 180 wood.					
Performance Deficiencies:						
Recommended Work:	Reinforce bridge.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Barriers				**Length:**	11.25
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	0.97
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	22.5 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (22.5)		$2,250	$900
Comments:	Railings don't meet code for opening size, height, or resistance.					
Performance Deficiencies:						
Recommended Work:	Reinforce bridge.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	11.2
Element Name:	Girders				**Width:**	0.2
Location:					**Height:**	0.2
Material:	Wood				**Count:**	2
Element Type:	Rectangular-solid				**Total Quantity:**	13.4 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
				100% (13.4)	$2,010	$0
Comments:	200mm dia log beams with noticeable sag. Significant deflection felt when walking across deck.					
Performance Deficiencies:						
Recommended Work:	Reinforce bridge.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	11.25
Element Name:	Deck Top - Thin Slab				**Width:**	1.36
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	15.3 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (15.3)		$1,836	$734
Comments:						
Performance Deficiencies:						
Recommended Work:	Reinforce bridge.					
					Recommended Timing:	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Piers				**Length:**	1.25
Element Name:	Shafts/Columns/Pile Bents				**Width:**	1.25
Location:					**Height:**	0.85
Material:	Wood				**Count:**	1
Element Type:					**Total Quantity:**	4.25 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (4.25)		$3,825	$1,530
Comments:	Pier is a timber crib filled with stones.					
Performance Deficiencies:						
Recommended Work:	Reinforce bridge.					
					Recommended Timing:	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing South

2-East Elevation

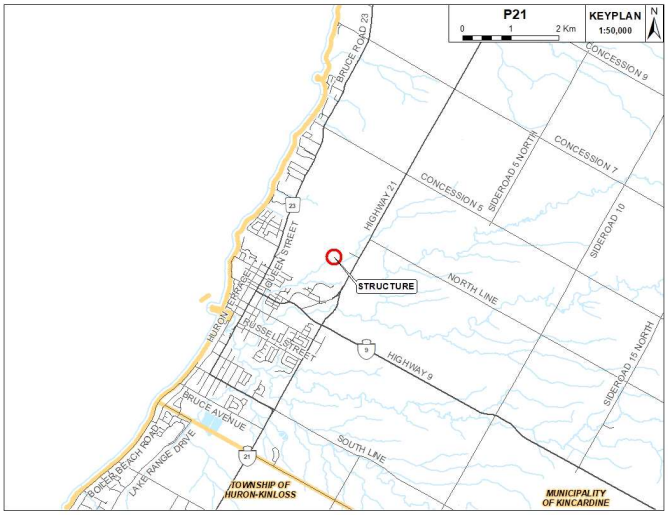
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P21

Summary Report:

1-Facing South



Datum: NAD83 17N **Northing:** 4892898 **Easting:** 451106

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	28	**CRV:**	$57,200
Road Name:	Blue Trail			**Inspection Date:**	7/22/2021
Structure Location:	95-North Line Extension			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Log beams supporting wood deck. Reinforcement recommended.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Beams/MLE's	Reinforce bridge and erosion protection	1 to 5 yrs.	$20,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$20,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P21

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Blue Trail	Northing:	4892898
Structure Location:	95-North Line Extension	Easting:	451106
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	Box Beams of Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	8.0 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.4 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	11.2 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.1 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	28
Span Length(s):	8 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P21

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years
Overall Comments: Log beams supporting wood deck. Reinforcement recommended.

