

Township of Strong D.M. Wills Project No. 24-9217

2018 Municipal Structure Inspection Program

Summary Report



September 2018

Prepared for: The Township of Strong

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1. OSIM Bridge and Culvert Inspections

D.M. Wills Associates Limited ("Wills") was retained by the Township of Strong to complete detailed visual inspections of their structure inventory in accordance with the Public Transportation and Improvement Act. Specifically, Ontario Regulation 104/97 'Standards for Bridges' made under the Act requires that:

"The structural integrity, safety and condition of every bridge shall be determined through the performance of at least one inspection in every second calendar year under the direction of a professional engineer and in accordance with the Ontario Structure Inspection Manual ..."

Wills completed the detailed visual inspections of ten (10) roadway structures on behalf of the Township in 2018. An inventory of all bridges and culverts inspected is provided in **Appendix A**.

During completion of the bridge inspections, each structural element was measured and assessed for condition in accordance with the OSIM reporting format. The bridge inspection forms (OSIM format) are provided in **Appendix D**.

2. Municipal Structures Inventory and Data

The following Maintenance Needs are identified for the bridge and culvert inventory. The list is not priority based however urgent items have been identified. It is assumed that for nonurgent items the Township's Public Works staff will perform all necessary maintenance on an intermittent basis as resources are available. The Maintenance Needs are a check list of works that should be completed and monitored by Township staff on a regular basis. The Township should strive to ensure that all maintenance items are addressed within one year.

The maintenance needs for the roadway bridges and culverts fall into the following categories:

Maintenance Activity	Location
Bridge deck cleaning (debris removal)	BR1 – Adams Road Bridge BR3 – Brookside Road Bridge BR4 – Robins Road Bridge BR6 – Stirling Creek Bridge
Rout and seal Bridge bearing maintenance (debris removal) Repair of Barrier Posts/Guide Rail	BR7 – Pevensey Road Bridge BR5 – Muskoka Road Bridge BR6 – Stirling Creek Bridge BR3 – Brookside Road Bridge (Urgent) BR6 – Stirling Creek Bridge
Repair washouts / unstable embankments	BR2 – Forest Lake Rd. Culvert



Install Narrow Bridge signage	BR3 – Brookside Road Bridge BR7 – Pevensey Road Bridge
	BR6 – Stirling Creek Rd. Bridge
	(Urgent)
Install Load Limit signage	BR3 – Brookside Road Bridge
	(Urgent)
Install Hazard signage	BR6 – Stirling Creek Rd. Bridge
	(Urgent)
Bridge Deck Drainage	BR5 – Muskoka Road Bridge

The maintenance activities can be easily grouped into work order tasks for completion and assigned to Township works crews accordingly. If internal resources are not available to complete the maintenance activities, the Township should consider contracting the necessary labour, equipment and materials to complete the work.

As maintenance activities are completed or additional maintenance needs are identified the Maintenance Needs lists should be kept up-to-date such that management staff can direct work accordingly.

3. 5 Year Structure Rehabilitation Program

Of the ten (10) bridges and culverts inspected, five (5) structures require some form of repair, rehabilitation and/or replacement. The urgency of rehabilitation varies based on the condition of individual bridge elements, therefore priority should be given to the rehabilitation of structures that exhibit advanced states of deterioration or have sustained serious structural damage.

The rehabilitation needs for the 5 Year Structure Rehabilitation Program are higher priority needs that are short-listed from all the current structure needs. Lower priority needs should be monitored throughout future inspection periods and their priority adjusted as necessary, however addressing these needs is not critical at this time.

A recommended 5-Year Capital Bridge Program is presented in **Table 1** and has total estimated cost of **\$ 919,750**. Please refer to **Appendix C** for a complete list of all required rehabilitation measures.



Capital Budget Year	Structure No Location	Recommended Works	Estimated Costs (\$2018)
2019	BR12 – Rodeo Road Bridge	Replace Culvert	\$ 423,750
2020	BR7 – Pevency Road Bridge	Repair Undermining. Repair Barrier Concrete.	\$ 15,000
2021	BR3 – Brookside Road Bridge	Remove and reset modular bridge on new abutments.	\$ 195,000
2022	BR2 – Forest Lake Road Culvert	New wearing surface. Install New Inlet Components. Install New Outlet Components. Replace culvert with New Concrete Box Culvert. Install Steel Beam Guide Rail.	\$ 256,000
2023	BR6 – Stirling Creek Bridge	Replace Timber Wearing Surface and Curbs. Repair Deck Top Timbers.	\$ 30,000

	TABLE 1:	Recommended	5	Year	Capital	Bridge	Program
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4. Bridge By-Laws and Load Postings

Copies of the current Township "Load Posting" Bylaws are enclosed as Appendix E.

Based upon documents provided by the Township of Strong, the following structures are understood to have legal By-Laws and Load Posting restrictions:

Bridge	Name	By-Law#	Load Limit(s)
3	Brookside Road Bridge	2010-041	20 tonnes

Until the recommended work is completed at Brookside Road Bridge, the current Bylaw# 2010-041 shall remain in place along with all required on site signage.



5. Closure

D.M. Wills Associates Ltd. completed the Township of Strong 2018 OSIM Structure Inspection program under the supervision of Ghassan Zanzoul, P.Eng. and Michael McDonnell.

The Recommended 5 Year Capital Program is provided to ensure that the Township continues to invest in the bridge asset class with a goal to maintain a minimum maintenance standard for all structures. The projects listed above represent the best opportunity for the Township to improve overall structure inventory condition.

The contents of this Summary Report shall be read in conjunction with the detailed OSIM Inspection Report for each structure. The Summary Report is intended to be a concise summary of the individual OSIM Reports; however the detailed (individual) OSIM Reports must be consulted to verify accuracy of any information contained within the Summary Report.

All reports are based upon the visual condition observed on the date of inspection.





Manager / Structural Engineering

Appendix A

Inventory List

	Strong Township - List of Structures						
Str. ID	Str. ID Structure Name Road Name Location BCI Value						
BR1	Adams Road Bridge	Adams Road	Adams Road at Hornibrook Road	83.53			
BR2	Forest Lake Road Culvert	Forest Lake Road	West of Bernard Crescent	66.79			
BR3	Brookside Road Bridge	Brookside Road	650m East of Rodeo Road	72.78			
BR4	Robins Road Bridge	Robins Road	East of HWY 11	75			
BR5	Muskoka Road Bridge	Muskoka Road	200m North of Robin Road	100			
BR6	Stirling Creek Bridge	North Horn Lake Road	West of HWY 11	71.03			
BR7	Pevency Road Bridge	Pevency Road	South of Farm View Road	74.72			
BR8	Black Creek Road Culvert	Black Creek Road	500m West of HWY 11	75			
BR11	Rodeo Road Culvert	Rodeo Road	South of HWY 124	75			
BR12	Rodeo Road Bridge	Rodeo Road	1km South of Black Creek Road	58.93			

Appendix B

Inventory Map





Inventory Map:

- 1 Adams Road Bridge
- 2- Forest Lake Road Culvert
- 3 Brookside Road Bridge
- 4 Robins Road Bridge
- 5 Muskoka Road Bridge
- 6 North Horn Lake Road
- 7- Pevensey Road Bridge
- 8 Black Creek Road Culvert
 - 11 Rodeo Road Culvert
 - 12 Rodeo Road Bridge

Appendix C

Complete List of Required Rehabilitation Needs

Structure No.	Structure Name	Priority	Rehabilitation Need	Estimated Cost
BR2	Forest Lake Road Culvert	1-5 Veare	New wearing surface	£00.000.00
BRE	Toroat Eake Road Oulvert		Install New Inlet Components	\$20,000.00 \$10,000.00
			Install New Outlet Components	\$10,000.00
			Replace culvert with New Concrete Box	φ10,000.00
			Culvert	\$150,000.00
			Install Steel Beam Guide Rail	\$20,000,00
			Traffic Control	\$5,000.00
			Engineering	\$20.000.00
			Contingencies	\$21.000.00
			Total:	\$256,000.00
BR3	Brookside Road Bridge	1-5 Years	Reconstruct embankments with New	\$25,000.00
			Abutments Remove Old Structure and Reconstruct	
			Abutments	\$150,000.00
			Engineering and Contract Admin.	\$20,000.00
			Total:	\$195,000.00
BR6	Stirling Creek Bridge	1-5 Years	Replace Timber Curbs	\$5,000.00
			Replace Wearing Surface	\$10,000.00
			Repair Deck Top Timbers	\$15,000.00
			Total:	\$30,000.00
BR7	Pevency Road Bridge	1-5 Years	Repair Undermining	\$10,000.00
			Repair Barrier Concrete	\$5,000.00
			Total:	\$15,000.00
BR12	Rodeo Road Bridge	1-5 Years	Replace culvert	\$248,600.00
			Excavation and Road Reconstruction	\$45,200.00
			Environmental Controls and Dewatering	\$28,250.00
			Eng. Design and Contract Administration	\$56,500.00
			Contingency Allowance	\$45,200.00
			Total:	\$423,750.00
			5-Year Plan Total Cost:	\$919,750.00

Strong Township - Complete List of Rehabilitation Needs

OSIM Inspection Forms & Photos (By Structure)

STRUCTURE ID BR1

nventory Data						
Structure Name	Adams Rd Bridge					
Main Hwy/Road #	On 🖌 Under 🗌 Crossing Typ	>e Non-navig water				
Road Name	Adams Road					
Structure Location	Adams Road at Hornibrook Road					
Latitude	Longitude					
Owner(s)	Township of Strong					
Heritage Designation	n Not Cons					
Road Class:	Local					
MTO Region	Northern					
MTO District	Huntsville Posted Speed	80 No of Lanes 1				
Old County	Parry Sound AADT	0 % Trucks 0				
Geographic Twp	Township of Strong Special Routes: Tra	insit 🗍 Truck 🗌 School 🗌 Bicycle 🗌				
Structure Type	Rigid Frame, Vertical legs Detour Length Around I	Bridge (km)				
Total Deck Length	7 (m) Fill on Structure	0 (m)				
Overall Str Width	5.6 (m) Skew Angle	0 (Degrees)				
Total Deck Area	39.2 (sq. m) Direction of Structure	East/West				
Roadway Width	4.6 (m) No of Spans	1				
Span Lengths	7	(m)				
Historical Data						
Year Built:	Last Biennial In	spection: 11/5/2016				
Current Load Limit:	it: (tonnes) Last BridgeMas	ster Inspection:				
Load Limit By-Law	v #: Last Evaluation	Ľ				
By-Law Expiry Date: Last Underwater Inspection:		ar Inspection:				
Min Vertical Clearance: (m) Last Condition Survey:						
Rehab History: (Date/description)						
2017: New curbs. New bridge railing and posts. New guide rail and signs. Concrete repairs.						

°C

Field Inspection Information

Date of Inspection:	6/26/2018	Temperature:	21
Inspected By:	D.M. Wills Associates Ltd.		
Inspector:	Ghassan Zanzoul, P. Eng.		
Others in Party:	Michael McDonnell		
Equipment Used:	Camera, tape measure.		
Weather:	Sunny		

Additional Investigations Required

	Priority	Estimated Cost
Detailed Deck Condition Survey: DART Survey Detailed Coating Condition Survey: Underwater Investigation: Fatigue Investigation: Seismic Investigation: Structure Evaluation:		
Load Posting:Estimated Load	Total Cost	
Next Date Inspection;	6/26/2020	
BCI 83.53 Special Notes:		

Suspected Performance Deficiencies

- 00 None
- 01 Load carrying capacity 02 Excessive deformations (deflections rotations)
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

- 01 Lift and Swing Bridge Maintenance
- 02
- Bridge Cleaning Bridge Handrail Maintenance 03
- Painting Steel Bridge Structures 04
- Bridge Deck Joint Repair Bridge Bearing Maintenance 05 06

- 06 Bearing not uniformly loaded/unstable
- 07 Jammed expansion joint
- 08 Pedestrian/vehicular hazard
- 09 Rough riding surface 10 Surface ponding
- 11 Deck drainage
- 07 Repair to Structural Steel
- 08 Repair of Bridge Concrete Repair of Bridge Timber 09
- 10
- Bailey Bridges Maintenance Animal/Pest Control 11
- 12 Bridge Surface Repair

- Slippery surfaces 12
- 13 Flooding/channel blockage
- 14 Undermining of foundation 15 Unstable embankments
- 16 Other
- Erosion Control at Bridges Concrete Sealing Rout and Seal 13
- 14
- 15 16
- Bridge deck Drainage 17 Other

STRUCTURE ID BR1_

Element Group:	Barriers	Length:				
Element Name	Railing Systems	Width:				
Location:	Each side of bridge	Height:				
Material:	Steel	Count:	Count:			
Flomont Type:	Steel Elex Beam on steel nest	Total Ou	antity:	24 4		
Element Type.	Steel Flex Beam of steel post	Limited b		24.4		
Environment.		Linited i				
Protection System:	Hot olp galvanizing		Maint. Needs			
Condition Data: Uni	s Exc Good Fair Poor		None			
m	24.4		Perform. Deficiencies			
Comments			None			
			Estimated Construction Cost:	\$0.0		
			Priority	Nono		
			ritolity	6-10 yrs		
Recommended Work				1-5 vrs		
				Within 1 vr		
				Urgent		
Element Group:	Sidewalks/ourbe	Length:		13.2		
Clement Name	Curba	Manh.		0.6		
Element Name:	Curbs	wioth:		0.6		
Location:	North	Height:		0.25		
Material:	Cast-in-place concrete	Count:	Total Quantity: 14.52			
Element Type:						
Environment:	Severe	Limited I	nspection			
Protection System:	None		Maint, Needs			
Condition Data: Uni	s Exc Good Fair Poor		None			
Sq.	m14.52		Perform Deficiencies			
Comments			None			
			Estimated Construction Cost:	\$0.0		
			Distant	\$010		
			Priority	None		
Recommended Work				o- to yrs		
				1 5 100		
				1-5 yrs		
				1-5 yrs Within 1 yr		
				1-5 yrs Within 1 yr Urgent		
Element Group:	Abutments	Length:		1-5 yrs Within 1 yr Urgent		
Element Group: Element Name:	Abutments Abutment walls	Length: Width:		1-5 yrs Within 1 yr Urgent 4.5		
Element Group: Element Name: Location:	Abutments Abutment walls Each End	Length: Width: Height:		1-5 yrs Within 1 yr Urgent 4.5		
Element Group: Element Name: Location: Material:	Abutments Abutment walls Each End Cast-in-place concrete	Length: Width: Height: Count:		1-5 yrs Within 1 yr Urgent 4.5 1 2		
Element Group: Element Name: Location: Material: Element Type:	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame	Length: Width: Height: Count: Total Qui	antity:	1-5 yrs Within 1 yr Urgent 4.5 1 2 9		
Element Group: Element Name: Location: Material: Element Type: Environment:	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign	Length: Width: Height: Count: Total Qu Limited II	antity:	1-5 yrs Within 1 yr Urgent 4.5 1 2 9		
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign	Length: Width: Height: Count: Total Qu Limited I	antity:	1-5 yrs Within 1 yr Urgent 4.5 1 2 9		
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign	Length: Width: Height: Count: Total Qu Limited I	antity:	1-5 yrs Within 1 yr Urgent 4.5 1 2 9		
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Uni	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign s Exc Good Fair Poor	Length: Width: Height: Count: Total Qu Limited I	antity: mspection Maint. Needs None	1-5 yrs Within 1 yr Urgent 4.5 1 2 9		
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Uni	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign s Exc good Fair Poor 9	Length: Width: Height: Count: Total Qu Limited I	antity: Inspection Maint. Needs None Perform. Deficiencies None	1-5 yrs Within 1 yr Urgent 4.5 1 2 9		
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Uni Sq. Comments Inspection not possib	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign s Exc Good Fair Poor 9 e due to very small freeboard.	Length: Width: Height: Count: Total Qu Limited I	antity: Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost	1-5 yrs Within 1 yr Urgent 4.5 1 2 9		
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Uni Sq. Comments Inspection not possib	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign s Exc Good Fair Poor 9 e due to very small freeboard.	Length: Width: Height: Count: Total Qu Limited I	antity: Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost:	1-5 yrs Within 1 yr Urgent 4.5 1 2 9 9		
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Uni Sq. Comments Inspection not possib	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign s Exc Good Fair Poor 9 e due to very small freeboard.	Length: Width: Height: Count: Total Qu Limited I	antity: Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	1-5 yrs Within 1 yr Urgent 4.5 1 2 9 9 \$0.0 None		
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Uni So Comments Inspection not possib Recommended Work	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign s Exc Good Fair Poor m 9 e due to very small freeboard.	Length: Width: Height: Count: Total Qu Limited I	antity: Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	1-5 yrs Within 1 yr Urgent 4.5 1 2 9 9 \$0.0 None 6-10 yrs		
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Element Group: Element Name: .ocation: Material: Element Type: Environment: Protection System: Condition Data: Uni Sq. Comments Inspection not possib Recommended Work	Abutments Abutment walls Each End Cast-in-place concrete Legs of Rigid Frame Benign s Exc Good Fair Poor 9 e due to very small freeboard.	Length: Width: Height: Count: Total Qu Limited I	antity: Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	1-5 yrs Within 1 yr Urgent 4.5 1 2 9 9 \$0.0 None 6-10 yrs 1-5 yrs Within 1 yr		

3R1

Element Group:	Abutments				Lengi	:h:		2.6
Element Name:	Wingwalls				Width	1:		
Location:	Each quadrant				Heigh	nt:		0.8
Material:	Cast-in-place cor	ncrete			Coun	t:		4
Element Type:	Reinforced concr	ete			Total	Quantity:		8.31
Environment:	Benign				Limite	d Inspecti		
Protection System:	·····							
Condition Data: Units	Exc.	Good	Fair	Poor		Maint.	Needs	
Sa. m		8.31]	INOTIE		
Comments] [None	m. Deficiencies	
		-		_ ·		None		
						Estima	ated Construction Cost:	\$0.00
							Priority	None
Recommended Work								6-10 yrs
								1-5 yrs
								Urgent
								orgeni
Element Croup:	Approaches							
Element Name:	Approaches				Lengti	n:		3
	Feeb Fee				vviatn			5
Matarial:					Heigh	C		0.08
Flomont Tunor	Glavel				Count			2
Element Type.	Source				I otal ·	Juantity:		30
Protection System:	Severe		<u>.</u>		Limite	a inspectio	n	
Condition Date: Units						Maint.	Needs	
Condition Data: Units		Good	Fair	Poor		None		
Sq. m				L		Perfor	n. Deficiencies	
Comments						None		
						Estima	ted Construction Cost:	\$0.00
							Priority	None
Recommended Work								6-10 yrs
						7		1-5 yrs
								Within 1 yr
l								orgent
						r		
Element Group:	Barriers				Length	Ľ		0.15
Element Name:	Posts				Width:	-		0.15
Location:	Each side of bridg	e			Height	:		0.45
Material:	Steel	·			Count:			12
Element Type:	П-туре				lotal C	Juantity: [<u> </u>	12
Environment:	Benign				Limitéo	i inspectio	n []	
Protection System:	Hot olp galvanizing	9				Maint.	Needs	
Condition Data: Units	Exc	Good	Fair	Poor	_	None		
Each	12					Perform	n. Deficiencies	
Comments						None		
						Estima	ted Construction Cost:	\$0.00
							Priority	None
Recommended Work						_]		6-10 угз
						7		1-5 yrs
								Within 1 yr
								Urgent
								I