Replacement Value:

Structure Type: Bridge
Structure Area: 11 (sq.m)
Replacement Cost: $ 57,200
Complexity Factor: 1
Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Beams/MLE's	Reinforce bridge and erosion protection	1 to 5 yrs.	$20,000
			$0
			$0
			$0
			$0
			$0
			$0

Repair/Rehabilitation Sub-Total:	**$20,000**

Associated Work Required:

Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0

Associated Work Sub-Total:	**$0**
Total Cost:	**$20,000**

Justification:

Element Data:						
Element Group:	Approaches				Length:	1.25
Element Name:	Sidewalk				Width:	1.18
Location:					Height:	
Material:	Wood				Count:	2
Element Type:					Total Quantity:	1.5 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (1.5)		$90	$36
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Barriers				Length:	8.0
Element Name:	Railing Systems				Width:	
Location:					Height:	0.96
Material:	Wood				Count:	2
Element Type:	Wood Rail >83mm thick on Wood Post				Total Quantity:	16 m
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
			100% (16)		$1,600	$640
Comments:	Openings and resistance don't meet code.					
Performance Deficiencies:						
Recommended Work:	Reinforce railings.				Recommended Timing:	1-5 years
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Beams/MLE's				Length:	8.0
Element Name:	Girders				Width:	0.17
Location:					Height:	0.17
Material:	Wood				Count:	2
Element Type:					Total Quantity:	8.2 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
				100% (8.2)	$1,230	$0
Comments:	Log beams 170-250mm dia. Noticeable sag and deflection when walking on deck. Don't appear to rest on abutments.					
Performance Deficiencies:						
Recommended Work:	Reinforce bridge.				Recommended Timing:	1-5 years
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P21

Element Data:						
Element Group:	Decks				**Length:**	8.0
Element Name:	Deck Top - Thin Slab				**Width:**	1.4
Location:					**Height:**	0.038
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	11.2 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (11.2)		$1,344	$538
Comments:						
Performance Deficiencies:						
Recommended Work:	Reinforce bridge.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing South

2-West Elevation

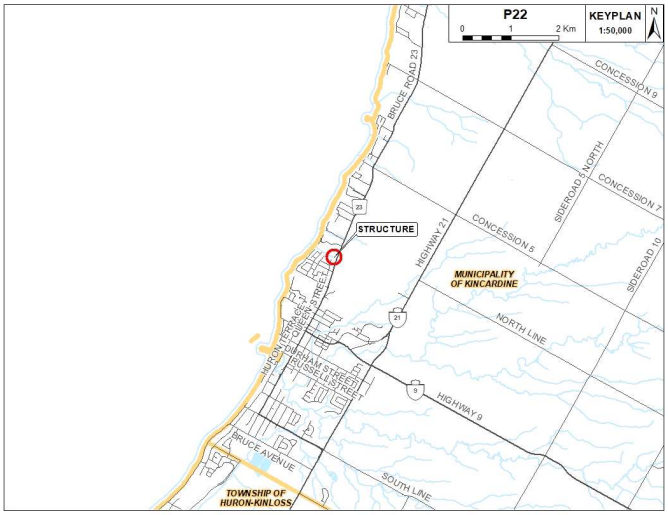
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P22

Summary Report:

1-Facing West



Datum: NAD83 17N **Northing:** 4893741 **Easting:** 450080

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	62	**CRV:**	$36,400
Road Name:	Blue Trail			**Inspection Date:**	7/22/2021
Structure Location:	West of Road 23			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Wood beams supporting wood deck. Bridge is in fair condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P22

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Blue Trail	Northing:	4893741
Structure Location:	West of Road 23	Easting:	450080
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	Box Beams of Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	4.91 (m)	Fill on Structure: 0	(m)
Overall Str. Width:	1.5 (m)	Skew Angle:	(Degrees)
Total Struct. Area:	7.365 (sq.m)	Direction of Structure:	East/West
Roadway Width:	1.2 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	62
Span Length(s):	4.9 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P22

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**
Overall Comments: Wood beams supporting wood deck. Bridge is in fair condition.

Replacement Value:

Structure Type: Bridge
Structure Area: 7 (sq.m)
Replacement Cost: $ 36,400
Complexity Factor: 1
Price per sq. m.: $ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Element Data:						
Element Group:	Barriers				**Length:**	4.8
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	0.96
Material:	Wood				**Count:**	2
Element Type:	Wood Rail <83mm thick on Wood Post				**Total Quantity:**	9.6 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (9.6)		$960	$384
Comments:	Railings don't meet code requirements for opening size, height, or resistance.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	4.9
Element Name:	Girders				**Width:**	0.14
Location:					**Height:**	0.14
Material:	Wood				**Count:**	2
Element Type:	Rectangular-solid				**Total Quantity:**	4.1 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (4.1)		$615	$246
Comments:	140 x 140 wood beams. Don't appear to rest on abutments.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	4.91
Element Name:	Deck Top - Thick Slab				**Width:**	1.5
Location:					**Height:**	0.038
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	7.4 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (7.4)			$2,590	$1,943
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing West

2-North Elevation

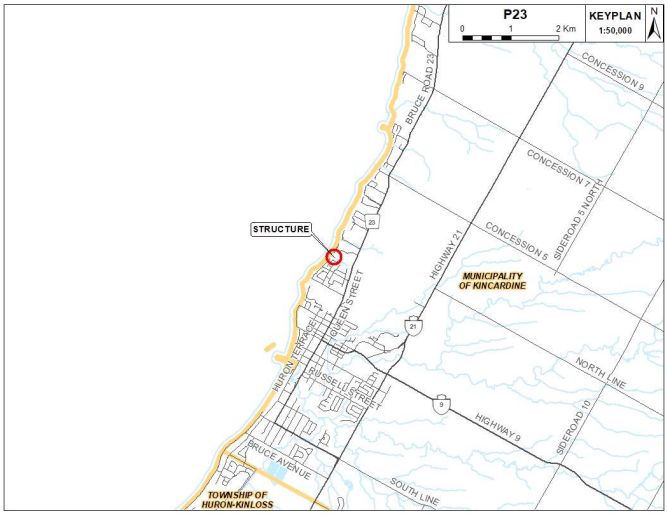
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P23

Summary Report:

2 - West Elevation



Datum: NAD83 17N **Northing:** 4893923 **Easting:** 449753

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	28	**CRV:**	$57,200
Road Name:	Blue Trail			**Inspection Date:**	7/22/2021
Structure Location:	West End of Blue Trail			**Next Inspection:**	8/20/2023
Condition Summary:	Repairs recommended	**Recommended Timing:**	1-5 Years	**Current Load Limit:**	N/A
Overall Comments:	Log beams supporting wood deck. Reinforcement recommended.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Beams/MLE's	Reinforcement recommended		$15,000
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$15,000

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P23

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Blue Trail	Northing:	4893923
Structure Location:	West End of Blue Trail	Easting:	449753
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	Box Beams of Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	7.83 (m)	Fill on Structure: 0	(m)
Overall Str. Width:	1.4 (m)	Skew Angle: 0	(Degrees)
Total Struct. Area:	10.962 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.2 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	28

Span Length(s): 7.8 (m) (m) (m) (m) (m)

MTO Number: **BMROSS File Number:**

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P23

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: Repairs recommended **Recommended Timing:** 1-5 Years

Overall Comments: Log beams supporting wood deck. Reinforcement recommended.

Replacement Value:

Structure Type:	Bridge	Structure Area:	11 (sq.m)
Replacement Cost:	$ 57,200	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
Beams/MLE's	Reinforcement recommended		$15,000
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	$15,000

Associated Work Required:

Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	$0
	Total Cost:	$15,000

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P23

Element Data:						
Element Group:	Barriers				**Length:**	7.8
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	0.95
Material:	Wood				**Count:**	2
Element Type:	Wood Rail <83mm thick on Wood Post				**Total Quantity:**	15.6 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (15.6)		$1,560	$624
Comments:	Railings don't meet code requirements for height, opening size, or resistance.					
Performance Deficiencies:						
Recommended Work:	Reinforcement recommended.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	7.8
Element Name:	Girders				**Width:**	0.17
Location:					**Height:**	0.17
Material:	Wood				**Count:**	2
Element Type:					**Total Quantity:**	8 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
				100% (8)	$1,200	$0
Comments:	Log beams 170-240mm dia. Noticeable deflection when walking. Don't rest on abutments. Banks are steep.					
Performance Deficiencies:						
Recommended Work:	Reinforcement recommended.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	7.8
Element Name:	Deck Top - Thin Slab				**Width:**	1.4
Location:					**Height:**	0.038
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	11 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (11)		$1,320	$528
Comments:						
Performance Deficiencies:						
Recommended Work:	Reinforcement recommended.				**Recommended Timing:**	1-5 years
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1 - Facing South