STRUCTURE	D
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BR1_

	Barrie	rs				Length:		
Element Name:	Railing	g Systems				Width:		
Location:	Appro	aches				Height:		
Material:	Steel					Count:		
Element Type:	Steel I	Flex Beam of	n steel post			Total Qu	antity:	48
Environment:	Sever	e				Limited I	nspection	
Protection System	n: Hot di	p galvanizing						
Condition Data:	Units	Exc	Good	Fair	Poor		Maint, Needs	
	m	48					Deferm Defeiencies	
Comments							None	
						-	Estimated Construction Cost	
							Estimated Construction Cost.	\$0.0
							Priority	None
Recommended W	/ork							6-10 yrs
								1-5 yrs
								Urgent
	_							orgoni
Element Group:	Decks					Length:		61
Element Name:	Soffit -	Thick Slab				Width:		4.5
Location:		Heigh				Height:		4.5
Material:	Cast-ir	n-place conci	rete			Count		1
Element Type:						Total Qua	antity:	27 44
Environment:	Beniar	1				Limited In	nspection [a]	21.77
Protection System	1:					Linitod i		
Condition Data:		Eve	Good	Fair	Poor		Maint. Needs	
Condition Data.	Sam	LAU	27.44	ran	FUUI		None	
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Not accessible du		oth					None	
	e to water dei						and the second se	
	e to water de	pun.					Estimated Construction Cost:	\$0.0
	e to water de	pın.					Estimated Construction Cost: Priority	\$0.0 None
Recommended W	e to water de ork	pm. 		_	_		Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs
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Recommended W	ork						Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Recommended W	e to water de 'ork	pm.					Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Recommended W	ork	pun.				Length:	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Recommended W	ork Decks	рин. 				Length: Width:	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4 6
Recommended W	ork Decks	op				Length: Width: Height:	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6
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Recommended W Element Group: Element Name: Location: Material: Element Type:	ork Decks Deck to Cast-in Cast-in	op -place concr	ete ete on suppo			Length: Width: Height: Count: Total Qua	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32 2
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment:	ork Decks Deck to Cast-in Cast-in Benion	op -place concr	ete ete on suppo	prts		Length: Width: Height: Count: Total Qua Limited Ir	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System	ork Decks Deck to Cast-in Cast-in Benign	op -place concr -place concr	ete ete on suppo	prts		Length: Width: Height: Count: Total Qua Limited Ir	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data:	ork Decks Deck to Cast-in Cast-in Benign	op -place concr -place concr Exc	ete ete on suppo	orts	Poor	Length: Width: Height: Count: Total Qua Limited Ir	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2
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Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data:	ork Decks Deck tr Cast-in Cast-in Benign : Jnits Sq. m	op -place concr -place concr Exc	ete ete on suppo Good 32.2	orts Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: L Comments Extensive light sea	ork Decks Deck to Cast-in Cast-in Benign : Jnits Sq. m	op -place concr -place concr Exc ridge as main	ete ete on suppo Good 32.2	orts Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: Comments Extensive light sca	e to water de fork Decks Deck to Cast-in Cast-in Cast-in Benign : Jnits Sq. m	op -place concr -place concr Exc ridge as main	ete ete on suppo Good 32.2	orts Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2 \$0.0
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: I Comments Extensive light sca	e to water de fork Decks Deck to Cast-in Cast-in Cast-in Sq. m	op op -place concr -place concr Exc ridge as main	ete ete on suppo Good 32.2	prts Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2 \$0.0 None
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: Comments Extensive light sca Recommended W	e to water de fork Decks Deck to Cast-in Cast-in Cast-in Sq. m	op -place concr -place concr Exc ridge as main	ete ete on suppo Good 32.2	orts Fair	Poor	Length: Width: Height: Count: Total Qua Limited In	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2 \$0.0 None 6-10 yrs
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: Comments Extensive light sca Recommended W	e to water de fork Decks Deck to Cast-in Cast-in Cast-in Sq. m	op -place concr -place concr Exc ridge as main	ete ete on suppo Good 32.2	orts Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2 \$0.0 None 6-10 yrs 1-5 yrs
Recommended W Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: Comments Extensive light sca Recommended W	e to water de fork Decks Deck to Cast-in Cast-in Cast-in Sq. m	op -place concr -place concr Exc ridge as main	ete ete on suppo Good 32.2]	prts Fair	Poor	Length: Width: Height: Count: Total Qua Limited In	Estimated Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 7 4.6 1 32.2 \$0.0 None 6-10 yrs 1-5 yrs Within 1 yr



ST	RUC	TURE	ID	BR1
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Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Embankments & Streams Embankments Each Quadrant Benign None Exc Good Fair Poor 1 4	Length: Width: Height: Count: Total Quantity Limited Inspect Mai Non Peri Non Esti	tion	4 4 4 5 0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Comments Recommended Work	Embankments & Streams Streams and Waterways Under Bridge Benign None Exc Good Fair Poor 100	Length: Width: Height: Count: Total Quantity Limited Inspec Mair Non Perf Non Estin	tion	1 1 1 1 5.10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments Recommended Work	Foundations Foundation (below ground level) Cast-in-place concrete Spread Benign None Exc Good Fair Poor	Length: Width: Height: Count: Total Quantity: Limited Inspec Main None Estin	tion t. Needs prm. Deficiencies hated Construction Cost: Priority	2 2 2 2 2 5 0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent

S	TF	RU	С	Τl	U	RE	ID	E	3R1	
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Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments 5 Hazard signs.	Accessories Signs Steel Benign Exc Good Fair Poor 6	Length: Width: Height: Count: Total Quantity: Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: \$0.00
Recommended Work		Priority None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Recommended Work	Sidewalks/curbs Curbs Curbs South Cast-in-place concrete Severe Exc Good Fair Poor 8.96	Length: 11.2 Width: 0.4 Height: 0.2 Count: 1 Total Quantity: 8.96 Limited Inspection 1 Maint. Needs None Perform. Deficiencies 1 None \$0.00 Priority \$0.00 Priority None Limited Construction Cost: \$0.00 Priority \$0.00 Priority Vithin 1 yr Urgent \$0.00



STRUCTURE ID BR1_

	Comments	Estimated Cost
Approaches		\$0.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other		\$0.00
Contingencies		\$0.00
	Total Estimated Const. Cost	\$0.00

Justification

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STRUCTURE NUMBER: BR1



Roadway looking West



South railing

STRUCTURE NUMBER: BR1



North railing



South railing

STRUCTURE NUMBER: BR1



North railing



South elevation

STRUCTURE ID BR2_

Structure Name	Forest Lake Road C	ulvert	
Main Hwy/Road #		n 🖌 Under 🛛	Crossing Type Non-navig water
Road Name	Forest Lake Road		
Structure Location	Forest Lake Road, w	est of Bernard Cre	scent
Latitude			Longitude
Owner(s)	Township of Strong		
Heritage Designation	Not Cons		—
Road Class:	Local		
MTO Region	Northern		
MTO District	Huntsville		Posted Speed 80 No of Lanes 2
Old County	Parry Sound		AADT 0 % Trucks 0
Geographic Twp	Township of Strong		Special Routes: Transit Truck School Bicycle
Structure Type	Frame, Inclined Legs		Detour Length Around Bridge (km)
Total Deck Length		3.6 (m)	Fill on Structure 0.3 (m)
Overall Str Width		12.4 (m)	Skew Angle 0 (Degrees)
Total Deck Area		44.64 (sq. r	Direction of Structure East/West
Roadway Width		6.8 (m)	No of Spans 1
Span Lengths	3.0		(m)
Historical Dat			
	а 	<u>.</u>	
Year Built:			Last Biennial Inspection: 11/5/2016
Current Load Limit:		(tonnes)	Last BridgeMaster Inspection:
Load Limit By-Law #			Last Evaluation:
By-Law Expiry Date			Last Underwater Inspection:
Min Vertical Clearar	ce:	(m)	Last Condition Survey:
Rehab History: (Dat	e/description)		



Field Inspection Information

STRUCTURE ID BR2

Date of Inspection:	6/26/2018 T	emperature:	21°C
Inspected By:	D.M. Wills Associates Ltd.		
Inspector:	Ghassan Zanzoul, P. Eng.		
Others in Party:	Michael McDonnell		
Equipment Used:	Camera, tape measure.		
Weather:	Sunny		

Additional Investigations Required

	Priority	Estimated Cost
Detailed Deck Condition Survey:		
DART Survey		
Detailed Coating Condition Survey:		
Underwater Investigation:		
Fatigue Investigation:		
Seismic Investigation:		
Structure Evaluation:		
Load Posting:Estimated Load	Total Cost	
Next Date Inspection:	6/26/2020	

66.79 BCI

Special Notes:

Suspected Performance Deficiencies

- 00 None
- 01
- Load carrying capacity Excessive deformations (deflections rotations) 02
- Continuing settlement 03
- Continuing movements 04
- 05 Seized bearings

Maintenance Needs

- 01 Lift and Swing Bridge Maintenance
- 02
- Bridge Cleaning Bridge Handrail Maintenance 03
- 04 Painting Steel Bridge Structures
- Bridge Deck Joint Repair Bridge Bearing Maintenance 05
- 06

- 06 Bearing not uniformly loaded/unstable
- 07 Jammed expansion joint
- Pedestrian/vehicular hazard 08
- 09 Rough riding surface
- 10 Surface ponding
- 11 Deck drainage
- 07 Repair to Structural Steel
- 08 Repair of Bridge Concrete
- 09 Repair of Bridge Timber
- 10 Bailey Bridges Maintenance
- Animal/Pest Control 11
- 12 Bridge Surface Repair

- 12 Slippery surfaces
- Flooding/channel blockage 13
- 14 Undermining of foundation
- 15 Unstable embankments
- Other 16
- 13 Erosion Control at Bridges
- 14 Concrete Sealing
- 15 Rout and Seal
- 16 Bridge deck Drainage 17 Other



STRUCTURE ID BR2_

ce Good Fair Poor 81.6	Length: Width: Height: Count: Total Quantity: Limited Inspection Maint. Ne None Perform. None	Deficiencies	6 6.8 0.08 2 81.6
	Estimated	J Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
t Walls concrete /ithout railing Good Fair Poor 4.67	Length: Width: Height: Count: Total Quantity: Limited Inspection Maint. Ne None Perform. None Estimated	Deficiencies I Construction Cost: Priority	3.6 1.3 1 4.67 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Walls Oncrete Athout railing Good Fair Poor 4.67 Ing system is insufficient.	Length: Width: Height: Count: Total Quantity: Limited Inspection Maint. New None Perform. I Pedestriaa Estimated	Deficiencies n/vehicular hazard	3.6 1.3 1 4.67 \$20,000.00
	Good Fair Pool Good Fair Pool 81.6 State State t Walls State Good Fair Poor der South barrier wall. State t Walls State Good Fair Poor der South barrier wall. State Good Fair Poor der Good Fair Poor der South barrier wall. State State ithout railing State State State Good Fair Poor State State iing system is insufficient. State State State State	ce Length: Width: Height: Count: Total Quantity: Limited Inspection Maint. Ne None B1.6 Width: Height: Count: Count: Width: Height: Count: None Estimated width: Height: Count: Total Quantity: Length: Width: Width: Height: Count: Total Quantity: Limited Inspection Maint. Ne Soncrete None A67 Perform. Mone Perform. Vone Estimated der South barrier wall. Length: Walls Length: Width: Height: Count: Total Quantity: Limited Inspection Maint. Ne None Estimated Good Fair Poor Good Fair Poor Good Fair Poor Good Fair Poor	ce Length: Width: Height: Count: Total Quantity: Limited Inspection [] Maint. Needs Sood Fair Poor 81.6 None Estimated Construction Cost: Priority Priority ttWalls Length: Width: concrete Mone Estimated Construction Cost: Order Priority Priority Limited Inspection [] Maint. Needs None Sood Fair Poor Maint. Needs Mone Estimated Construction Cost: Priority Utilited Inspection [] Maint. Needs None Sood Fair Poor Maint. Needs None Estimated Construction Cost: Priority Itwalls Utilited Inspection [] Maint. Needs None Estimated Construction Cost: Priority Itwalls Utilited Inspection [] Maint. Needs None Estimated Construction Cost: Priority Imited Inspection [] Maint. Needs None Good Fair Poor

STRUCTURE ID	BR2
	-

Element Group:	Culverts	Length:		12.4
Element Name:	Barrels	Width:		3.1
Location:		Height:		1.4
Material:	Cast-in-place concrete	Count:		1
Element Type:	Frames - Articulated	Total Qu	lantity:	73.16
Environment:	Benign	Limited	Inspection	
Protection System:		1	Maint Needs	
Condition Data: Units	Exc Good Fair Poor		None	
Sq. m	64.16 4.5	4.5	Perform, Deficiencies	
Comments			None	
Concrete disintegration	on east wall. Spall and exposed reinforcement on so	offit. Top of	Estimated Construction Cost:	\$150.000.00
Tootings are exposed. S	severe erosion and undermining of West wall.		Priority	None
Recommended Work			Thoney	6-10 vrs
Replace with new conc	rete box culvert			1-5 yrs
				Within 1 yr
				Urgent
L				·
Element Group:	Culverts	Length:		1.7
Element Name:	Inlet Components	Width:		
Location:	East	Height:		1
Material:	Cast-in-place concrete	Count:		2
Element Type:	Retained soil systems	Total Qu	antity:	3.4
Environment:	Benign	Limited I	nspection	
Protection System:			Maint. Needs	
Condition Data: Units	Exc Good Fair Poor		None	
<u>ISq. m</u>		0.5	Perform. Deficiencies	
Comments	lized anallo		None	
Severe scaling and loca	inzeo spans.		Estimated Construction Cost:	\$10,000.00
			Priority	None
Recommended Work		/		6-10 yrs
Install new cutoff wall.				1-5 yrs
				Urgent
Element Group:	Culverte	Longth		4 77
Element Name:	Outlet Components	Lengun. Width:	· · · · · · · · · · · · · · · · · · ·	1.7
Location:	West End	Viluti. Height		
Material:	Cast-in-place concrete	Count:		
Element Type:	Retained soil systems	Total Qua	antity:	34
Environment:	Benjan	Limited Ir	nspection	
Protection System:				
Condition Data: Units	Exc Good Fair Poor		Maint. Needs	<u> </u>
Sq. m		0.3	Porform Definionaion	_]
Comments		i	None	— <u>—</u>
Severe to medium scalir	ng noted. Minor separation at construction joint. Seve	ere erosion and	Estimated Construction Cost:	\$10,000,00
severe undermining at S	outhwest wingwall.			φ10,000.00 []
<u> </u>			Priority	None
Recommended Work	· ····································	-		1-5 vrs
Inistall new cutoff wall.				Within 1 yr
				Urgent
L				



	BD2
STRUCTURE ID	DRZ-

Element Group:	Decks	Length:		3.6	
Element Name: Wearing surface W		Width:		6.8	
Location:		Height:		0.09	
Material:	Asphalt	Count:		1	
Element Type:		Total Quar	ntity:	24.47	
Environment:	Severe	Limited Ins	spection		
Protection System:			Maint Needs		
Condition Data: Unit	Exc Good Fair Poor	ĺ.	None		
Sq.	n 24.47		Perform. Deficiencies		
Comments			None		
Extensive raveling and	medium cracks.	Ĩ	Estimated Construction Cost:	\$20,000.00	
			Priority	None	
Pocommondod Work			Flidity	6-10 vrs	
Recommended work				1-5 yrs	
Replace with curven.				Within 1 yr	
				Urgent	
Element Group:	Embankments & Streams	Length:			
Element Name:	Embankments	Width:			
Location:	All	Height:			
Material:		Count:		4	
Flement Type		Total Quar	stitur	4	
Environment:	Benjan	Limited Inc	nection	4	
Protection System:	None	Linited ins			
Condition Data: Unit	Eva Caad Fair Deer	ĥ	Maint. Needs		
condition Data: Units Exc Good Fair Poor			None		
			Perform. Deficiencies		
Commonte		ł	Perform. Deficiencies		
Comments			Vone		
Comments Washout noted at NW	corner.	۲ ۱ ۱	Serform. Deficiencies None Estimated Construction Cost:	\$0.00	
Comments Washout noted at NW	comer.	[Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None	
Comments Washout noted at NW Recommended Work	corner.	E	Seriorm. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs	
Comments Washout noted at NW Recommended Work	corner.	E	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs	
Comments Washout noted at NW Recommended Work	comer.	E	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr	
Comments Washout noted at NW Recommended Work	comer.	E	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent	
Comments Washout noted at NW Recommended Work	corner.	Length:	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent	
Comments Washout noted at NW Recommended Work Element Group: Element Name:	corner.	Length: Width:	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location:	Corner.	Length: Width: Height:	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material:	Corner.	Length: Width: Height: Count:	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type:	corner. Embankments & Streams Streams and Waterways Under Bridge	Length: Width: Height: Count: Total Quan	Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment:	Corner.	Length: Width: Height: Count: Total Quan Limited Ins	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1 1	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	corner. Embankments & Streams Streams and Waterways Under Bridge Benign None	Length: Width: Height: Count: Total Quan Limited Ins	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1 1	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	corner. Embankments & Streams Streams and Waterways Under Bridge Benign None Exc Good Fair Poor	Length: Width: Height: Count: Total Quan Limited Ins	Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Element Type: Environment: Protection System: Condition Data: Units	Corner.	Length: Width: Height: Count: Total Quan Limited Ins	Action Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1 1	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Eact Comments	Corner.	Length: Width: Height: Count: Total Quan Limited Ins	Perform. Deficiencies None Estimated Construction Cost: Priority Itity: Pection Anint. Needs None Perform. Deficiencies None	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Eact Comments	Corner.	Length: Width: Height: Count: Total Quan Limited Ins	Perform. Deficiencies None Estimated Construction Cost: Priority tity: pection Anint. Needs None Perform. Deficiencies None Estimated Construction Cost:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1 1	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Eact Comments	Corner.	Length: Width: Height: Count: Total Quan Limited Ins	Perform. Deficiencies None Estimated Construction Cost: Priority tity: pection Adaint. Needs None Perform. Deficiencies None Estimated Construction Cost:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1 1 1 50.00	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Eact Comments	corner. Embankments & Streams Streams and Waterways Under Bridge Benign None Exc Good Fair Poor 1	Length: Width: Height: Count: Total Quan Limited Ins N F E	Perform. Deficiencies None Estimated Construction Cost: Priority tity: pection Aaint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1 1 1 50.00 None 6 10 yrs	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Comments Recommended Work	corner. Embankments & Streams Streams and Waterways Under Bridge Benign None Exc Good Fair Poor 1 1	Length: Width: Height: Count: Total Quan Limited Ins	Perform. Deficiencies None Estimated Construction Cost: Priority tity: pection Aaint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1 1 1 50.00 None 6-10 yrs 1-5 yrs	
Comments Washout noted at NW Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Eact Comments	Corner.	Length: Width: Height: Count: Total Quan Limited Ins	Action Deficiencies None Estimated Construction Cost: Priority Intity: pection Aaint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 1 1 1 50.00 None 6-10 yrs 1-5 yrs Within 1 yr	



STRUCTURE ID BR2

Repair and Rehabilitation Required					
Element Group	Element Name	Comments Repair/Rehabilitation	Priority (Years)	Estimated Cost	
Decks	Wearing surface	Replace with culvert.	1-5 yrs	\$20,000.00	
Culverts	Outlet Components	Install new cutoff wall.	1-5 yrs	\$10,000.00	
Culverts	Inlet Components	Install new cutoff wall.	1-5 yrs	\$10,000.00	
Culverts	Barrels	Replace with new concrete box culvert.	1-5 yrs	\$150,000.00	
Barriers	Barrier/Parapet Walls	Install steel beam guide rail.	1-5 yrs	\$20,000.00	
			Total	\$210,000.00	

Associated Work

	Comments	Estimated Cost
Approaches		\$0.00
Detours		\$0.00
Traffic Control		\$5,000.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other	Engineering and Contract Admin.	\$20,000.00
Contingencies	10%	\$21,000.00

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STRUCTURE NUMBER: BR2



Roadway looking East



North barrier wall

STRUCTURE NUMBER: BR2



South barrier wall



Spall at Northeast

STRUCTURE NUMBER: BR2



Cracks on wearing surface



Barrel looking South

STRUCTURE NUMBER: BR2



Spall at soffit



Concrete disintegration of abutment wall

STRUCTURE NUMBER: BR2



Concrete disintegration of abutment wall



Inlet

STRUCTURE NUMBER: BR2



Severe undermining and scouring at Southwest wing wall



Severe spall at soffit (South end)
STRUCTURE NUMBER: BR2



Outlet (South end)

D.M. Wills Associates Ltd.