2 - West Elevation

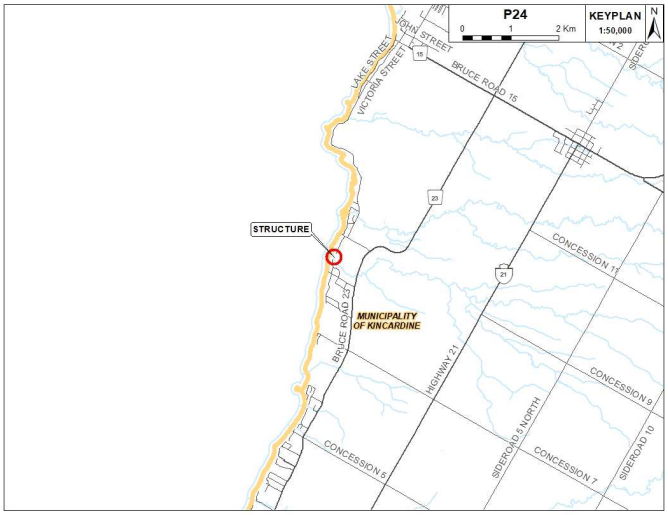
3 - Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P24

Summary Report:

1-Facing North



Datum: NAD83 17N **Northing:** 4899371 **Easting:** 451539

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	75	**CRV:**	$405,600
Road Name:	Birchwood Ave. Trail			**Inspection Date:**	7/22/2021
Structure Location:				**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Half-through truss in good condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P24

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Birchwood Ave. Trail	Northing:	4899371
Structure Location:		Easting:	451539
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Truss	Surface Type:	Wood
Structure Type:	Half-Through Truss	Detour Length Around Bridge:	(km)
Total Deck Length:	36.5 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	2.13 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	77.745 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.8 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	75
Span Length(s):	36.5 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P24

Field Inspection Information:

Date of Inspection: 7/22/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023
Inspector: Ryan Munn
Inspecting Firm: BM Ross & Associates Limited
Others in Party: Andrew McGarvey
Equipment Used: Hammer, Camera, Measuring Tape, Chain
Weather: Sunny, Slight Breeze
Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**
Overall Comments: Half-through truss in good condition.

Replacement Value:

Structure Type:	Bridge	Structure Area:	78 (sq.m)
Replacement Cost:	$ 405,600	Complexity Factor:	1
		Price per sq. m.:	$ 5,200.00