STRUCTURE ID BR3_

Inventory Data	ta
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Main Hwy/Road # Road Name Brookside Roa Structure Location Brookside Roa Latitude	On Vinder C	Crossing Type Non-navig water
Road Name Brookside Roa Structure Location Brookside Roa Latitude Image: Structure Location Owner(s) Township of Si Heritage Designation Not Cons Road Class: Local MTO Region Northern MTO District Huntsville Old County Parry Sound Geographic Twp Township of Si Structure Type I-beam or Gird	Id Id, 650 east of Rodeo Road	Longitude
Structure Location Brookside Roa Latitude	trong	Longitude
Latitude Owner(s) Township of Si Heritage Designation Not Cons Road Class: Local MTO Region MTO District Huntsville Old County Parry Sound Geographic Twp Township of Si Structure Type I-beam or Gird Total Deck Length		Longitude
Owner(s) Township of Si Heritage Designation Not Cons Road Class: Local MTO Region Northern MTO District Huntsville Old County Parry Sound Geographic Twp Township of Si Structure Type I-beam or Gird		Posted Speed 80 No of Lanes 1
Heritage Designation Not Cons Road Class: Local MTO Region Northern MTO District Huntsville Old County Parry Sound Geographic Twp Township of Si Structure Type I-beam or Gird		Posted Speed 80 No of Lanes 1
Road Class: Local MTO Region Northern MTO District Huntsville Old County Parry Sound Geographic Twp Township of SI Structure Type I-beam or Gird		Posted Speed 80 No of Lanes 1
MTO Region Northern MTO District Huntsville Old County Parry Sound Geographic Twp Township of Si Structure Type I-beam or Gird Total Deck Length		Posted Speed 80 No of Lanes 1
MTO District Huntsville Old County Parry Sound Geographic Twp Township of Si Structure Type I-beam or Gird Total Deck Length		Posted Speed 80 No of Lanes 1
Old County Parry Sound Geographic Twp Township of S Structure Type I-beam or Gird Total Deck Length		
Geographic Twp Township of Si Structure Type I-beam or Gird Total Deck Length		AADT 0 % Trucks 0
Structure Type I-beam or Gird	irong	Special Routes: Transit 🗌 Truck 🗌 School 🗌 Bicycle 🗌
Total Deck Length	ers	Detour Length Around Bridge (km)
	12.3 (m)	Fill on Structure 0 (m)
Overall Str Width	4.7 (m)	Skew Angle 0 (Degrees)
Total Deck Area	57.81 (sq. m)	Direction of Structure East/West
Roadway Width	5.1 (m)	No of Spans 1
Span Lengths 9.3		(m)

Historical Data				
Year Built:]	Last Biennial Inspection:	11/5/2016
Current Load Limit:	20	(tonnes)	Last BridgeMaster Inspection:	
Load Limit By-Law #:]	Last Evaluation:	
By-Law Expiry Date:]	Last Underwater Inspection:	
Min Vertical Clearance:	1	(m)	Last Condition Survey:	[]
Rehab History: (Date/des	scription)			



Field Inspection Information

Date of Inspection	: 6/26/2018	Temperature:	21 ° C
Inspected By:	D.M. Wills Associates Ltd.		
Inspector:	Ghassan Zanzoul, P. Eng.		
Others in Party:	Michael McDonnell		
Equipment Used:	Camera, tape measure.		
Weather:	Sunny		

Additional Investigations Required

	Priority	Estimated Cost
Detailed Deck Condition Survey:		
DART Survey		
Detailed Coating Condition Survey:		
Underwater Investigation:		
Fatigue Investigation:		
Seismic Investigation:		
Structure Evaluation:	[]	
Load Posting:Estimated Load	Total Cost	
Next Date Inspection:	6/26/2020	

72.78 BCI

Special Notes:

Suspected Performance Deficiencies

- 00 None
- 01
- Load carrying capacity Excessive deformations (deflections rotations) 02
- Continuing settlement 03
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

- Lift and Swing Bridge Maintenance 01
- 02 Bridge Cleaning
- Bridge Handrail Maintenance 03
- 04 Painting Steel Bridge Structures
- 05 Bridge Deck Joint Repair
- Bridge Bearing Maintenance 06

- 06 Bearing not uniformly loaded/unstable
- Jammed expansion joint Pedestrian/vehicular hazard 07
- 08
- Rough riding surface 09 10 Surface ponding
- Deck drainage 11
- Repair to Structural Steel 07
- 08 Repair of Bridge Concrete
- 09 Repair of Bridge Timber
- 10 Bailey Bridges - Maintenance
- 11 Animal/Pest Control
- 12 Bridge Surface Repair

- Slippery surfaces
 Flooding/channel blockage
 Undermining of foundation
 Unstable embankments
- Other 16
- 13 Erosion Control at Bridges
- 14 Concrete Sealing
- 15 Rout and Seal
- 16 Bridge deck Drainage
- 17 Other

WILLS

STRUCTURE ID BR3_

Element Data	a									
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data:	Appr Wea Each Grav Seve Units Sq. m	oaches ring surface End el re Exc	Good 57.19	Fair 2]	Poor	2	Length: Width: Height: Count: Total Qu Limited	antity: Inspectior Maint. N Erosion Perform	Needs Control at Bridges	6 5.1 2 61.19
Comments								None		
Recommended W Reinstate sections	/ork s of roadway	y and emba	nkments as ma	intenance.				Estimat	ed Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs Within 1 yr
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data:	Abuti Abuti Each Wood Crib o Benig Pene Units Sq. m	ments nent walls End d or gabion jn trant applie Exc	d Good 9	Fair	Poor		Length: Width: Height: Count: Total Qu Limited I	antity: nspection Maint. N None Perform	Needs ■ Deficiencies	5 0.9 2 9
Recommended W Remove old struct	fork lure and rec	onstruct ab	utments.					Estimat	ed Construction Cost: Priority	\$150,000.0 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: I Comments	Barrie Posts Wood Benig Pene Units Each	n Itrant applied Exc	Good 7	Fair 1]	Poor	6	Length: Width: Height: Count: Total Qu Limited I	antity: nspection Maint. N Bridge H Perform None	leeds Handrail Maintenance	0.2 0.2 14 14
Splitting and collis	ion damage	noted. 6 pc	sts damaged o	n south side	э.			Estimate	ad Construction Cost:	0.02
Recommended W Replacement of po	ork osts and rail	ing urgently	needed as mai	ntenance.				Loundu	Priority	None 6-10 yrs 1-5 yrs Within 1 yr Urgent

BR3_

(· · · · · · · · · · · · · · · · · · ·					
Element Group:	Barriers				Le	ength:			12.5	
Element Name:	Railing Systems				N	vidth:				
Location:					Н	leight:				
Material:	Steel				С	ount:			2	
Element Type:	Steel Flex Beam	on wood post			Te	otal Qua	intity:		25	
Environment:	Benign				Li	Imited In	spectio	n []	,	
Protection System:	Hot dip galvanizir	ng					Maint	Needs		
Condition Data: Units	Exc	Good	Fair	Poor			Bridge	Handrail Maintenance	· · · · ·	
m -		25			7		Perfor	n Deficiencies]
Comments		·		·			None			
Collision damage noted	l						Estima	ted Construction Cost:		\$0.00
								Priority	None	<u> </u>
Pacammanded Work								·	6-10 yrs	
Recommended work	ions of railing as m								1-5 yrs	
Inteplace damaged sect	iona or raining as n	antenance.							Within 1	yr
									Urgent	
L										
Element Group:	Beams/MLE's				Le	ength:	ĺ		12.3	
Element Name:	Girders				W	/idth:			0.19	
Location:					H	eight:			0.46	
Material:	Steel				C	ount:			8	
Element Type:	I-type				To	otal Qua	ntity:		146.61	
Environment:	Benign	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	2012		Li	mited In	spectio	n 🔽		
Protection System:	Epoxy zinc/acrylic	c/acrylic					Maint.	Needs		
Condition Data: Units	Exc	Good	Fair	Poor			None			
Sq. m		136.61	10	iŁ			Perform	n. Deficiencies		
Comments		· • •					None			
Medium corrosion of po	ttom flanges of exit below new bridge	terior beams. I	Limited insp	pection au	le to the		Estima	ted Construction Cost:		\$0.00
Existence of ore bridge .	Joion non Ender.							Priority	None	
Recommended Work									6-10 yrs	
									1-5 yrs	·
									Urgent	yi I
	Daama Ibdi Ela		•						47	
Element Group:	Beams/MLE's				Le	angun: Katto	-	•	4.7	
Legention:	Stingers				** Hi	dum. Siabti	ŀ		0.05	
Matarial:	Rtaal				C	ount:	ŀ			
Flement Type	Channel				Te	stal Qua	ntity:		50	
Environment:	Benian				Lir	mited In:	soectio	n []		
Protection System:	Fnoxy zinc/acrylic	c/acrvlic				1000-000				
Condition Data: Units	Exc	Good	Fair	Poor		!	Maint.	Needs		
Each		50		1001		ł	None	m.n.tt		
Comments						ſ	Perforn None	n. Deficiencies]
Limited inspection due t	o previous bridge :	structure being	o present.				Taliana	ad Canalautian Cast		FO 00
	o promote anoga	0000000000000	g processes				Estima	ted Construction Cost.		\$0.00
								Priority	None	
Recommended Work									10-10 yrs	
									Within 1	vr
									Urgent	<i>.</i>
									Ľ	

STRUCTURE ID BR3_

Element Group: Element Name:	C S	Coatings Structural Steel				Length: Width:					
Location:	-					Height:					
Flement Type	E	now zinc/acodi	lacoulic			Total Ou	iantity:	1			
Environment:		enion	orderyne	-		Limited I					
Protection Syster	m:	i i i i i i i i i i i i i i i i i i i									
Condition Data:	Units	Exc	Good	Fair	Poor		Maint. Needs				
o on one of the state	So. m						Dorferm Definionaica				
Comments	(None				
Limited inspectio coating at abutme	n due to ents.	previous bridge	structure bein	g present. C	Corrosion and j	pitting of	Estimated Construction Cost: Priority	\$0.00 None			
Recommended V	Vork							6-10 yrs 1-5 yrs Within 1 yr Urgent			
Element Group:		ecks				Length:		9.3			
Liement Name:	S	omit - Thin Slab				Width:		4.7			
Material:	9	teel				Count:		1			
Element Type						Total Ou	Total Quantity: 43.7				
Environment:	E	lenian	1.00			Limited I	nspection	10.7			
Protection Syster	n: H	lot dip galvanizir	a								
Condition Data	Units	Fxc	Good	Fair	Poor		Maint. Needs				
o on on on o didi	Sa. m		43.7				Deferm Deficiencies				
Comments][None				
Not visible. Bridg	e over br	idge.					Estimated Construction Cost:	00.02			
0		0					Estimated Construction Cost.	\$0.00			
				_			Priority	None 6 10 yrs			
Recommended V	Vork							1-5 yrs Within 1 yr Urgent			
Element Group:	D	ecks				Length:		12.3			
Element Name:	D	eck top				Width:		4.7			
Location:	F					Height:		0.01			
Material:	S	teel				Count:		1			
Element Type:	S	teel Plate - com	posite			Total Qu	antity:	57.8			
Environment:	В	enign				Limited I	nspection				
Protection Syster	n: H	lot dip galvanizir	g				Maint, Needs				
Condition Data:	Units	Exc	Good	Fair	Poor		Bridge Cleaning				
	Sq. m		57.8				Perform. Deficiencies				
Comments							None				
Debris build up or	n deck to	p.					Estimated Construction Cost:	\$0.00			
							Priority	None			
Recommended W	Vork							6-10 yrs			
Clean debris off o	ieck top :	as maintenance.						1-5 yrs Within 1 yr			



STRUCTUR	RE ID	BR3

Element Group:	Embankments & Streams	Length:		
Element Name:	Embankments	Width:		
Location:	Each Quadrant	Height:		
Material:		Count:		4
Element Type:		Total Q	uantity:	4
Environment:	Benign	Limited	Inspection	
Protection System:	None		Maint. Needs	
Condition Data: Units	Exc Good Fair Poor		Erosion Control at Bridges	
Each		4	Perform. Deficiencies	
Comments			None	
All quadrants have hear	vy erosion of granular material.		Estimated Construction Cost:	\$25,000.00
			Priority	None
Recommended Work]	6-10 yrs
Reconstruct with new a	butments.]	1-5 yrs
				Within 1 yr
				Urgent
Element Group:	Embankments & Streams	Length:		
Element Name:	Streams and Waterways	Width:	·····	
Location:	Under Bridge	Height:		
Material:		Count:		1
Element Type:		Total Qu		1
Environment:	Benign	Limited		
Protection System:	None		Maint. Needs	
Condition Data: Units	Exc Good Fair Poor		None	
Each			Perform. Deficiencies	
Comments			None	
			Estimated Construction Cost:	\$0.00
			Priority	None
Recommended Work			1	6-10 yrs
				1-5 yrs Within 1 yr
				Urgent
Element Group:	Accessories	Longth:		
Element Name	Sions	. Lengui. Width		
Location:		Height:		
Material:	Steel	Count:		7
Element Type:		Total Qu	uantity:	7
Environment:	Benian	Limited	Inspection	
Protection System:				
Condition Data: Units	Exc Good Fair Poor		Other	
Each	7		Perform Deficiencies	
Comments]	None	
4 Hazard signs.			Estimated Construction Cost:	\$0.00
1 Load limit at West app	proach.		nut-the	
2 One lane signs.			Priority	6-10 vrs
Recommended Work	alian at Cast an analysis and a state of the	· · · · · · · · · · · · · · · · · · ·		1-5 yrs
linstali missing load limit	sign at East approach as maintenance.			Within 1 yr
				Urgent
L				L

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STRUCTURE ID BR3_

Repair and Rehabilitation Required									
Element Group	Element Name	Comments Repair/Rehabilitation	Priority (Years)	Estimated Cost					
Embankments & Streams	Embankments	Reconstruct with new abutments.	1-5 yrs	\$25,000.00					
Abutments	Abutment walls	Remove old structure and reconstruct abutments.	1-5 yrs	\$150,000.00					
			Total	\$175,000.00					

Associated Work

.

Approaches		
••		\$0.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other	Engineering and Contract Admin.	\$20,000.00
Contingencies		\$0.00

Justification

STRUCTURE NUMBER: BR3



Roadway looking East



Severely damaged South railing

STRUCTURE NUMBER: BR3



North railing



Debris on deck

STRUCTURE NUMBER: BR3



South railing – damaged posts



South railing - damaged posts

SITE PHOTOGRAPHS

STRUCTURE NUMBER: BR3

South elevation



West abutment

STRUCTURE NUMBER: BR3



West abutment



Corrosion of bottom flange

STRUCTURE NUMBER: BR3



Flaking of exterior girder



Localized severe erosion of the embankment and loss of material at Northwest

STRUCTURE NUMBER: BR3



Localized severe erosion of the embankment and loss of material at Northeast

STRUCTURE ID BR4_

Structure Name	Robins Rd. Bridge		
Main Hwy/Road #	On	Vnder	Crossing Type Non-navig water
Road Name	Robins Road		
Structure Location	Robins Road, East of I	lighway 11	
Latitude			Longitude
Owner(s)	Township of Strong		
Heritage Designatio	n Not Cons]	
Road Class:	Local]	
MTO Region	Northern]	
MTO District	Huntsville]	Posted Speed 80 No of Lanes 2
Old County	Parry Sound]	AADT 0 % Trucks 0
Geographic Twp	Township of Strong		Special Routes: Transit 🗌 Truck 🗌 School 🔲 Bicycle 🗋
Structure Type	I-beam or Girders		Detour Length Around Bridge (km)
Total Deck Length		21.8 (m)	Fill on Structure 0 (m)
Overall Str Width		11.5 (m)	Skew Angle 0 (Degrees)
Total Deck Area		250.7 (sq. m)	Direction of Structure East/West
Roadway Width		10 (m)	No of Spans 1
Span Lengths	20.0		(m)
Historical Da	ata		
Year Built:			Last Biennial Inspection: 11/5/2016
Current Load Limi	t:	(tonnes)	Last BridgeMaster Inspection:
Load Limit By-Lav	v #:		Last Evaluation:
	te:		Last Underwater Inspection:
By-Law Expiry Da			
By-Law Expiry Da Min Vertical Clear	ance:	(m)	Last Condition Survey:
By-Law Expiry Da Min Vertical Clear Rehab History: (D	ance:ate/description)	(m)	Last Condition Survey:

Field Inspection Information

Date of Inspection	6/26/2018	Temperature:	21 ° C
Inspected By:	D.M. Wills Associates Ltd.		
Inspector:	Ghassan Zanzoul, P. Eng.		
Others in Party:	Michael McDonnell		
Equipment Used:	Camera, tape measure.		
Weather:	Sunny		

Additional Investigations Required

	Driasit			
	Priorit	ý	Estimated Cost	
Detailed Deck Condition Survey:				
DART Survey				
Detailed Coating Condition Survey:				
Underwater Investigation:				
Fatigue Investigation:				
Seismic Investigation:				
Structure Evaluation:				
Load Posting:Estimated Load		Total Cost		
Next Date Inspection:	[6/26/2020		
BCI 75				
Special Notes:				
				1
Suspected Performance Deficiencies				
None	06	Bearing not uniformly loade	d/unstable 1	2 Slipperv surfaces
01 Load carrying capacity	07	Jammed expansion joint	1: 1:	3 Flooding/channel blockage
2 Excessive deformations (deflections rotations) 3 Continuing settlement	08 09	Pedestrian/vehicular hazard Rough riding surface	d 1. 1:	4 Undermining of foundation 5 Unstable embankments

- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

- 01 Lift and Swing Bridge Maintenance
- 02
- Bridge Cleaning Bridge Handrail Maintenance 03
- 04 Painting Steel Bridge Structures
- 05 Bridge Deck Joint Repair 06
- Bridge Bearing Maintenance

- 10 Surface ponding
- 11 Deck drainage
- 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

- 16 Other
- 13 Erosion Control at Bridges
- Concrete Sealing 14
- 15 Rout and Seal
- 16 Bridge deck Drainage
- 17 Other

STRUCTURE ID BR4	RUCTURE ID	BR4
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Element Data							
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit Eac Comments Minor loss of contact a	Abutments Bearings Elastomeric pad Benign None s Exc h [] at Northeast, Southea	Good 8	Fair	Poor west bearings.	Length: Width: Height: Count: Total Qu Limited	Antity:	0.35 0.45 0.04 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Recommended Work							1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit Sg. Comments Vertical isolated hairlin Recommended Work	Abutments Abutment walls Each End Cast-in-place cond Conventional close Benign s Exc m []	Good 45.59	Fair	Poor	Length: Width: Height: Count: Total Qu Limited	Jantity:	11.4 2 2 45.59 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit Sq. Comments Recommended Work	Abutments Wingwalls Cast-in-place conc Reinforced concre Benign s Exc m [Good 21.83	Fair	Poor	Length: Width: Height: Count: Total Qu Limited	uantity: Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	4.2 1.3 4 21.83 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr



STRUCTU	JRE ID	BR4
		-

Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Barriers Posts Steel Severe Hot dip galvanizing Exc Goo	d Fair P 38	Leng Widt Heig Cour Tota Limit	th: h: ht: I Quantity: ed Inspection None Perfor None Estima	n Deficiencies	0.15 0.15 0.625 38 38 38 38 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units M Comments Recommended Work	Barriers Railing Systems Steel Steel Post >108 mm & 1 r Severe Hot dip galvanizing Exc Good	rect. & 1 sq. tube	Leng Widt Heig Cour Total Limit	th: n: Quantity: ed Inspectic <u>Maint.</u> <u>None</u> <u>Perforr</u> <u>None</u> Estima	n Needs n. Deficiencies ted Construction Cost: Priority	1.87 0.62 36 67.31 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Recommended Work	Beams/MLE's Girders Precast concrete I-type Benign Exc Good 282.	 Fair Po 33	Leng Width Heigh Coun Total Limite	h: i: Quantity: ed Inspectio <u>Maint, I</u> None <u>Perform</u> None Estimat	n Deficiencies	17.3 0.56 1.2 4 282.33 282.33 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent

STRUCTURE ID

BR4_

Element Group:	Decks				Length:			19.3
Element Name:	Soffit - Thin Slab		Interior		Width:			1.85
Location:					Height:			
Material:	Cast-in-place con	crete			Count:			3
Element Type:					Total Qu	antity:		107.12
Environment:	Benign				Limited I	nspection		
Protection System:						Maint Ne	eds	
Condition Data: Unit	s Exc	Good	Fair	Poor		None		
Sq.	m	107.12				Perform.	Deficiencies	
Comments						None		
						Estimate	d Construction Cost:	\$0.
							Priority	None
Parammandad Mark							1 Honey	6-10 yrs
recommended work					1			1-5 yrs
								Within 1 yr
								Urgent
								1
lement Group:	Decks				Length:			21.8
ement Name:	Wearing surface				Width:			10
ocation:					Height:			0.09
laterial:	Asphalt				Count:			1
lement Type:					Total Qu	antity:		218
invironment:	Severe				Limited I	nspection		
Protection System:						Maint Ne	eds	
Condition Data: Unit:	s Exc	Good	Fair	Poor		Bridge Cl	leaning	
Sq. i	m	218				Perform.	Deficiencies	
Comments						None		
						Tiono		
Sand along North. Cle	an as maintenance.					Estimate	d Construction Cost:	\$0.9
Sand along North. Cle	an as maintenance.					Estimate	d Construction Cost: Priority	\$0.
Sand along North. Cle	an as maintenance,					Estimate	d Construction Cost: Priority	\$0.1 None 6-10 yrs
Sand along North. Cle Recommended Work	an as maintenance,					Estimate	d Construction Cost: Priority	\$0.0 None 6-10 yrs 1-5 yrs
Sand along North. Cle Recommended Work	an as maintenance.					Estimate	d Construction Cost: Priority	\$0. None 6-10 yrs 1-5 yrs Within 1 yr
Sand along North. Cle Recommended Work	an as maintenance.					Estimate	d Construction Cost: Priority	\$0. None 6-10 yrs 1-5 yrs Within 1 yr Urgent
and along North. Cle	an as maintenance,					Estimate	d Construction Cost: Priority	\$0. None 6-10 yrs 1-5 yrs Within 1 yr Urgent
and along North. Cle ecommended Work	an as maintenance,				Length:	Estimate	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
and along North. Cle ecommended Work lement Group: lement Name:	an as maintenance, Decks Soffit - Thin Slab		Exterior		Length: Width:	Estimate	d Construction Cost: Priority	\$0.1 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85
and along North. Cle Recommended Work	an as maintenance. Decks Soffit - Thin Stab		Exterior		Length: Width: Height:	Estimate	d Construction Cost: Priority	\$0. None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85
Recommended Work	an as maintenance. Decks Soffit - Thin Slab Cast-in-place con	crete	Exterior		Length: Width: Height: Count:	Estimate	d Construction Cost: Priority	\$0. None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2
Recommended Work Recommended Work Rement Group: Rement Name: ocation: Material: Rement Type:	an as maintenance, Decks Soffit - Thin Stab Cast-in-place con	crete	Exterior		Length: Width: Height: Count: Total Qu	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41
and along North. Cle Recommended Work lement Group: lement Name: ocation: laterial: lement Type: invironment:	an as maintenance, Decks Soffit - Thin Stab Cast-in-place con Moderate	crete	Exterior		Length: Width: Height: Count: Total Qu Limited I	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41
and along North. Cle Recommended Work lement Group: lement Name: ocation: laterial: lement Type: invironment: rotection System:	an as maintenance, Decks Soffit - Thin Slab Cast-in-place con Moderate	crete	Exterior		Length: Width: Height: Count: Total Qu Limited In	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41
and along North. Cle Recommended Work lement Group: lement Name: ocation; laterial: lement Type: invironment: rotection System: condition Data: Units	an as maintenance, Decks Soffit - Thin Slab Cast-in-place con Moderate	crete	Exterior	Poor	Length: Width: Height: Count: Total Qu Limited In	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41
and along North. Cle ecommended Work lement Group: lement Name: ocation: laterial: lement Type: nvironment: rotection System: ondition Data: Units Sq. 1	an as maintenance, Decks Soffit - Thin Slab Cast-in-place con Moderate s Exc n	crete Good 71.41	Exterior Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41
and along North. Cle ecommended Work lement Group: lement Name: ocation: laterial: lement Type: nvironment: rotection System: ondition Data: Units Sq. 1 omments	an as maintenance, Decks Soffit - Thin Slab Cast-in-place con Moderate	crete Good 71.41	Exterior Fair	Poor	Length: Width: Height: Count: Total Qu Limited In	antity: Maint. Ne None Perform. None	d Construction Cost: Priority	\$0. None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41
Cand along North. Cle Recommended Work Element Group: Element Name: ocation: Material: Element Type: Environment: Protection System: Condition Data: Units Comments	an as maintenance, Decks Soffit - Thin Stab Cast-in-place con Moderate	crete Good 71.41	Exterior Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	antity: Maint. Ne None Perform. None Estimated	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41 \$0.4
and along North. Cle ecommended Work lement Group: lement Name: ocation: laterial: lement Type: nvironment: rotection System: condition Data: Units Sq. r	an as maintenance, Decks Soffit - Thin Stab Cast-in-place con Moderate	crete Good 71.41	Exterior Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41 \$0.1 None
and along North. Cle ecommended Work lement Group: lement Name: ocation: laterial: lement Type: invironment: rotection System: ondition Data: Units comments	an as maintenance, Decks Soffit - Thin Slab Cast-in-place con Moderate	crete Good 71.41	Exterior Fair	Poor	Length: Width: Height: Count: Total Qu Limited In	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41 \$0.1 None 6-10 yrs
Cand along North. Cle Recommended Work Element Group: Element Name: ocation: Material: Element Type: Environment: Protection System: Condition Data: Units Comments	an as maintenance, Decks Soffit - Thin Slab Cast-in-place con Moderate s Exc n	crete Good 71.41	Exterior Fair	Poor	Length: Width: Height: Count: Total Qu Limited In	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41 \$0.1 None 6-10 yrs 1-5 yrs
and along North. Cle Recommended Work Element Group: Element Name: ocation: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. r Comments	an as maintenance, Decks Soffit - Thin Slab Cast-in-place con Moderate	crete Good 71.41	Exterior Fair	Poor	Length: Width: Height: Count: Total Qu Limited In	antity:	d Construction Cost: Priority	\$0.4 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 19.3 1.85 2 71.41 71.41 \$0.1 None 6-10 yrs 1-5 yrs Within 1 yr

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Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments Judged from wearing su Recommended Work	Decks Deck top Cast-in-place concrete Cast-in-place conc on supports, composite Moderate Hot rubberized asphalt membrane Exc Good Fair Poor 250.69 Urface condition.	Length: Width: Height: Count: Total Quantity Limited Inspect Mair Non Perf Non Estin	nt. Needs e orm. Deficiencies e nated Construction Cost: Priority	21.8 11.5 0.225 1 250.69 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Embankments & Streams Embankments Each Quadrant Benign None Exc Good Fair Poor 4	Length: Width: Height: Count: Total Quantity: Limited Inspec	tion	4 4 4 8 0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Embankments & Streams Slope protection Each End of Bridge Rock protection Benign None Exc Good Fair Poor 2	Length: Width: Height: Count: Total Quantity: Limited Inspect Main None Perfo None Estin	t. Needs	2 2 2 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent

STRUCTURE ID BR4

Element Group	Embankments & Streams	Length		
Element Name:	Streams and Waterways	Width		
Location:	Under Bridge	Height		
Material:		Count		1
Flement Type		Total O	uantity:	- 1
Environment:	Benjan			•
Protection System:	None			
Condition Data: Unite	Exc Good Fair P	loor	Maint. Needs	
			None	
Comments			None	
			Estimated Construction Cost:	\$0.00
			Priority	None
Recommended Work				6-10 yrs
				1-5 Yrs
				Urgent
				orgent
Element Group:	Foundations	Length		
Element Name:	Foundation (below ground level)	Width:		
Location:		Height:		
Material:	Cast-in-place concrete	Count:		
Element Type:	Spread	Total Q	uantity:	
Environment:	Benign	Limited	Inspection	
Protection System:	Nono			
Frotection System.	NONE		Maint, Needs	
Condition Data: Units	Exc Good Fair P	'oor	Maint. Needs None	
Condition Data: Units	Exc Good Fair P	/oor	Maint. Needs None Perform. Deficiencies	
Condition Data: Units	Exc Good Fair P	loor	Maint. Needs None Perform. Deficiencies None	
Condition Data: Units	Exc Good Fair P	loor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost:	\$0.00
Condition Data: Units	Exc Good Fair P	/oor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost:	\$0.00
Condition Data: Units	Exc Good Fair P	/oor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs
Condition Data: Units	Exc Good Fair P	/oor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs
Condition Data: Units		'oor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr
Condition Data: Units	Exc Good Fair P	'oor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Condition Data: Units	Exc Good Fair P	'oor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Condition Data: Units Comments Recommended Work Element Group:	Exc Good Fair P	'oor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Condition Data: Units Comments Recommended Work Element Group: Element Name:	Approaches Curb/outters	/oor	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location:	Approaches Curb/gutters	/oor Length: Width: Height:	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material:	Approaches Curb/gutters Cast-in-place concrete	/oor Length: Width: Height: Count	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type:	Approaches Curb/gutters Cast-in-place concrete	loor Length Width: Height: Count: Total O	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment:	Approaches Curb/gutters Cast-in-place concrete Severe	voor Length Width: Height: Count: Total Q	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Approaches Curb/gutters Cast-in-place concrete Severe	boor Length: Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Coodilion Data: Units	Exc Good Fair P	boor Length: Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	Exc Good Fair P Approaches	voor Length: Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	Exc Good Fair P Approaches	voor Length: Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Material:	Exc Good Fair P Approaches	boor Length: Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Material:	Exc Good Fair P Approaches	boor Length: Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24 \$0.00
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Material: Condition Data: Units Comments	Exc Good Fair P Approaches	loor Length Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24 \$0.00 None
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Comments Recommended Work	Exc Good Fair P	loor Length: Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24 \$0.00 None 6-10 yrs
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units m Comments	Exc Good Fair P	loor Length Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24 \$0.00 None 6-10 yrs 1-5 yrs
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units m Comments Recommended Work	Exc Good Fair P	loor Length Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 6 0.18 4 24 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr

STRUCTURE ID BR4

Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. r Comments	Approaches Approach slabs Each End Cast-in-place concrete Moderate Exc Good	Fair Poor	Length: Width: Height: Count: Total Quantit Limited Inspe Ma No Pei	y: int. Needs ne fform. Deficiencies ne	6 10 0.25 2 120
Recommended Work				Imated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Minor raveling noted on Recommended Work	Approaches Wearing surface Each End Asphalt Severe Exc Good 12 both approaches.	Fair Poor	Length: Width: Height: Count: Total Quantity Limited Inspe Mai Nor Per Nor Est	r:	6 10 0.08 2 120 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Recommended Work	Sidewalks/curbs Curbs Cast-in-place concrete Severe Exc Good 35.	Fair Poor	Length: Width: Height: Count: Total Quantity Limited Inspec Mair Non Perf Non Esti	tion	21.8 0.625 0.18 2 35.1 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent

.

STRUCTURE ID BR4_

	Comments	Estimated Cost
Approaches		\$0.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other		\$0.00
Contingencies		\$0.00
	Total Estimated Const. Cost	\$0.00

Justification

STRUCTURE NUMBER: BR4



Roadway looking West



South railing

STRUCTURE NUMBER: BR4



North railing



Accumulated sand on road

STRUCTURE NUMBER: BR4



Northeast wing wall (Typ.)



West abutment

STRUCTURE NUMBER: BR4



Interior soffit (Typ.)



Exterior soffit (Typ.)

STRUCTURE NUMBER: BR4



Northeast bearing - minor loss of contact of bearing (Typ. Southeast, Southwest, Northwest)



Minor loss of bearing contact

STRUCTURE NUMBER: BR4



South elevation



Southwest wing wall

STRUCTURE NUMBER: BR4



East abutment

STRUCTURE ID BR5_

	a		
Structure Name	Muskoka Rd. Brid	ige	
Main Hwy/Road #		On 🖌 Under 🗌	Crossing Type Non-navig water
Road Name	Muskoka Rd.		
Structure Location	0.2km north of Ro	bins Rd.	
Latitude			Longitude
Owner(s)	Township of Stror	ng	
Heritage Designation	Not Cons		
Road Class:	Local		
MTO Region	Northern		
MTO District	Huntsville		Posted Speed 80 No of Lanes 2
Old County	Parry Sound		AADT 0 % Trucks 0
Geographic Twp	Township of Stror	ıg	Special Routes: Transit 🗌 Truck 🗌 School 🗌 Bicycle 🗌
Structure Type	I-beam or Girders	,	Detour Length Around Bridge (km)
Total Deck Length		16 (m)	Fill on Structure (0 (m)
Overall Str Width		8.1 (m)	Skew Angle 0 (Degrees)
Total Deck Area		129.6 (sq. m)	Direction of Structure North/South
Roadway Width		7 (m)	No of Spans 1
Historical Dat			
	ta		
Year Built:	ta 	2014	Last Biennial Inspection: 11/5/2016
Year Built: Current Load Limit:	ta 	2014	Last Biennial Inspection: 11/5/2016
Year Built: Current Load Limit: Load Limit By-Law	#:	2014 (tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:
Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date	#:	2014 (tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:
Year Built: Current Load Limit: Load Limit By-Law a By-Law Expiry Date Min Vertical Cleara	#:	(tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:
Year Built: Current Load Limit: Load Limit By-Law a By-Law Expiry Date Min Vertical Clearan Rehab History: (Date	#:	2014 (tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:
Year Built: Current Load Limit: Load Limit By-Law a By-Law Expiry Date Min Vertical Clearan Rehab History: (Dat	#:	2014 (tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:
Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Cleara Rehab History: (Date	#:	2014 (tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:
Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearan Rehab History: (Dat	#:	2014 (tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:
Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearar Rehab History: (Dat	#:	(tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:
Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearan Rehab History: (Dat	ta	2014 (tonnes)	Last Biennial Inspection: 11/5/2016 Last BridgeMaster Inspection:

Field Inspection Information

Date of Inspection	6/26/2018	Temperature:	21 ° C	
Inspected By: Inspector: Others in Party: Equipment Used: Weather:	D.M. Wills Associates Ltd. Ghassan Zanzoul, P. Eng. Michael McDonnell Camera, tape measure. Sunny			

Additional Investigations Required

	Priority	Estimated Cost
Detailed Deck Condition Survey:		
DART Survey		
Detailed Coating Condition Survey:		
Underwater Investigation:		
Fatigue Investigation:		
Seismic Investigation:		
Structure Evaluation:		
Load Posting:Estimated Load	Total Cost	
Next Date Inspection:	6/26/2020	

BCI

Special Notes:

Suspected Performance Deficiencies

- 00 None
- 01 Load carrying capacity
- 02 Excessive deformations (deflections rotations)

100

- 03 Continuing settlement
- 04 Continuing movements 05
- Seized bearings

Maintenance Needs

- 01 Lift and Swing Bridge Maintenance
- 02
- Bridge Cleaning Bridge Handrail Maintenance 03
- Painting Steel Bridge Structures Bridge Deck Joint Repair 04
- 05
- 06 Bridge Bearing Maintenance

- 06 Bearing not uniformly loaded/unstable
 07 Jammed expansion joint
 08 Pedestrian/vehicular hazard
- 08
- Rough riding surface 09 10 Surface ponding
- 11 Deck drainage

- 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

- Slippery surfaces
 Flooding/channel blockage
 Undermining of foundation
 Unstable embankments

- Other 16
- Erosion Control at Bridges 13
- 14 Concrete Sealing
- Rout and Seal 15
- Bridge deck Drainage 16
- 17 Other