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Element Data:						
Element Group:	Abutments				Length:	
Element Name:	Abutment Walls				Width:	2.7
Location:					Height:	1.0
Material:	Cast-in-place Concrete				Count:	2
Element Type:	Conventional Closed				Total Quantity:	5.4 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (5.4)			$4,860	$3,645
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Barriers				Length:	36.5
Element Name:	Railing Systems				Width:	
Location:					Height:	1.0
Material:	Steel				Count:	2
Element Type:	Steel Post and Steel Panel				Total Quantity:	73 m
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (73)			$14,600	$10,950
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Beams/MLE's				Length:	2.1
Element Name:	Diaphragms				Width:	0.05
Location:					Height:	0.15
Material:	Steel				Count:	28
Element Type:	Cross Type				Total Quantity:	28 Each
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (28)			$0	$0
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Decks				Length:	36.5
Element Name:	Deck Top - Thin Slab				Width:	2.13
Location:					Height:	
Material:	Wood				Count:	1
Element Type:	Wood Planks				Total Quantity:	77.7 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (77.7)			$9,324	$6,993
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	36.5
Element Name:	Bottom Chords				Width:	0.15
Location:					Height:	0.15
Material:	Steel				Count:	2
Element Type:	Box/Trapezoidal				Total Quantity:	32.9 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (32.9)			$9,870	$7,403
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	36.5
Element Name:	Top Chords				Width:	0.15
Location:					Height:	0.15
Material:	Steel				Count:	2
Element Type:	Box/Trapezoidal				Total Quantity:	32.9 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (32.9)			$9,870	$7,403
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	1.28
Element Name:	Verticals/Diagonals				Width:	0.1
Location:	Outside Diagonals				Height:	0.15
Material:	Steel				Count:	4
Element Type:	Box/Trapezoidal				Total Quantity:	2 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (2)			$600	$450
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	1.5
Element Name:	Verticals/Diagonals				Width:	0.07
Location:	Inside Diagonals				Height:	0.05
Material:	Steel				Count:	56
Element Type:	Box/Trapezoidal				Total Quantity:	14.3 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (14.3)			$4,290	$3,218
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	None
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

Element Data:						
Element Group:	Trusses/Arches				Length:	1.18
Element Name:	Verticals/Diagonals				Width:	0.1
Location:	Verticals				Height:	0.1
Material:	Steel				Count:	62
Element Type:	Box/Trapezoidal				Total Quantity:	21.9 m2
Environment:	Benign				Limited / Not Inspected:	☐
Protection System:	None				BCI - Element Condition Values:	
Condition Data:	Excellent	Good	Fair	Poor	TEV	CEV
		100% (21.9)			$6,570	$4,928
Comments:						
Performance Deficiencies:						
Recommended Work:					Recommended Timing:	
Maintenance needs:						
Maintenance work:					Maintenance Priority:	

1-Facing North

2-West Elevation

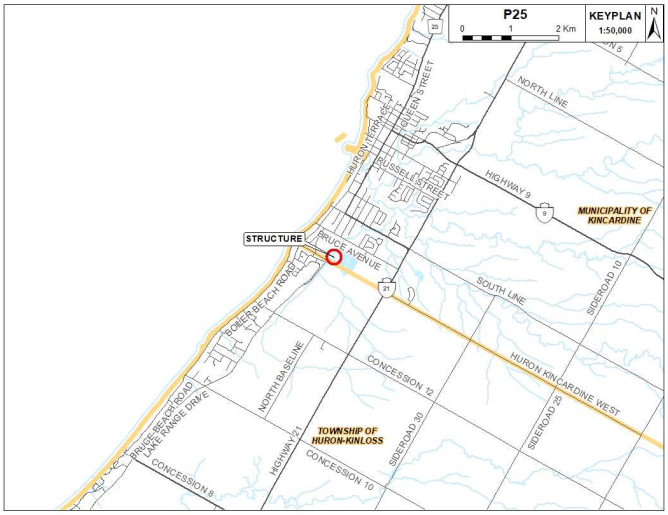
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P25

Summary Report:

2-West Elevation



Datum: NAD83 17N **Northing:** 4889555 **Easting:** 448290

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	66	**CRV:**	$57,200
Road Name:	Yellow Trail			**Inspection Date:**	7/21/2021
Structure Location:	South of Bruce Ave.			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Aluminum beams supporting wood deck in fair to good condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P25

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Yellow Trail	Northing:	4889555
Structure Location:	South of Bruce Ave.	Easting:	448290
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	7.55 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.43 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	10.7965 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.2 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	66
Span Length(s):	4.4 (m)	(m) (m) (m) (m)	
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P25

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: Andrew McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**

Overall Comments: Aluminum beams supporting wood deck in fair to good condition.