STRUCTURE ID BR5

Element Data			
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. r Comments	Decks Wearing surface Asphalt Severe s Exc Good Fair Poor m 112	Length: Width: Height: Count: Total Quantity: Limited Inspection Naint. Need None Perform. De None	16 7 0.09 112 1s eficiencies
Recommended Work		Estimated C	Construction Cost: \$0.0 Priority None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. r Comments Recommended Work	Decks Soffit - Thin Slab Interior Cast-in-place concrete Cast-in-place concrete on supports Benign Interior s Exc Good Fair Poor m 76.72 Interior Interior	Length: Width: Height: Count: Total Quantity: Limited Inspection [Maint. Need None Perform. Do None Estimated O	14 5.48 0.225 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 76.72 1 7 1 7 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. I Comments	Decks Deck top Cast-in-place concrete Cast-in-place concrete on supports Benign Hot rubberized asphalt membrane s Exc Good Fair n 112	Length: Width: Height: Count: Total Quantity: Limited Inspection [Maint. Need None Perform. Do None Estimated (Urgent 16 7 0.225 1 1 112 3 ds eficiencies Construction Cost: \$0. Priority None 6.10 yrs

STRUCTURE ID	BR5
	-

Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Recommended Work	Decks Soffit - Thin Slab Exterior Cast-in-place concrete Cast-in-place concrete on supports Benign Exc Good Fair Poor 31.92	Length: 14 Width: 2.28 Height: 1 Count: 1 Total Quantity: 31.92 Limited Inspection
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments 1 drain blocked. Clear a Recommended Work	Decks Drainage Steel Steel Exc Good Fair Poor 4 S maintenance.	Length:
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Recommended Work	Sidewalks/curbs Curbs Curbs Cast-in-place concrete Moderate Exc Good Fair Poor 30.22	Length: 22 Width: 0.5 Height: 0.18 Count: 2 Total Quantity: 30.22 Limited Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: \$0.00 Priority None 6-10 yrs 1-5 yrs Within 1 yr Urgent



STRUCTURE ID

BR5

Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Comments Recommended Work	Barriers Posts Steel I-type Benign Hot dip galvanizing Exc Good Fair Poor	Length: Width: Height: Count: Total Quantity: Limited Inspecti None Perfor None Estim	on	0.15 0.16 0.63 24 24 24 24 8 0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent	
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Minor collision damage Recommended Work	Barriers Railing Systems Steel Thrie Beam on steel post Benign Hot dip galvanizing Exc Good Fair Poor 44	Length: Width: Height: Count: Total Quantity: Limited Inspection Maint. None Perfor None Estim.	on	22 0.5 2 44 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr	
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments Recommended Work	Beams/MLE's Girders Steel I-type Benign Exc Good Fair Poor 148.02	Length: Width: Height: Count: Total Quantity: Limited Inspection Maint. None Perfor None Estima	n Needs m. Deficiencies ated Construction Cost: Priority	Urgent 15.5 0.23 0.61 5 148.02 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent	
S1	ΓRI	JCT	URE	ID	BR5
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Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Beams/MLE's Diaphragms Steel Channel Benign Exc Good 10	Fair Poor	Length: Width: Height: Count: Total Quantity: Limited Inspection Maint. None Perfor None Estima	m. Deficiencies	1.6 0.065 0.25 10 10 10 10 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments Recommended Work	Abutments Abutment walls Each End Cast-in-place concrete Conventional closed Benign Exc Good 16	Fair Poor	Length: Width: Height: Count: Total Quantity: Limited Inspectio Maint. None Perfort None Estima	n Deficiencies	8 1 2 16 16 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Recommended Work	Abutments Wingwalls Cast-in-place concrete Reinforced concrete Benign Exc Good 11.2	Fair Poor	Length: Width: Height: Count: Total Quantity: Limited Inspectio Maint. None Perform None Estima	n	3.5 0.45 1.6 4 11.2 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent

STRUCTURE ID BR5

Element Group:	Foundations	an ground lour			Length:		
Location:	Foundation (Del	ow ground leve	30)		Wiath:		
Material:	Steel				Reight:		10
Flement Type:	Piles				Total Ou		
Environment:	Benjan	-	-		Limited I	nspection	10
Protection System:	None			-	Enniodi		
Condition Data: 11	nits Exc	Good	Eair	Boor		Maint. Needs	
	ach		1 dii	FUU		None	
Comments						Perform. Deficiencies	
						Estimated Construction Cost	\$0.00
						Priorit	None
Recommended Wo	rk						6-10 yrs
							1-5 yrs
							Urgent
Element Group:	Embankments &	Streams			Length:		
Element Name:	Streams and Wa	terways	1		Width:		
_ocation:	Under Bridge				Height:		
Material:					Count:		1
Element Type:					Total Qu	antity:	1
Environment:	Benign				Limited In	nspection	
Protection System:	None					Maint Maada	
Condition Data: U	nits Exc	Good	Fair	Poor		None	
%	100					Perform Deficiencies	
Comments		L L.				None	
						Estimated Construction Cost	50.00
						Estimated Construction Cost:	\$0.00
Decommended						Estimated Construction Cost: Priority	None
Recommended Wo	k					Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs
Recommended Wo	k					Estimated Construction Cost: Priority	None 6-10 yrs 1-5 yrs Within 1 yr
Recommended Wo	k					Estimated Construction Cost: Priority	50.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Recommended Wo	k					Estimated Construction Cost: Priority	50.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Recommended Wo	Embankments &	Streams			Length:	Estimated Construction Cost: Priority	50.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Recommended Wo Element Group: Element Name:	Embankments & Embankments	Streams			Length: Width:	Estimated Construction Cost: Priority	50.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Recommended Wo Element Group: Element Name: Location:	Embankments & Embankments Each Quadrant	Streams			Length: Width: Height:	Estimated Construction Cost: Priority	None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Recommended Wo Element Group: Element Name: Location: Material:	Embankments & Embankments Each Quadrant	Streams			Length: Width: Height: Count:	Estimated Construction Cost: Priority	4
Recommended Wo Element Group: Element Name: Location: Material: Element Type:	Embankments & Embankments Each Quadrant	Streams			Length: Width: Height: Count: Total Qua	Priority	4 4 50.00 50
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment:	Embankments & Embankments Each Quadrant Benign	Streams			Length: Width: Height: Count: Total Qua Limited Ir	antity:	4
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Embankments & Embankments Each Quadrant Benign None	Streams			Length: Width: Height: Count: Total Qua Limited In	Antity:	4
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Ut	Embankments & Embankments & Each Quadrant Benign None None	Streams	Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	Antity:	4
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Ur	Embankments & Embankments & Each Quadrant Benign None nits Exc ich	Streams Good	Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity:	4
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Ur	Embankments & Embankments Each Quadrant Benign None nits Exc Ich	Streams Good 4	Fair	Poor	Length: Width: Height: Count: Total Qua Limited In	Antity:	4
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Ur Comments	Embankments & Embankments & Each Quadrant Benign None None	Streams Good 4	Fair	Poor	Length: Width: Height: Count: Total Qua Limited In	Antity: Antity	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 4 4 4 50.00
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Ur Comments	Embankments & Embankments & Each Quadrant Benign None nits Exc Ich	Streams Good 4	Fair	Poor	Length: Width: Height: Count: Total Qua Limited In	Estimated Construction Cost: Priority antity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 4 4 4 50.00 None
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Ur Comments	k Embankments & Embankments Each Quadrant Benign None nits Exc Ich	Streams Good	Fair	Poor	Length: Width: Height: Count: Total Qua Limited In	Antity: Antity	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 4 4 4 4 50.00 None 6-10 yrs
Recommended Wor Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Ur Comments Recommended Wor	k Embankments & Embankments Each Quadrant Benign None nits Exc Ich	Streams Good	Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	Antity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 4 4 4 4 50.00 None 6-10 yrs 1-5 yrs
Recommended Wo Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un Comments	k Embankments & Embankments Each Quadrant Benign None nits Exc Ich	Streams Good 4	Fair	Poor	Length: Width: Height: Count: Total Qua Limited In	Antity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 4 4 4 4 4 50.00 None 6-10 yrs 1-5 yrs Within 1 yr

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Element Group:	Accessories				Length:		
Element Name:	Signs				Width:		
Location:					Height:		
Material:	Steel				Count:		4
Element Type:					Total Qu	antity:	4
Environment:	Benign				Limited In	nspection	
Protection System:						Maint Needs	
Condition Data: Units	Exc	Good	Fair	Poor		None	
Each		4				Perform. Deficiencies	
Comments						None	
4- hazard warning signs	3.			·		Estimated Construction Co	ost: \$0,00
						Prio	vity None
Recommended Work				·		1.10	6-10 vrs
Recommended work							1-5 yrs
							Within 1 yr
							Urgent
Element Group:	Approaches				Length:		6
Element Group: Element Name:	Approaches Wearing surface				Length: Width:		6 7
Element Group: Element Name: Location:	Approaches Wearing surface Each End				Length: Width: Height:		6 7 0.08
Element Group: Element Name: Location: Material:	Approaches Wearing surface Each End Asphalt				Length: Width: Height: Count:		6 7 0.08 2
Element Group: Element Name: Location: Material: Element Type:	Approaches Wearing surface Each End Asphalt				Length: Width: Height: Count: Total Qua	antity:	6 7 0.08 2 84
Element Group: Element Name: Location: Material: Element Type: Environment:	Approaches Wearing surface Each End Asphalt Severe				Length: Width: Height: Count: Total Qua Limited Ir	antity:	6 7 0.08 2 84
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Approaches Wearing surface Each End Asphalt Severe				Length: Width: Height: Count: Total Qua Limited Ir	antity:	6 7 0.08 2 84
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	Approaches Wearing surface Each End Asphalt Severe Exc	Good	Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity:	6 7 0.08 2 84
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	Approaches Wearing surface Each End Asphalt Severe Exc 84	Good	Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity:	6 7 0.08 2 84
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments	Approaches Wearing surface Each End Asphalt Severe Exc 84	Good	Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity: mspection Maint. Needs Rout and Seal Perform. Deficiencies None	6 7 0.08 2 84
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Narrow to medium trans	Approaches Wearing surface Each End Asphalt Severe Exc 84 werse cracks at bot	Good [Fair	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity: antity: Inspection Maint. Needs Rout and Seal Perform. Deficiencies None Estimated Construction Co	6 7 0.08 2 84 st: \$0.00
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Narrow to medium trans	Approaches Wearing surface Each End Asphalt Severe Exc Exc 84	Good 	Fair outh.	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity: hspection Maint. Needs Rout and Seal Perform. Deficiencies None Estimated Construction Co	6 7 0.08 2 84 st: \$0.00
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Narrow to medium trans	Approaches Wearing surface Each End Asphalt Severe Exc Exc 84	Good]	Fair outh.	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity: Inspection Inspection Inspection Inspection Inspection Inspection Inspection Inspection Costruction Costr	6 7 0.08 2 84 st: \$0.00 rity None 6-10 yrs
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Narrow to medium trans Recommended Work Rout and seal cracks as	Approaches Wearing surface Each End Asphalt Severe Exc Exc 84 sverse cracks at bot	Good Good	Fair outh.	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity: mspection Maint. Needs Rout and Seal Perform. Deficiencies None Estimated Construction Co Prio	6 7 0.08 2 84 st: \$0.00 rity None 6-10 yrs 1-5 yrs
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Narrow to medium trans Recommended Work Rout and seal cracks as	Approaches Wearing surface Each End Asphalt Severe Exc 84 werse cracks at bot	Good In North and S	Fair outh.	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity: mspection Maint. Needs Rout and Seal Perform. Deficiencies None Estimated Construction Co Prio	6 7 0.08 2 84 84 st: \$0.00 rity None 6-10 yrs 1-5 yrs Within 1 yr
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Narrow to medium trans Recommended Work Rout and seal cracks as	Approaches Wearing surface Each End Asphalt Severe Exc 84 everse cracks at bot	Good Good In North and S	Fair outh.	Poor	Length: Width: Height: Count: Total Qua Limited Ir	antity: Inspection I Maint. Needs Rout and Seal Perform. Deficiencies None Estimated Construction Co Prio	6 7 0.08 2 84 84 84 84 84 84 84

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STRUCTURE ID BR5_

	Comments	Estimated Cost
Approaches		\$0.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other		\$0.00
Contingencies		\$0.00
	Total Estimated Const. Cost	\$0.00

Justification

WILLS

STRUCTURE NUMBER: BR5



Roadway looking South



Minor damage at Northeast

STRUCTURE NUMBER: BR5



West railing



East railing

STRUCTURE NUMBER: BR5



Medium transverse crack on North approach



Narrow crack on South approach

STRUCTURE NUMBER: BR5



Soffit



South abutment

STRUCTURE NUMBER: BR5



North abutment



East elevation

STRUCTURE ID BR6

Inventory Data

Main Hwy/Road #					
	On 🛛 On	ider 🗌	Crossing Type	Non-navig water	
Road Name	North Horn Lake Road				
Structure Location	West of Highway 11			-	
Latitude			Longitude		-
Owner(s)	Township of Strong				
Heritage Designation	Not Cons				
Road Class:	Local				
MTO Region	Northern				
MTO District	Huntsville		Posted Speed	50 No of Lane	es 1
Old County	Parry Sound		AADT	0 % Truck	s 0
Geographic Twp	Township of Strong		Special Routes: Trans	it 🗌 Truck 🗌	School 🗌 Bicycle 🗌
Structure Type	Bailey Panel		Detour Length Around Brid	lge	(km)
Total Deck Length	12.2	(m)	Fill on Structure		0 (m)
Overall Str Width	6.37	(m)	Skew Angle	0	(Degrees)
Total Deck Area	77.714	(sq. m)	Direction of Structure	East/West	
Roadway Width	5.05	(m)	No of Spans	1	
Span Lengths	12.2				(m)
-					

Historical Data Year Built: Last Biennial Inspection: 11/5/2016 Current Load Limit: (tonnes) Last BridgeMaster Inspection: 11/5/2016 Load Limit By-Law #: Last BridgeMaster Inspection: 11/5/2016 By-Law #: Last Evaluation: 11/5/2016 By-Law Expiry Date: Last Underwater Inspection: 11/5/2016 Min Vertical Clearance: (m) Last Condition Survey: 11/5/2016 Rehab History: (Date/description) 11/5/2016 11/5/2016



Field Inspection Information

Date of Inspection	: 6/26/2018	Temperature:	21 ° C
Inspected By:	D.M. Wills Associates Ltd.		
Inspector:	Ghassan Zanzoul, P. Eng.		
Others in Party:	Michael McDonnell		
Equipment Used:	Camera, tape measure.		
Weather:	Sunny		

Additional Investigations Required

	Priority	Estimated Cost
Detailed Deck Condition Survey:		
DART Survey		
Detailed Coating Condition Survey:		
Underwater Investigation:		
Fatigue Investigation:		
Seismic Investigation:		
Structure Evaluation:		
Load Posting:Estimated Load	Total Cost	· · · · · · · · · · · · · · · · · · ·
Next Date Inspection:	6/26/2020	

BCI 71.03

Special Notes:

Suspected Performance Deficiencies

- 00 None
- 01 Load carrying capacity
- 02 Excessive deformations (deflections rotations)
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

- Lift and Swing Bridge Maintenance 01
- Bridge Cleaning 02
- 03 Bridge Handrall Maintenance
- Painting Steel Bridge Structures 04
- 05 Bridge Deck Joint Repair 06 Bridge Bearing Maintenance

- 06 Bearing not uniformly loaded/unstable
- Jammed expansion joint Pedestrian/vehicular hazard 07
- 08
- 09 Rough riding surface 10
- Surface ponding
- 11 Deck drainage
- 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

- 12
- Slippery surfaces Flooding/channel blockage Undermining of foundation
- 13 14 15
- Unstable embankments Other 16
- 13 Erosion Control at Bridges
- 14 Concrete Sealing
- 15 Rout and Seal Bridge deck Drainage 16
- 17 Other



STRUCTURE ID BR6_

Element Data				
Element Group: Element Name: Location: Material:	Barriers Posts Bridge Steel	Length: Width: Height: Count:		1.1 0.15 0.15 18
Element Type: Environment: Protection System:	Severe Hot dip galvanizing	Total Quantity:]	18
Condition Data: Units	Exc Good Fair Poor	None Perform. Def	ficiencies	
		Estimated C	onstruction Cost: Priority	\$0.00
Recommended Work				6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type:	Decks Soffit Wood	Length: Width: Height: Count: Total Quantity:		12 5.05 0.06 1 60.6
Environment: Protection System: Condition Data: Units Sq. r Comments Localized split timbers	Exc Good Fair Poor 59.1 1.5 and rotting.	Limited Inspection Maint. Needs None Perform. Def None Estimated Co) iciencies	
Recommended Work Replace with wearing s	urface. Costed under deck top.		Priority	None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment:	Accessories Signs Steel Severe	Length: Width: Height: Count: Total Quantity: Limited Inspection		1
Protection System: Condition Data: Units Each Comments	Exc Good Fair Poor	Maint. Needs Other Perform. Def None	iciencies	
1 Hazard sign. Recommended Work Install 3 hazard signs a	nd 2 narrow bridge signs as maintenance.	Estimated Co	onstruction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent



S	TR	UC	TUF	RΕ	ID	BR6

Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments Rust stains noted. Larg	Abutments Ballast walls Each End Cast-in-place concre Reinforced concrete Benign Exc Exc	te Good Fair 18.92]	Poor	Length: Width: Height: Count: Total Qu Limited I	antity: nspectio Maint. None Perforr None Estima	n	0.35 8.6 1.1 2 18.92
Recommended Work						Priority	None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Bearings covered in der Recommended Work Clean bearings as mair	Abutments Bearings Steel Hinge Benign Hot dip galvanizing Exc Deris.	Good Fair 8	Poor	Length: Width: Height: Count: Total Qu Limited I	antity: nspectio Maint. Bridge Perform None Estima	n	0.46 0.38 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m Comments Abutment bearing seat Recommended Work Clean abutment bearing	Abutments Abutment walls Each End Cast-in-place concret Conventional closed Benign Exc covered in debris. Mine seat as maintenance.	Good Fair 61.06	Poor	Length: Width: Height: Count: Total Qu Limited In	antity: mspection Maint. I Bridge Perform None Estimat	n	8.6 3.55 2 61.06 \$0.00 None 6-10 yrs 1-5 yrs Wilhin 1 yr Urgent

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Element Group:	Approaches			7	Length:		7.6
Element Name:	Wearing surface	÷		-	Width:		5
Location:	Each End			-	Height:		
Material:	Gravel				Count:		2
Flement Type:					Total Qua	antity.	76
Environment	Severe				Limited Ir	penertion	
Protection System:							
Condition Date: Un	-! Eve		De De			Maint. Needs	
Condition Data. Or		1 76		or I		None	
	<u>. m</u>	/0				Perform. Deficiencies	ı
Comments				-		None	
						Estimated Construction Cost:	\$0.00
						Priority	None
Recommended Wor	k						6-10 yrs
							1-5 yrs
							Within 1 yr
<u> </u>							Urgent
			<u> </u>				
Element Group:	Barriers				Length:		0.2
Element Name:	Posts		Τ		Width:		0.2
Location:	Approaches			7	Height:		;
Material:	Wood				Count:		44
Element Type:				7	Total Qua	antity:	44
Environment:	Benign			Ę	Limited Ir	nspection	
Protection System:				7		Maint Needs	
Condition Data: Ur	lits Exc	Good	Fair Por	or		Bridge Handrail Maintenance	
Ea	ich	40	2	2		Perform Deficiencies]
Comments		· · · · · · · · · · · · · · · · · · ·		,		None	
-						Estimated Construction Cost:	\$0.00
						Driority	Nana
						Ettonty	None 6-10 vrs
Recommended yvor	K						1-5 yrs
Replace damaged p	osts as maintenance	,					Within 1 yr
							Urgent
Element Group:	Barriers			 7	l ength:		
	<u> </u>				and the second second	1	
Element Name:	Railing Systems		1	-	Width:		
Element Name: Location:	Railing Systems Approaches			-1	Width: Height:		
Element Name: Location: Material:	Railing Systems Approaches Steel				Width: Height: Count:		
Element Name: Location: Material: Element Type:	Railing Systems Approaches Steel Steel Flex Beam	on wood post			Width: Height: Count: Total Qua	antity:	
Element Name: Location: Material: Element Type: Environment:	Railing Systems Approaches Steel Steel Flex Beam Benion	on wood post			Width: Height: Count: Total Qua	antity:	75
Element Name: Location: Material: Element Type: Environment: Protection System:	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi	on wood post			Width: Height: Count: Total Qua	antity:	75
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizii	on wood post	Fair Poo		Width: Height: Count: Total Qua Limited Ir	antity:	75
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi its Exc	on wood post ng Good	Fair Poc	- - - - - - - - - - - - - - - - - - -	Width: Height: Count: Total Qua Limited Ir	antity:	75
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un m	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi its Exc	on wood post ng Good 59	Fair Poc	2 7 8	Width: Height: Count: Total Qua Limited Ir	antity:	75
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un Comments	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi iits Exc	on wood post	Fair Poc	or 8	Width: Height: Count: Total Qua Limited Ir	antity: spection Maint. Needs Bridge Handrail Maintenance Perform. Deficiencies None	75
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un Comments Northeast and South	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi iits Exc	on wood post ng Good 59 naged.	Fair Poc	or 8	Width: Height: Count: Total Qua Limited Ir	antity: Inspection Maint. Needs Bridge Handrail Maintenance Perform. Deficiencies None Estimated Construction Cost:	75
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un Comments Northeast and South	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi its Exc	on wood post ng Good 59 naged.	Fair Poc	or 8	Width: Height: Count: Total Qua	antity: Ispection Maint. Needs Bridge Handrail Maintenance Perform. Deficiencies None Estimated Construction Cost: Priority	75 75 \$0.00
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un Comments Northeast and South Recommended Wor	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi its Exc	on wood post ng Good 59 naged.	Fair Poc	or 8	Width: Height: Count: Total Qua Limited Ir	antity:	75 75 \$0.00 None 6-10 yrs
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un Comments Northeast and South Recommended Wor Replace damaged g	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi its Exc west corner radii dan	on wood post ng Good 59 naged. naged.	Fair Poc	or 8	Width: Height: Count: Total Qua Limited Ir	antity: Inspection Maint. Needs Bridge Handrail Maintenance Perform. Deficiencies None Estimated Construction Cost: Priority	75 75 \$0.00 None 6-10 yrs 1-5 yrs
Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un Comments Northeast and South Recommended Wor Replace damaged g	Railing Systems Approaches Steel Steel Flex Beam Benign Hot dip galvanizi iits Exc west corner radii dan	ng Good 59 naged.	Fair Poc	pr 8	Width: Height: Count: Total Qua Limited Ir	antity: Inspection Maint. Needs Bridge Handrail Maintenance Perform. Deficiencies None Estimated Construction Cost: Priority	75 75 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urcont

STRUCTURE ID	BR6
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Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Comments Recommended Work	Barriers Railing Systems Bridge Steel Severe Hot dip galvanizing Exc Good Fair Poor 26	Length: 13 Width: 13 Height: 2 Count: 2 Total Quantity: 26 Limited Inspection 3 Maint. Needs 3 None 3 Perform. Deficiencies 30.00 Priority \$0.00 Priority \$0.00 Priority \$0.00 Vithin 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units So.m Comments Recommended Work	Beams/MLE's Floor Beams Steel I-type Benign Hot dip galvanizing Exc Good Fair Poor 60.43	Length: 7.9 Width: 0.2 Height: 0.465 Count: 5 Total Quantity: 60.43 Limited Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: \$0.00 Priority None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Beams/MLE's Stringers Steel I-type Benign Hot dip galvanizing Exc Good Fair Poor 11	Length: 12.2 Width: 0.04 Height: 0.1 Count: 11 Total Quantity: 11 Limited Inspection 11 Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: \$0.00 Priority None Understand \$1-5 yrs Within 1 yr Urgent

STRUCTURE ID BR6

Element Group:	Bracing		Len	gth:		4.3
Element Name:	Bracing		Wid	th:		0.1
Location:	Horizontal Bracing		Heig	ght:		0.05
Material:	aterial: Steel (nt:		8
Element Type:	Channel		Tota	al Quantity:		8
Environment:	Benign		Limi	ted Inspection	י 🔲	
Protection System:	Hot dip galvanizing			Maint, I	Needs	
Condition Data: Units	Exc Good	Fair Po	or	None		
Eacl				Perform	n. Deficiencies	
Comments				None		
				Estimat	ed Construction Cost:	\$0.00
					Priority	None
Recommended Work					27.004	6-10 yrs
						1-5 yrs
						Within 1 yr
						Urgent
	12.0					
Element Group:	Coatings		Len	gth:		
Element Name:	Structural Steel		Wid	th:		
Location:			Heig	iht:		
Material:			Cou	nt:		1
Element Type:	Hot dip galvanizing		lota	I Quantity:		1
Environment:	Benign			ted inspection		
Protection System:	If the second se				1	
				Maint. M	leeds	
Condition Data: Units	Exc Good	Fair Po	or	Maint. None	leeds	
Condition Data: Units	Exc Good	Fair Po	or	Maint. None Perform	Needs	
Condition Data: Units	Exc Good	Fair Po	or	Maint. None Perform None	Needs	
Condition Data: Units	Exc Good	Fair Po	or	Maint. None Perform None Estimat	Needs n. Deficiencies ed Construction Cost:	\$0.00
Condition Data: Units	Exc Good	Fair Po	or	Maint. I None Perform None Estimat	Needs 1. Deficiencies ed Construction Cost: Priority	\$0.00 None
Condition Data: Units	Exc Good	Fair Po		Maint. I None Perform None Estimat	Needs n. Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs
Condition Data: Units	Exc Good	Fair Po		Maint. I None Perform None Estimat	Needs n. Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs
Condition Data: Units	Exc Good	Fair Po		Maint. f None Perform None Estimat	Needs n. Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr
Condition Data: Units	Exc Good	Fair Po		Maint. f None Perform None Estimat	Needs The Deficiencies The deficiencies The deficiencies Priority Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Condition Data: Units	Exc Good	Fair Po		Maint. f None Perform None Estimat	Needs n. Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Condition Data: Units Comments Recommended Work Element Group: Element Name:	Exc Good 100	Fair Po		Maint. f	Needs n. Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location:	Exc Good 100 Decks Deck top	Fair Po		Mant. f None Perform None Estimat	Needs In Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06
Condition Data: Units	Exc Good 100 100	Fair Po	Leng Vid Heig	Mant. f None Perform None Estimat	Needs In Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type:	Exc Good 100 100	Fair Po	or Leng Uid Uid Uid Heig Cou	Mant. f None Perform None Estimat	Needs Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60 6
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment:	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or Leng Wid Heig Cou Tota	Maint. f None Perform None Estimat	Needs Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or Leng Wid Heig Cou Tota	Maint. f None Perform None Estimat Estimat	Needs	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or	Maint. f None Perform None Estimat Estimat	Needs	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units So r	Exc Good 100 100 100 100 100 100 100 10	Fair Po	J or Leng Widi Heig Cou Tota Limi	Maint. f None Perform None Estimat Estimat it: th: th: th: f Quantity: ted Inspectior Maint. f Bridge (Needs In Deficiencies In Deficiencies In Officiencies In Officiencies In Officiencies In Officiencies In Officiencies In	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6
Condition Data: Units Comments Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. r Comments	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or Leng Wid Heig Cou Tota Limi or	Maint. f None Perform None Estimat Estimat I Quantity: I Quantity: I Quantity: I Quantity: I Quantity: Maint. N Bridge O Perform	Needs In Deficiencies In Deficiencies In Deficiencies In Deficiencies In Deficiencies In	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. r Comments Minor rotting and mois	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or Leng Wid Heig Cou Tota Limi or	Maint. f None Perform None Estimat Estimat it: I Quantity: I Quantity: I Quantity: I Quantity: Maint. N Bridge (Perform None	Needs In Deficiencies In Deficiencies In Officiencies In Officiencies In Officienc	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. f Comments Minor rotting and mois	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or Leng Widd Heig Cou Tota Limi or	Maint. f None Perform None Estimat Estimat	Needs	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6 \$15,000.00
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. r Comments Minor rotting and mois	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or Leng Widi Heig Cou Tota Limi or	Maint. None Perform None Estimat Estimat	Needs	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6 \$15,000.00 None 2.10
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. r Comments Minor rotting and mois Recommended Work	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or Leng Wid Heig Cou Tota Limi or	Maint. f None Perform None Estimat Estimat ith: if Quantity: f Qua	Needs	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6 \$15,000.00 None 6-10 yrs 4 5 yrs
Condition Data: Units Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. f Comments Minor rotting and mois Recommended Work Replace timber deck to	Exc Good 100 100 100 100 100 100 100 10	Fair Po	or Leng Widi Heig Cou Tota Limi or 1.5	Maint. None Perform None Estimat Estimat it: I Quantity: I Quantity: I Quantity: Maint. N Bridge (Perform None Estimat	Needs	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 12 5.05 0.06 1 60.6 \$15,000.00 None 6-10 yrs 1-5 yrs Within 1 yr

	r							1	
Element Group:	Decks					Length:			12
Element Name:	Wearing surface					Width:			5.05
Location:						Height:			0.045
Material:	Wood					Count:			1
Element Type:						Total Qu	antity:		60.6
Environment:	Severe					Limited I	nspectio	on 🖌	
Protection System:							Maint.	Needs	
Condition Data: Units	Exc	Good	Fair	Poor			Bridge	Cleaning	
Sq. m			56.6		4		Perfor	m. Deficiencies	
Comments							Pedes	trian/vehicular hazard	-
Rotting and moisture da	image throughout	wearing surfa	ace.				Estima	ated Construction Cost:	\$10,000.00
li i								Priority	None
								Flioity	6-10 vrs
Recommended work									1-5 yrs
Replace whole wearing	surface. Clean we	earing surrace	e as mainten	ance.					Within 1 yr
									Urgent
L									
Element Group:	Embankments &	Streams				Length:			
Element Name:	Embankments					Width:			
Location:	All		!			Height:			
Material:						Count:			1
Element Type:						Total Qu	antity:		1
Environment:	Benign		a an			Limited I	nspectio		J
Protection System:	None]			Maint	Maada	
Condition Data: Units	Exc	Good	Fair	Poor			None	Neeus	
Each		4					Perfor	m Deficiencies	
Comments		,					None		
	-						Estima	ted Construction Cost:	\$0.00
								Priority	None
Decommonded Mark								Thoney	6-10 yrs
Recommended work									1-5 yrs
									Within 1 yr
									Urgent
					• •		-		
Element Group:	Embankments &	Streams		_		Length:		-	
Element Name:	Streams and Wat	erways				Width:			
Location:	Under Bridge					Height:	Į		
Material:						Count:			1
Element Type:						Total Qua	antity:		1
Environment:	Benign					Limited Ir	nspectio	n 🗌	
Protection System:	None						Maint.	Needs	
Condition Data: Units	Exc	Good	Fair	Poor			None		
%		100					Perform	n. Deficiencies	
Comments							None		
							Estima	ted Construction Cost:	\$0.00
								Priority	None
Recommended Work									6-10 vrs
									10 10 10
									1-5 yrs
									1-5 yrs Within 1 yr

STRUCTURE ID BR6_

Element Name:	Sic	lewalks/curbs					Length:	Γ		12	
cionicia rituino.	Cu	irbs					Width:			0.2	
Location:	Each side Heig			Height:			0.2				
Material:	W	bod					Count:			2	
Element Type:							Total Qu	antity:		24	
Environment:	Ве	nign					Limited I	nspection			
Protection System	n:							Maint N	leeds		
Condition Data:	Units	Exc	Good	Fair	Poor			Bridge C	Cleaning		-
	m		22	1		1		Perform	. Deficiencies		
Comments						_		None			
Curb covered in c	lebris. Cle	an debris off c	urb as mainter	ance.				Estimate	ed Construction Cost:	\$5,0	00.00
									Priority	None	
Recommended M	Vork								Thomy	6-10 yrs	
Replace curbs wit	th replace	ment of wearin	o surface		_					1-5 yrs	
replace curbs wi	urreplace	nent of wearin	ly surface.							Within 1	yr
										Urgent	
	-		-		-						-
Element Group:	Tru	isses/Arches	×				Length:			12.2	
Element Name:	Bo	ttom chords					Width:			0.05	
Location:							Height:			0.1	
Material:	Ste	el					Count:			4	
Element Type:	Ch	annel					Total Qu	antity:		9.76	
Environment:	Be	nign					Limited I	nspection			
Protection System	n: Ho	t dip galvanizir	ŋg					Maint. N	eeds		
Condition Data:	Units	Exc	Good	Fair	Poor			None			
	Sq. m		9.76					Perform	Deficiencies		
Comments								None			
								Estimate	ed Construction Cost:		\$0.00
									Priority	None	
Recommended W	Vork									6-10 yrs	-
							1			1-5 yrs	
										Within 1	A
										1	yr
										Urgent	yr
	-									Urgent	yr
Element Group:	Tru	sses/Arches					Length:	-		Urgent	yr
Element Group: Element Name:	Tru Co	isses/Arches nnections					Length: Width:			Urgent	yr
Element Group: Element Name: Location:	Tru Col	isses/Arches nnections					Length: Width: Height:			Urgent	yr
Element Group: Element Name: Location: Material:	Tru Cou Ste	isses/Arches nnections el					Length: Width: Height: Count:			208	yr
Element Group: Element Name: Location: Material: Element Type: Environment:	Tru Col Ste Bol	isses/Arches nnections el ted					Length: Width: Height: Count: Total Qua	antity:		Urgent 208 208	yr
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System	Tru Co Ste Bol Ber	isses/Arches nnections el ted tign	0				Length: Width: Height: Count: Total Qua Limited Ir	antity:		Urgent 208 208	yr
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System	Tru Co. Ste Bol Ber 1: Hol	isses/Arches nnections el ted tign dip galvanizin	9 Coord		Dear		Length: Width: Height: Count: Total Qua Limited Ir	antity:	eeds	Urgent 208 208	yr
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data:	Tru Co Ste Bol Ber n: Hol Units	isses/Arches nnections iel ted hign t dip galvanizin Exc	ig Good	Fair	Poor		Length: Width: Height: Count: Total Qua Limited In	antity: nspection Maint. N None	eeds	Urgent 208 208	yr
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data:	n: Hol Units Each	isses/Arches nnections eel ted ign t dip galvanizin Exc	ig Good 208	Fair	Poor		Length: Width: Height: Count: Total Qua Limited In	antity: nspection Maint. N None Perform	eeds Deficiencies	Urgent 208 208	yr
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data:	n: Hol Each	Isses/Arches nnections eel ted tign t dip galvanizin Exc	ig Good 208	Fair	Poor		Length: Width: Height: Count: Total Qua Limited In	antity: nspection Maint. N None Perform. None	eeds Deficiencies	208 208	yr
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: Comments	Tru Co Ste Bol Ber Hol Units Each	Isses/Arches nnections eel ted tign t dip galvanizin Exc	ig Good 208	Fair	Poor		Length: Width: Height: Count: Total Qua Limited Ir	antity: nspection Maint. N None Perform. None Estimate	Deficiencies	208 208	yr \$0.00
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data:	n: Hot Each	isses/Arches nnections eel ted nign Exc Exc	ig Good 208	Fair	Poor		Length: Width: Height: Count: Total Qua Limited Ir	antity: hspection Maint. N None Perform None Estimate	Deficiencies ed Construction Cost: Priority	Urgent 208 208	\$0.00
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: Comments	n: Hol Units Each	Isses/Arches nnections eel ted nign Exc Exc	Ig Good 208	Fair	Poor		Length: Width: Height: Count: Total Qua Limited In	antity: hspection Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	Urgent 208 208 208	\$0.00
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: Comments	Tru Co Ste Bol Ber n: Hol Units Each	Isses/Arches nnections eel ted hign Exc Exc	19 Good 208	Fair	Poor		Length: Width: Height: Count: Total Qua Limited In	antity: hspection Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	Urgent 208 208 208	\$0.00
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System Condition Data: Comments Recommended W	Tru Co Ste Bol Ber Hol Units Each	Isses/Arches nnections eel ted hign Exc Exc	19 Good 208	Fair	Poor		Length: Width: Height: Count: Total Qua Limited In	antity:	eeds Deficiencies ed Construction Cost: Priority	Urgent 208 208 208 208 208	yr \$0.00 yr

STRUCTURE ID BR6

Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments	Trusses/Arches Top chords Steel Channel Benign Hot dip galvanizing Exc	Good Fair 14.64	Poor	Length: Width: Height: Count: Total Qu Limited	Jantity: Inspectic Maint. None Perforr None Estima	n Needs m. Deficiencies ted Construction Cost: Priority	12.2 0.05 0.1 4 14.64 \$0.00
Recommended Work					/ 		6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Trusses/Arches Verticals/diagonals Verticals Steel Channel Benign Hot dip galvanizing Exc	Good Fair 48	Poor	Length: Width: Height: Count: Total QL Limited	lantity: Inspectio Maint. None Perforr None Estima	n	0.04 0.08 1.2 48 48 48 50.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Trusses/Arches Verticals/diagonals Diagonals Steel Channel Benign Hot dip galvanizing Exc	Good Fair 128	Poor	Length: Width: Height: Count: Total Qu Limited I	antity: nspection Maint. I None Perform None Estimat	n	1.34 0.05 0.08 128 128 128 128 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent

STRUCTURE ID BR6_

Repair and Rehabilitation Required							
Element Group	Element Name	Comments Repair/Rehabilitation	Priority (Years)	Estimated Cost			
Sidewalks/curbs	Curbs	Replace curbs with replacement of wearing surface.	1-5 yrs	\$5,000.00			
Decks	Wearing surface	Replace whole wearing surface. Clean wearing surface as maintenance.	1-5 yrs	\$10,000.00			
Decks	Deck top	Replace timber deck top.	1-5 yrs	\$15,000.00			
			Total	\$30,000.00			

Associated Work

	Comments	Estimated Cost
Approaches		\$0.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other		\$0.00
Contingencies		\$0.00
	Total Estimated Const. Cost	\$30,000.00

Justification

STRUCTURE NUMBER: BR6



Roadway looking West



Damaged guide rail at Northeast

STRUCTURE NUMBER: BR6



Damaged guide rail at Southwest



South truss

STRUCTURE NUMBER: BR6



North truss



Rotting and splitting of wearing surface

STRUCTURE NUMBER: BR6



Damaged curb (North side)



North elevation

STRUCTURE NUMBER: BR6



West abutment



East abutment

STRUCTURE NUMBER: BR6



Soffit



Split soffit timbers

STRUCTURE NUMBER: BR6



Split soffit timbers



Debris at bearings (Typ.)