Replacement Value:

Structure Type:	Bridge	Structure Area:	11	(sq.m)
Replacement Cost:	$ 57,200	Complexity Factor:	1	
		Price per sq. m.:	$ 5,200.00	

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P25

Element Data:						
Element Group:	Barriers				**Length:**	7.55
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	0.96
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	15.1 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (15.1)		$1,510	$604
Comments:	Railings don't meet code requirements for height, opening size, resistance and they deflect under force.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	7.55
Element Name:	Girders				**Width:**	0.08
Location:					**Height:**	0.34
Material:	Aluminium				**Count:**	2
Element Type:	I-type				**Total Quantity:**	13.9 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (13.9)			$2,780	$2,085
Comments:	Beams taller at midspan. Beams rest on a bank at one end and lumber at the other end.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	7.55
Element Name:	Deck Top - Thin Slab				**Width:**	1.43
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	10.8 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (10.8)			$1,296	$972
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing South

2-West Elevation

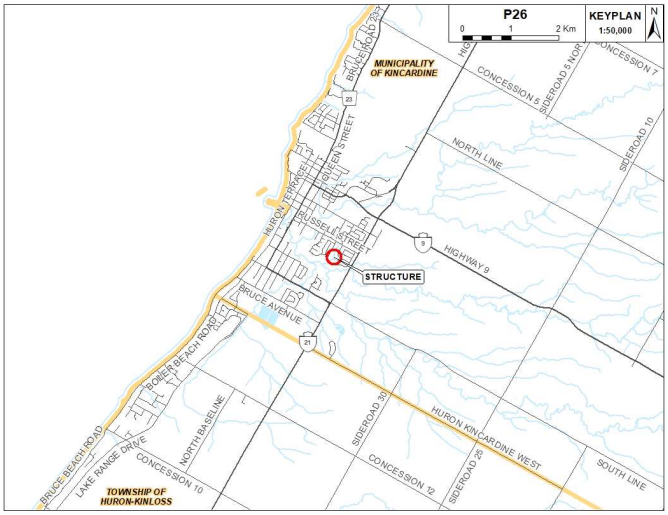
3-Soffit

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P26

Summary Report:

1-Facing West



Datum: NAD83 17N **Northing:** 4890679 **Easting:** 449930

Structure Name:		**BMROSS File #:**		**MTO #:**	
Main Hwy / Road #:		**Bridge Condition Index (BCI:)**	50	**CRV:**	$88,400
Road Name:	Red Trail			**Inspection Date:**	7/21/2021
Structure Location:	North End of Red Trail			**Next Inspection:**	8/20/2023
Condition Summary:	No work identified	**Recommended Timing:**		**Current Load Limit:**	N/A
Overall Comments:	Aluminum beam bridge supporting wood deck in fair condition.				

Repair / Rehabilitation:

Element:	Work Required	Period	Cost
			$0
			$0
			$0
			$0
			$0
			$0
			$0
Various	Associated Work		$0
		Total	$0

Additional Investigations:

Maintenance Needs:

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P26

Inventory Data:

Structure Name:			
Main Hwy / Road #:		On ☐ Under ☐	Crossing Type: Pedestrian
Road Name:	Red Trail	Northing:	4890679
Structure Location:	North End of Red Trail	Easting:	449930
Owner(s):	Municipality of Kincardine	Heritage Designation:	
MTO Region:	Southwestern	Road Class:	
MTO District:	Owen Sound	Posted Speed:	No. of Lanes:
Current County:	Bruce	AADT: 0-49	% Trucks:
Geographic Twp.:	KINCARDINE	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Wood
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	11.9 (m)	Fill on Structure:	0 (m)
Overall Str. Width:	1.43 (m)	Skew Angle:	0 (Degrees)
Total Struct. Area:	17.017 (sq.m)	Direction of Structure:	North/South
Roadway Width:	1.2 (m)	Min. Vert. Clearance:	(m)
Number of Spans:	1	Bridge Condition Index:	50
Span Length(s):	7 (m) (m) (m) (m) (m)		
MTO Number:		**BMROSS File Number:**	