STRUCTURE NUMBER: BR6



Localized spalls on Southeast ballast wall



Moisture and rotting of soffit

STRUCTURE NUMBER: BR6



East Abutment

D.M. Wills Associates Ltd.

STRUCTURE ID BR7_

Inventory Dat	a	
Structure Name Main Hwy/Road #	Pevency Road Bridge	Crossing Type Non-navig water
Road Name	Pevency Road	
Structure Location	South of Farm View Road	
Latitude		Longitude
Owner(s)	Township of Strong	
Heritage Designation	Not Cons	
Road Class:	Local	
MTO Region	Northern	
MTO District	Huntsville	Posted Speed 80 No of Lanes 1
Old County	Parry Sound	AADT 0 % Trucks 0
Geographic Twp	Township of Strong	Special Routes: Transit 🗌 Truck 🗌 School 🔲 Bicycle 📋
Structure Type	I-beam or Girders	Detour Length Around Bridge (km)
Total Deck Length	15.05 (m)	Fill on Structure 0 (m)
Overall Str Width	6.05 (m)	Skew Angle (Degrees)
Total Deck Area	<u>91.0525</u> (sq. m)	Direction of Structure
Roadway Width	5.45 (m)	No of Spans
Span Lengths	13.65	(m)
Historical Dat	a	Last Biennial Inspection: 11/5/2016
Current Load Limit:	(tonnes)	Last BridgeMaster Inspection:
Load Limit By-Law	#:	Last Evaluation:
By-Law Expiry Date		Last Underwater Inspection:
Min Vertical Clearar	nce: (m)	Last Condition Survey:
Rehab History: (Dat	e/description)	
New superstr	ucture on older substructure.	
1		



Field Inspection Information

Inspected By: D.M. Wills Associates Ltd. Inspector: Ghassan Zanzoul, P. Eng.	
Inspector: Ghassan Zanzoul, P. Eng.	
Others in Party: Without McDanault	
Others in range Michael McDonnell	
Equipment Used: Camera, tape measure.	
Weather: Sunny	

Additional Investigations Required

	Priority	Estimated Cost
Detailed Deck Condition Survey:		
DART Survey		
Detailed Coating Condition Survey:		
Underwater Investigation:		
Fatigue Investigation:		
Seismic Investigation:		
Structure Evaluation:		
Load Posting:Estimated Load	Total Cost	
Next Date Inspection:	6/26/2020	

BCI 74.72

Special Notes:

Suspected Performance Deficiencies

- 00 None
- Load carrying capacity 01
- Excessive deformations (deflections rotations) 02
- 03 Continuing settlement
- Continuing movements 04 05 Seized bearings

Maintenance Needs

- 01 Lift and Swing Bridge Maintenance
- 02
- Bridge Cleaning Bridge Handrail Maintenance 03
- Painting Steel Bridge Structures Bridge Deck Joint Repair 04
- 05
- 06 Bridge Bearing Maintenance

- Bearing not uniformly loaded/unstable
 Jammed expansion joint
 Pedestrian/vehicutar hazard
- Rough riding surface Surface ponding 09
- 10 11
- Deck drainage
- 07 Repair to Structural Steel
- Repair of Bridge Concrete 08
- 09 Repair of Bridge Timber
- 10 Bailey Bridges Maintenence
- 11 Animal/Pest Control 12 Bridge Surface Repair

- 12 Slippery surfaces
- Flooding/channel blockage 13
- 14 Undermining of foundation
- 15 Unstable embankments
- Other 16
- 13 Erosion Control at Bridges
- 14 Concrete Sealing
- 15 Rout and Seal
- 16 Bridge deck Drainage
- 17 Other



STRUCTURE ID BR7

Element Dat	ta							
Element Group: Element Name: Location: Material: Element Type: Environment: Protection Syste Condition Data: Comments	em: Units Sq. m	Decks Soffit - Thin Slab Interior Cast-in-place co Benign Exc	Good 47.25	Fair	Poor	Length: Width: Height: Count: Total Qu Limited	Antity:	12.5 1.89 2 47.25 \$0.00 None
Recommended \	Work						i nony	6-10 yrs
								Within 1 yr Urgent
Element Group:		Abutments		1		Length:		0.6
Liement Name:		Bearings				Vviain: Height:		0.6
Material:						Count:		6
Element Type:		Elastomeric pad				Total Qu	iantity:	6
Environment:		Benign				Limited	Inspection	
Protection Syste	im:	None					Maint, Needs	
Condition Data:	Units	Exc	Good	Fair	Poor		None	
	Each		6				Perform. Deficiencies	
Comments							None	
							Estimated Construction Cost:	\$0.00
Recommended \	Work						Priority	None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group:		Abutments				Length:		
Element Name:		Abutment walls				Width:		6.05
Location:		Each End		1		Height:		2.4
Material:		Cast-in-place col	ncrete			Count:		2
Element Type:		Conventional clo	sed			Total QL	antity:	29.04
Environment:		Benign				Limited	Inspection	
Protection Syste	m:						Maint. Needs	
Condition Data:	Units	Exc	Good	Fair	Poor		None	
Comments	Sq. m		28.04	1	L		Perform. Deficiencies	
Light scaling on i	north al	butment medium	scaling on sou	th abutme	nt Undermini	ng at South	Fotimeted Construction Cost	
abutment.	nonin a	satinent, meatain	oouning off oou	ur abatrio		ng at oouth	Estimated Construction Cost: Priority	\$10,000.00 None
Recommended V	Work							6-10 yrs
Repair undermin	ing.							Within 1 yr Urgent

S	TRI	ЈСТ	URE	ID	BR7

Element Group:	Abutments		Length:		3.15
Element Name:	Wingwalls		Width:		
Location:			Height:	· · · · · ·	1.3
Material:	Cast-in-place concrete		Count:		4
Element Type:	Reinforced concrete		Total Qui	antity:	16.37
Environment:	Benign		Limited I	nspection	!
Protection System:				theint Neede	
Condition Data: Units	Exc Good	Fair Poor		None	
Sq. m	16.37			Perform Deficiencies	
Comments			l de la constante de	None	
All in good condition wit	th minor honeycombing.			Estimated Construction Cost:	\$0.00
				Driority	Nono
 				riony	6-10 vrs
					1-5 yrs
					Within 1 yr
					Urgent
			J		
Element Group:	Approaches		Length:		6
Element Name:	Approach slabs		Width:		5.45
Location:	Each End		Height:		0.25
Material:	Cast-in-place concrete		Count:		2
Element Type:			Total Qua	antity:	65.39
Environment:	Moderate		Limited Ir	nspection	
Protection System:				Maint. Needs	
Condition Data: Units	Exc Good	Fair Poor		None	
<u>Sq. m</u>	65.39			Perform. Deficiencies	
Comments	<u> </u>			None	
Light scaling and snow	plow abrasion.			Estimated Construction Cost:	\$0.00
				Priority	None
Recommended Work					6-10 yrs
					1-5 yrs
					Urgent
L					
Element Group:	Parriara		i denathr		00.0
Element Name:	Barrier/Parapet Walls		Length:	· · · · · · · · · · · · · · · · · · ·	20.8
Location:			Volutit.	·	0.20
Material:	Cast-in-place concrete		Count:		0.93
Element Type	Parapet Wall with single railing		Total Qua	intity:	87.78
Environment:	Benjan	· · · · · · · · · · · · · · · · · · ·	Limited In	spection	
Protection System:					
Condition Data: Units	Exc Good	Fair Poor		Maint, Needs	
Sg. m	87.38	0.5 0.5		None	
Comments				None	
Minor spalls on all four o	corners.			Estimated Construction Cost:	SE 000 00
					\$5,000.00
L				Priority	None
Recommended Work					1-5 vrs
Repair concrete spalls.					Within 1 yr
					Urgent
L					L



S	TF	RI	JC	TU	IRE	ID	
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		7	ų
		1	
_	2.0		

Element Group:	Barriers				Length:			19.2
Element Name:	Hand Railings				Width:			
Location:					Height:	_		
Material:	Steel				Count:			2
Element Type:	Single Railing				Total Qu	antity:		38.4
Environment:	Benign				Limited I	nspection		
Protection System:	Hot dip galvanizir	ng				Maint M		
Condition Data: Units	Exc	Good	Fair	Poor		Bridge H	eeus Iandrail Maintenance	
m		38.4				Didger		
Comments			/L			None	. Deficiencies	
Missing end can at Sou	thwest and Northe	ast ends				Tatland		
million and an and an and						Estimate	ed Construction Cost:	\$0.00
							Priority	None
Recommended Work								6-10 yrs
Replace missing end ca	aps as maintenanc	e.						1-5 yrs
								Within 1 yr
								Urgent
Element Croup:	Reame/MI E's				Longth			
Element Name:	Diaphroama		Middle		Length.	-		2
Element Name.	Diaphragms		wilddie		vviath:	-		0.05
Location:	1.47				Height:			0.25
material:	vveathering steel				Count:			4
	I-type				Total Qu	antity:		4
Element Type:					Limited I	nspection		
Element Type: Environment:	Benign					the bar second	(manual	
Element Type: Environment: Protection System:	Benign					Maint. N	eeds	
Element Type: Environment: Protection System: Condition Data: Units	Benign Exc	Good	Fair	Poor		Maint. N	eeds	
Element Type: Environment: Protection System: Condition Data: Units Each	Enign Exc	Good	Fair	Poor		Maint. N None Perform.	eeds	
Element Type: Environment: Protection System: Condition Data: Units Each Comments	Exc	Good	Fair	Poor		Maint. N None Perform. None	eeds . Deficiencies	
Element Type: Environment: Protection System: Condition Data: Units Each Comments	Exc	Good	Fair	Poor		Maint. N None Perform. None Estimate	eeds Deficiencies	\$0.00
Element Type: Environment: Protection System: Condition Data: Units Each Comments	Exc	Good	Fair	Poor		Maint. N None Perform. None Estimate	eeds Deficiencies	\$0.00
Element Type: Environment: Protection System: Condition Data: Units Each Comments	Exc	Good	Fair	Poor		Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Exc	Good	Fair	Poor		Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work	Exc	Good	Fair	Poor		Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr
Element Type: Environment: Protection System: Condition Data: Units <u>Each</u> Comments Recommended Work	Exc	Good 4	Fair	Poor		Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work		Good 4	Fair	Poor		Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group:	Exc Exc Beams/MLE's	Good 4	Fair	Poor	Length:	Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name:	Exc Exc Beams/MLE's Girders	Good 4	Fair	Poor	Length: Width:	Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location:	Exc Exc Beams/MLE's Girders	Good 4	Fair	Poor	Length: Width: Height:	Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material:	Exc Exc Beams/MLE's Girders Weathering steel	Good 4	Fair	Poor	Length: Width: Height: Count:	Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type:	Exc Exc Beams/MLE's Girders Weathering steel I-type	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu	Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment:	Exc Exc Beams/MLE's Girders Weathering steel I-type Benign	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Exc Exc Beams/MLE's Girders Weathering steel I-type Benign	Good	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	Benign Exc Exc Beams/MLE's Girders Weathering steel I-type Benign	Good	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	Benign Exc Beams/MLE's Girders Weathering steel I-type Benign Exc	Good Good Good	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate antity: nspection Maint. N None	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m	Beams/MLE's Girders Weathering steel I-type Benign Exc	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate Estimate antity: nspection Maint. N None Perform.	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sq. m	Exc Exc Beams/MLE's Girders Weathering steel I-type Benign Exc	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate Estimate antity: nspection Maint. N None	eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m	Beams/MLE's Girders Weathering steel I-type Benign Exc	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate Estimate antity: nspection Maint. N None Estimate	eeds Deficiencies ed Construction Cost: Priority eeds Deficiencies Deficiencies ed Construction Cost:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4 \$0.00
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m	Beams/MLE's Girders Weathering steel I-type Benign Exc	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate antity: nspection Maint. N None Estimate	eeds Deficiencies ed Construction Cost: Priority eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4 \$0.00 None
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments	Beams/MLE's Girders Weathering steel I-type Benign Exc	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate antity: nspection Maint. N None Estimate	eeds Deficiencies ed Construction Cost: Priority eeds Deficiencies Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4 \$0.00 None 6-10 yrs
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments	Beams/MLE's Girders Weathering steel I-type Benign Exc	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate antity: nspection Maint. N None Estimate	eeds Deficiencies ed Construction Cost: Priority eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4 \$0.00 None 6-10 yrs 1-5 yrs
Element Type: Environment: Protection System: Condition Data: Units Each Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments	Beams/MLE's Girders Weathering steel I-type Benign Exc	Good 4	Fair	Poor	Length: Width: Height: Count: Total Qu Limited I	Maint. N None Perform. None Estimate antity: nspection Maint. N None Estimate	eeds Deficiencies ed Construction Cost: Priority eeds Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 15 0.24 0.6 3 86.4 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr

STRUCTURE ID B	R7
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······											
Element Group:	Decks				Le	ength:				12.5	
Element Name:	Soffit - Thin Slab				W	/idth:		· · · · · · · · · · · · · · · · · · ·		1.5	
Location:	Exterior				H	eight:			-		
Material:	Cast-in-place con	crete			C	ount:				2	
Element Type:					Тс	otal Qua	antity:			37.5	
Environment:	Benign	···			Li	mited In	nspectio	on 🗍			
Protection System:							Moint	Needa			
Condition Data: Units	Exc	Good	Fair	Poor			None	needs			
Sq. m		37.5					Porfor	m Doficionaian			
Comments		I L		L			None	III. Deliciencies			
							Estim	ated Construction (Cost:		00.02
									at a site of		\$0.00
								PI	riority	None	
Recommended Work					·					1-5 vrs	
										Within 1	yr
										Urgent	
										<u> </u>	
Element Group:	Decks				Le	enath:				15.05	
Element Name:	Deck top				W	/idth:				6.05	
Location:					He	eiaht:					
Material:	Cast-in-place con	crete			Ca	ount:				1	
Element Type:	Cast-in-place con	c on supports.	composite	,	Тс	otal Qua	ntity:			91.05	
Environment:	Benign				Lir	mited In	spectio	└── >n ┌─┐			
Protection System:								L.			
Condition Data: Units	Exc	Good	Fair	Poor		ſ	Bridge	Cleaning			
Sq. m		91.05][l	Dorfor	n Deficiencios			
Comments		ł L	J (ſ	None	n. Denciencies			ı
Build up of debris on de	ck top.					'	Estima	ted Construction (Cost:		\$0.00
						i			d a site e	L	40.00
Deserves and ad March								PI	ionity	6-10 vrs	
Recommended work										1-5 vrs	[
Clean deck top as main	lenance.									Within 1	yr
						1				Urgent	
Element Group:	Embankments & S	Streams			Le	ngth:					
Element Name:	Embankments				Wi	idth:					
Location:	Each Quadrant		L		He	eight:	Ì				
Material:		-			Co	ount:				1	
Element Type:					То	tal Quar	ntity:			1	
Environment:	Benign				Lin	nited Ins	spectio	n 🗌		,	
Protection System:	None						Maint	Noode			
Condition Data: Units	Exc	Good	Fair	Poor		ĺ	None	140003			
Each		4					Perform	n Deficiencies		-	
Comments						Ĺ	None				
						'	Estima	ted Construction C	Cost:		\$0.00
										A La ma	+0.00
								Pri	ющу	6 10 vrs	
Recommended Work]				1-5 vrs	
										Within 1	yr
										Urgent	
L											

STRUCTURE	ID	BR7
		-

Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Comments Recommended Work	Embankments & Streams L Streams and Waterways W Under Bridge H C T Benign L None 100	ength: Vidth: leight: count: iotal Quantity: imited Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: \$0.00 Priority None 6-10 yrs 1-5 yrs Within 1 yr			
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units	Foundations La Foundation (below ground level) M Cast-in-place concrete C Spread T Benign Li None Exc Good Fair Poor	Urgent Urgent Urgent Urgent Urgent Urgent Urgent Urgent			
Undermining at South. Recommended Work	Repair is recommended under abutment wall.	Estimated Construction Cost: \$0.00 Priority None 6-10 yrs 1-5 yrs Within 1 yr Urgent			
Element Group; Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Each	Accessories La Signs W Steel C Steel C Benign Li Exc Good Fair Poor	ength: /idth: eight: ount: ount: bital Quantity: Maint. Needs Other Perform. Deficiencies			
Repair and Rel	nabilitation Required				
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Element Group	Element Name	Comments Repair/Rehabilitation	Priority (Years)	Estimated Cost	
Barriers	Barrier/Parapet Walls	Repair concrete spalls.	1-5 yrs	\$5,000.00	
Abutments	Abutment walls	Repair undermining.	1-5 yrs	\$10,000.00	
			Total	\$15,000.00	

Associated Work

	Comments	Estimated Cost
Approaches		\$0.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other		\$0.00
Contingencies		\$0.00
	Total Estimated Const. Co	st \$15,000.00

Justification

STRUCTURE ID

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BR7_

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STRUCTURE NUMBER: BR7



Roadway looking North



East parapet wall

STRUCTURE NUMBER: BR7



Potholes at South approach



West parapet wall

STRUCTURE NUMBER: BR7



Spall at Southwest



Spall at Northwest

STRUCTURE NUMBER: BR7



Northwest wing wall (Typ.)



West elevation

STRUCTURE NUMBER: BR7



Bearing (Typ.)