Historical Data:

Year Built:		Last Biennial Inspection:	2020
Current Load Limit:	(tonnes)	Last Evaluation:	
Load Limit By-Law #:		Last Enhanced Inspection:	
By-Law Expiry Date:		Enhanced Access Equipment:	

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P26

Field Inspection Information:

Date of Inspection: 7/21/2021 **Inspection Type:** OSIM Inspection **Next Detailed Inspection:** 2023

Inspector: Ryan Munn

Inspecting Firm: BM Ross & Associates Limited

Others in Party: McGarvey

Equipment Used: Hammer, Camera, Measuring Tape, Chain

Weather: Sunny, Slight Breeze

Temperature: 22 ^{O}C

Additional Investigations

Investigation Description	Note	Priority	Estimated Cost
Detailed Deck Condition or Corrosion Potential Survey		N/R	$0
Non-destructive Delamination Survey of Asphalt-Covered Deck		N/R	$0
Concrete Substructure Condition Survey		N/R	$0
Detailed Coating Condition Survey		N/R	$0
Detailed Timber Investigation		N/R	$0
Post-Tensioned Strand Investigation		N/R	$0
Underwater Investigation		N/R	$0
Fatigue Investigation		N/R	$0
Seismic Investigation		N/R	$0
Structure Evaluation		N/R	$0
Monitoring Deformations, Settlements, or Movements of Crack Widths		N/R	$0
		Total Cost:	$0

Overall Structure Notes:

Bridge Condition Summary: No work identified **Recommended Timing:**

Overall Comments: Aluminum beam bridge supporting wood deck in fair condition.

Replacement Value:

Structure Type:	Bridge	Structure Area:	17	(sq.m)
Replacement Cost:	$ 88,400	Complexity Factor:	1	
		Price per sq. m.:	$ 5,200.00	

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections and rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

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

Ontario Structure Inspection Manual - Inspection Report:

Site Number: P26

Repair / Rehabilitation:			
Element:	**Work Required**	**Period**	**Cost**
			$0
			$0
			$0
			$0
			$0
			$0
			$0
		Repair/Rehabilitation Sub-Total:	**$0**

Associated Work Required:		
Mobilize / Demobilize		$0
Approaches		$0
Traffic Control / Detours		$0
Utilities		$0
Right of Way		$0
Environmental Study		$0
Engineering		$0
Other		$0
Contingencies		$0
	Associated Work Sub-Total:	**$0**
	Total Cost:	**$0**

Justification:

Element Data:						
Element Group:	Barriers				**Length:**	11.9
Element Name:	Railing Systems				**Width:**	0.038
Location:					**Height:**	0.95
Material:	Wood				**Count:**	2
Element Type:	Wood Rail >83mm thick on Wood Post				**Total Quantity:**	23.8 m
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (23.8)		$2,380	$952
Comments:	Railings don't meet code requirements for height, opening size, or resistance.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Beams/MLE's				**Length:**	7.1
Element Name:	Girders				**Width:**	0.085
Location:					**Height:**	0.33
Material:	Aluminium				**Count:**	2
Element Type:	I-type				**Total Quantity:**	13 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100% (13)		$2,600	$1,040
Comments:	Beams taller at midspan. Rest on 140 x 140 lumber and banks. Noticeable deflection when walking on deck.					
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

Element Data:						
Element Group:	Decks				**Length:**	11.9
Element Name:	Deck Top - Thin Slab				**Width:**	1.43
Location:					**Height:**	
Material:	Wood				**Count:**	1
Element Type:	Wood Planks				**Total Quantity:**	17 m2
Environment:	Benign				**Limited / Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Excellent**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100% (17)			$2,040	$1,530
Comments:						
Performance Deficiencies:						
Recommended Work:					**Recommended Timing:**	None
Maintenance needs:						
Maintenance work:					**Maintenance Priority:**	

1-Facing West

2-West Elevation

3-Soffit

4-East Elevation