Soffit

STRUCTURE NUMBER: BR7



South abutment



Undermining of South abutment

STRUCTURE NUMBER: BR7



North abutment



East elevation

STRUCTURE ID BR8_

Inventory Dat	a		
Structure Name	Black Creek Road Culv	ert	
Main Hwy/Road #	On	Under	Crossing Type Non-navig water
Road Name	Black Creek Road		
Structure Location	500m west of HWY 11		
Latitude			Longitude
Owner(s)	Township of Strong		
Heritage Designation	Not Cons		
Road Class:	Arterial		
MTO Region	Northern		
MTO District	Huntsville		Posted Speed 80 No of Lanes 2
Old County	Parry Sound		AADT 0 % Trucks 0
Geographic Twp	Township of Strong		Special Routes: Transit 🗋 Truck 🗌 School 🗌 Bicycle 🗋
Structure Type	Rectangular Culvert	1	Detour Length Around Bridge (km)
Total Deck Length		6.2 (m)	Fill on Structure 0.6 (m)
Overall Str Width		42.1 (m)	Skew Angle 30 (Degrees)
Total Deck Area		261.02 (sq. m)	Direction of Structure North/South
Roadway Width		7.5 (m)	No of Spans 1
Span Lengths	6.20		(m)
Historical Dat	a		
Year Built:			Last Biennial Inspection: 11/5/2016
Current Load Limit:		(tonnes)	Last BridgeMaster Inspection:
Load Limit By-Law	#:		Last Evaluation:
By-Law Expiry Date	:		Last Underwater Inspection:
Min Vertical Cleara	nce:	(m)	Last Condition Survey:
Rehab History: (Dat	e/description)		

Field Inspection Information

Date of Inspection	: 6/26/2018	Temperature:	21° C	
Inspected By:	D.M. Wills Associates Ltd.			
Inspector:	Ghassan Zanzoul, P. Eng.			
Others in Party:	Michael McDonnell			
Equipment Used:	Camera, tape measure.			
Weather:	Sunny			

Additional Investigations Required

	Priority	Estimated Cost
Detailed Deck Condition Survey: DART Survey Detailed Coating Condition Survey: Underwater Investigation: Fatigue Investigation: Seismic Investigation: Structure Evaluation: Load Postino:Estimated Load		
Next Date Inspection:	6/26/2020	
BCI 75 Special Notes:		

Suspected Performance Deficiencies

- 00 None
- 01 Load carrying capacity
- 02 Excessive deformations (deflections rotations)
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

- Lift and Swing Bridge Maintenance 01
- 02
- Bridge Cleaning Bridge Handrail Maintenance 03
- 04 Painting Steel Bridge Structures
- 05 Bridge Deck Joint Repair
- 06 Bridge Bearing Maintenance

- 06 Bearing not uniformly loaded/unstable 07
- Jammed expansion joint
- 08 Pedestrian/vehicular hazard
- 09 Rough riding surface 10 Surface ponding
- 11 Deck drainage
- 07 Repair to Structural Steel
- 80 Repair of Bridge Concrete
- 09 Repair of Bridge Timber
- 10 Bailey Bridges - Maintenance
- 11 Animal/Pest Control
- 12 Bridge Surface Repair

- 12 Slippery surfaces
- 13 Flooding/channel blockage
- 14 Undermining of foundation
- 15 Unstable embankments
- 16 Other
- 13 Erosion Control at Bridges
- Concrete Sealing 14
- 15 Rout and Seal
- 16 Bridge deck Drainage
- 17 Other



STRUCTURE ID BR8

Element Data						
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit m Comments	Barriers Railing Systems North Wood post and 3 c Benign s Exc	able Good F. 100	air Po	Length: Width: Height: Count: Total Q Limited	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost:	100
Recommended Work					Priority	None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Comments Recommended Work	Embankments & St Streams and Water Under Bridge Benign None S Exc	reams ways	ir Po	Length: Width: Height: Count: Total Q Limited	uantity: Inspection Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	1 1 1 \$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Eact Comments	Embankments & St Embankments All Benign None Exc	Good Fa	ir Po	Length: Width: Height: Count: Total Qu Limited	Jantity:	4 4 5
Recommended Work					Priority	None 6-10 yrs 1-5 yrs Within 1 yr Urgent

STRUCTURE ID BR8_

Element Group:	Culverts	Length:		5.5
Element Name:	Barrels	Width:		42.1
Location:		Height:		3
Material:	Precast concrete	Count:		1]
Element Type:	Box	Total Quantity:		694.65
Environment:	Benign	Limited Inspection		
Protection System:		Maint, N	eeds	
Condition Data: Units	Exc Good Fair Poor	None		
Sq. m	694.65	Perform.	Deficiencies	
Comments		None		
Water level too high.		Estimate	d Construction Cost:	\$0.00
			Priority	None
Recommended Work			·	6-10 yrs
				1-5 yrs
				Within 1 yr
				Urgent

	Comments	Estimated Cost
Approaches		\$0.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other		\$0.00
Contingencies		\$0.00
	Total Estimated Const. Cost	\$0.00

Justification

STRUCTURE NUMBER: BR8



Roadway Looking West



North inlet

STRUCTURE NUMBER: BR8



Barrel looking South



Top of culvert at North end

STRUCTURE NUMBER: BR8



South end (Outlet)



Barrel looking South

STRUCTURE ID BR11

Structure Name	Rodeo Road Culvert			
Main Hwy/Road #	On	Under	Crossing Type No	pn-navig water
Road Name	Rodeo Road			
Structure Location	South of HWY 124			
Latitude			Longitude	
Owner(s)	Township of Strong			
Heritage Designation	Not Cons]		
Road Class:	Local]		
MTO Region	Northern]		
MTO District	Huntsville]	Posted Speed 8	0 No of Lanes 2
Old County	Parry Sound]	AADT	0 % Trucks 0
Geographic Twp	Township of Strong		Special Routes: Transit	Truck School Bicycle
Structure Type	Arch Culvert		Detour Length Around Bridge	(km)
Total Deck Length		3.3 (m)	Fill on Structure	0.6 (m)
Overall Str Width		22 (m)	Skew Angle	0 (Degrees)
Total Deck Area		72.6 (sq. m)	Direction of Structure	East/West
Roadway Width		7 (m)	No of Spans	1
Span Lengths	3.3			(m)
Historical Dat	a	· · · ·		, · · ·
Historical Dat	a	2015	Last Bienniai Inspectio	n: 11/5/2016
Historical Dat Year Built: Current Load Limit:	a	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp	n:11/5/2016
Historical Dat Year Built: Current Load Limit: Load Limit By-Lawa	a	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation:	n:11/5/2016
Historical Dat Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date	:a	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe	n: 11/5/2016
Historical Dat Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearar	#:	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe Last Condition Survey:	n: 11/5/2016 pection:
Historical Dat Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearar Rehab History: (Dat	ta	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe Last Condition Survey:	n: 11/5/2016
Historical Dat Year Built: Current Load Limit: Load Limit By-Law a By-Law Expiry Date Min Vertical Clearar Rehab History: (Dat	(a	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe Last Condition Survey:	n:11/5/2016 pection:
Historical Dat Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearar Rehab History: (Dat	ta	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe Last Condition Survey:	n:11/5/2016 pection:
Historical Dat Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearar Rehab History: (Dat	ta	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe Last Condition Survey:	n: 11/5/2016
Historical Dat Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearar Rehab History: (Dat	:a	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe Last Condition Survey:	In:11/5/2016 Dection:
Historical Dat Year Built: Current Load Limit: Load Limit By-Law By-Law Expiry Date Min Vertical Clearar Rehab History: (Dat	ta	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe Last Condition Survey:	n:11/5/2016 pection:
Historical Dat Year Built: Current Load Limit: Load Limit By-Law a By-Law Expiry Date Min Vertical Clearar Rehab History: (Dat	ta	2015 (tonnes)	Last Biennial Inspectio Last BridgeMaster Insp Last Evaluation: Last Underwater Inspe Last Condition Survey:	n: 11/5/2016 pection:

Field Inspection Information

Date of Inspection:	6/26/2018	Temperature:	21° C
Inspected By:	D.M. Wills Associates Ltd.		
Inspector:	Ghassan Zanzoul, P. Eng.		
Others in Party:	Michael McDonnell		
Equipment Used:	Camera, tape measure.		
Weather:	Sunny		

Additional Investigations Required

	Priority	Estimated Cost
Detailed Deck Condition Survey:		
DART Survey		
Detailed Coating Condition Survey:		
Underwater Investigation:		
Fatigue Investigation:		
Seismic Investigation:		
Structure Evaluation:		
Load Posting:Estimated Load	Total Cost	
Next Date Inspection:	6/26/2020	

BCI

Special Notes:

Suspected Performance Deficiencies

- 00 None
- 01 Load carrying capacity
- 02 Excessive deformations (deflections rotations)

75

- 03 Continuing settlement
- 04 Continuing movements 05
- Seized bearings

Maintenance Needs

- Lift and Swing Bridge Maintenance 01
- Bridge Cleaning 02

WILLS

- 03 Bridge Handrail Maintenance
- 04 Painting Steel Bridge Structures
- 05 Bridge Deck Joint Repair
- 06 Bridge Bearing Maintenance

- 06 Bearing not uniformly loaded/unstable
- 07 Jammed expansion joint
- 80 Pedestrian/vehicular hazard
- 09 Rough riding surface
- 10 Surface ponding
- 11 Deck drainage
- 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

- 12 Slippery surfaces
- 13 Flooding/channel blockage
- Undermining of foundation 14
- 15 Unstable embankments
- 16 Other
- Erosion Control at Bridges 13 Concrete Sealing 14
- Rout and Seal 15
- 16 Bridge deck Drainage
- 17 Other



STRUCTURE ID BR11

Element Data				
Element Group:	Culverts	Lenath [.]		22
Element Name:	Barrels	Width:		3.3
Location:		Height:		2.08
Material:	Steel	Count:		1
Element Type:	Pipe Arch	Total Qu	antity:	189.42
Environment:	Benign	Limited I	nspection	
Protection System:	Other		Maint Maada	
Condition Data: Uni	its Exc Good Fair Poor		None	
Sq	m 189.42		Porform Deficiencies	
Comments			None	
			Estimated Construction Cost:	1 0 00
			Estimated Construction Cost.	\$0.00
			Priority	None
Recommended Work	(6-10 yrs
				Within 1 vr
				Urgent
Element Group:	Embankments & Streams	Length:		
Element Name:	Streams and Waterways	Width:		
Location:	Under Bridge	Height:		
Material:		Count:		1
		Total Our	antity	1
Element Type:		Total Qua	arrendy.	
Element Type: Environment:	Benign	Limited In	nspection	
Element Type: Environment: Protection System:	Benign None	Limited In	nspection	
Element Type: Environment: Protection System: Condition Data: Uni	Benign None ts Exc Good Fair Poor	Limited In	Maint. Needs	
Element Type: Environment: Protection System: Condition Data: Uni	Benign None ts Exc 100	Limited In	Maint. Needs None Perform. Deficiencies	
Element Type: Environment: Protection System: Condition Data: Uni % Comments	Benign None ts Exc Good Fair Poor 100		Maint. Needs None Perform. Deficiencies None	
Element Type: Environment: Protection System: Condition Data: Uni % Comments	Benign None ts Exc Good Fair Poor 100		Maint, Needs None Perform, Deficiencies None Estimated Construction Cost:	\$0.00
Element Type: Environment: Protection System: Condition Data: Uni % Comments	Benign None ts Exc Good Fair Poor 100		Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00
Element Type: Environment: Protection System: Condition Data: Uni Comments	Benign None ts Exc Good Fair Poor 100		Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work	Benign None ts Exc Good Fair Poor 100		Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work	Benign None ts Exc Good Fair Poor 100		Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work	Benign None ts Exc Good Fair Poor 100		Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Type: Environment: Protection System: Condition Data: Uni	Benign None ts Exc Good Fair Poor 100		Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work	Benign None ts Exc Good Fair Poor 100	Length:	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Group:	Benign None ts Exc 100	Length: Width:	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location:	Benign None ts Exc 100 100	Length: Width: Height:	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material:	Benign None ts Exc 100	Length: Width: Count:	Maint. Needs None Perform. Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type:	Benign None ts Exc 100	Length: Width: Height: Count: Total Qua	Analy Maint, Needs None Perform, Deficiencies None Estimated Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment:	Benign Second Fair Poor ts Exc Good Fair Poor 100 100 100 100 100 Embankments & Streams Embankments All 100 100 Benign 100 100 100 100 100	Length: Width: Height: Count: Total Qua Limited In	Anity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2 2
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Benign Second Fair Poor ts Exc Good Fair Poor 100 100 100 100 100 Embankments & Streams Embankments All 100 100 Benign None 100 100 100 100	Length: Width: Height: Count: Total Qua Limited In	Anity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit	Benign Second Fair Poor ts Exc Good Fair Poor 100 100 100 100 100 Embankments & Streams Embankments All 100 100 Benign None 100 100 100 100 S Exc Good Fair Poor	Length: Width: Height: Count: Total Qua Limited In	Anity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2 2
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit	Benign Second Fair Poor ts Exc Good Fair Poor 100 100 100 100 100 Embankments & Streams Embankments All 100 100 Benign 100 100 100 100 100 S Exc Good Fair Poor 1 2 100 100 100	Length: Width: Height: Count: Total Qua Limited In	Anity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit Eac	Benign Second Fair Poor ts Exc Good Fair Poor 100 100 100 100 100 100 Embankments & Streams Embankments All 100 100 100 100 Benign Image: Streams Image: S	Length: Width: Height: Count: Total Qua Limited In	Anity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2 2
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit Comments Minor erosion at Sout	Benign Second Fair Poor ts Exc Good Fair Poor 100 100 100 100 100 Embankments & Streams Embankments All Benign 100 100 100 S Exc Good Fair Poor n 2 100 100 100 100	Length: Width: Height: Count: Total Qua Limited In	Anity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2 2 2 30.00
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit Comments Minor erosion at Sout	Benign Second Fair Poor 100 100 100 100 100 100 Embankments & Streams 100 100 Embankments 100 100 Benign 100 100 None 100 100 s Exc Good Fair Poor 1 2 heast. 100	Length: Width: Height: Count: Total Qua Limited In	Anity:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2 2 2 2 0.000
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit Comments Minor erosion at Sout	Benign Second Fair Poor 100 100 100 100 100 100 Embankments & Streams 100 100 Embankments & Streams 100 100 Benign 100 100 None 100 100 100 S Exc Good Fair Poor 1 2 100 100 100	Length: Uiai Qui Limited In Length: Width: Height: Count: Total Qua Limited In	Anity: An	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2 2 2 3 0.00 None 6-10 yrs
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unit Comments Minor erosion at Sout	Benign Second Fair Poor 100 100 100 100 100 100 Embankments & Streams 100 100 Embankments & Streams 100 100 Benign 100 100 100 None 100 100 100 100 S Exc Good Fair Poor heast. 100 100 100 100	Length: Width: Height: Count: Total Qua Limited In	Analy:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2 2 2 2 3 0.00 None 6-10 yrs 1-5 yrs
Element Type: Environment: Protection System: Condition Data: Uni Comments Recommended Work Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Unil Comments Minor erosion at Sout Recommended Work	Benign Second Fair Poor 100 100 100 100 100 100 Embankments & Streams 100 100 Embankments & Streams 100 100 Benign 100 100 100 S Exc Good Fair Poor heast. 2 100 100 100	Length: Width: Height: Count: Total Qua Limited In	Analy:	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent 2 2 2 2 2 3 0.00 None 6-10 yrs 1-5 yrs Within 1 yr

STRUCTURE ID BR11

Element Group:	Approaches		Length:		15.3
Element Name:	Wearing surface		Width:		10
Location:	Each End	· · ·	Height:		
Material:	Gravel	· · -	Count:		2
Element Type:			Total Quantity:		306
Environment:	Severe		Limited Inspection	n []	<u> </u>
Protection System:			1 Maint	Needs	
Condition Data: Units	Exc Go	od Fair Poor	None		
Sq. m		306	Perfor	m. Deficiencies	
Comments			None		
Minor erosion at Southe	east.		Estima	ated Construction Cost:	\$0.00
				Priority	None
Recommended Work					6-10 yrs 1-5 yrs Within 1 yr Urgent

	Comments	Estimated Cost
Approaches		\$0.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way		\$0.00
Environmental Study		\$0.00
Other		\$0.00
Contingencies		\$0.00
	Total Estimated Const. Cost	\$0.00
		<u> </u>

STRUCTURE NUMBER: BR11



Roadway looking North



Minor erosion of embankment at Southeast

STRUCTURE NUMBER: BR11



Barrel looking West



Barrel wall (Typ.)

STRUCTURE NUMBER: BR11



Outlet (East end)



Inlet (West end)

STRUCTURE NUMBER: BR11



Barrel looking East

STRUCTURE ID BR12_

Inventory Dat	а				
Structure Name	Rodeo Road Bri	dge			
Main Hwy/Road #		On 🖌	Under 🗌	Crossing Type Navig wate	r .
Road Name	Rodeo Road			<u> </u>	
Structure Location	1km south of Bla	ack Creek Ro	ad		
Latitude				Longitude	
Owner(s)	Township of Stro	ong			
Heritage Designation	Not Cons				
Road Class:	Local				
MTO Region	Northern				
MTO District	Huntsville			Posted Speed 80 1	No of Lanes 2
Old County	Parry Sound			AADT 0	% Trucks 0
Geographic Twp	Township of Stro	ong		Special Routes: Transit 📙 Truc	k 🗌 School 📋 Bicycle 📖
Structure Type	Rigid Frame, Ve	rtical legs		Detour Length Around Bridge	(km)
Total Deck Length			(m)	Fill on Structure	2.7 (m)
Overall Str Width			(m)	Skew Angle	(Degrees)
Total Deck Area			(sq. m)	Direction of Structure	/West
Roadway Width			6 (m)	No of Spans	
Historical Dat	a				
Year Built:]	Last Biennial Inspection:	11/5/2016
Current Load Limit:			(tonnes)	Last BridgeMaster Inspection:	
Load Limit By-Law	#:		_	Last Evaluation:	
By-Law Expiry Date	:]	Last Underwater Inspection:	
Min Vertical Cleara	nce:] (m)	Last Condition Survey:	
Rehab History: (Dat	le/description)				



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wumeipai Structure inspecti	on rorm		SIRUCI	UKEID	BK12
Field Inspection Information					
Date of Inspection:6/26/2018Inspected By:D.M. Wills AssInspector:Ghassan Zanzoul,Others in Party:Michael McDonnellEquipment Used:Camera, tape measWeather:Sunny	ociates Ltd. P. Eng. sure.	Temperature:	21° C		
Additional Investigations Req	uired				
Detailed Deck Condition Survey: DART Survey Detailed Coating Condition Survey: Underwater Investigation: Fatigue Investigation: Seismic Investigation: Structure Evaluation: Load Posting:Estimated Load Next Date Inspection: BCI 58.93 Special Notes:	Priority	Estimated Cos	st		
Suspected Performance Deficiencies	;				
 None Load carrying capacity Excessive deformations (deflections rotations) Continuing settlement Continuing movements Seized bearings 	 D6 Bearing not unifor D7 Jammed expansion D8 Pedestrian/vehict D9 Rough riding surf. 10 Surface ponding 11 Deck drainage 	rmly loaded/unstable on joint ılar hazard ace	12 Slip 13 Floc 14 Und 15 Uns 16 Othe	pery surfaces iding/channel blocka ermining of foundatik table embankments er	ge on
Maintenance Needs					
 Lift and Swing Bridge Maintenance Bridge Cleaning Bridge Handrail Maintenance Painting Steel Bridge Structures Bridge Deck Joint Repair Bridge Bearing Maintenance 	 07 Repair to Structu 08 Repair of Bridge 09 Repair of Bridge 10 Bailey Bridges - M 11 Animal/Pest Cont 12 Bridge Surface R 	ral Steel Concrete Timber Maintenance trol epair	13 Eros 14 Cond 15 Rout 16 Bridg 17 Othe	ion Control at Bridge crete Sealing t and Seat ge deck Drainage tr	25



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STRUCTURE ID BR12

Element Data									
Element Data Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Un Severe undermining Recommended Worl Remove. Culvert to t	Abutments Abutment walls Each End Masonry Benign its Exc .m under all walls.	Good 24.4	Fair 10]	Poor 1	0	Length: Width: Height: Count: Total Qu Limited I	Antity: Inspection Maint. Needs Maint. Needs None Perform. Deficiencies Undermining of foundat Estimated Construction	ion Cost: Priority	16 2 2 64 \$90,400.00 None 6-10 yrs 1-5 yrs Within 1 yr
Element Group: Element Name: Location:	Abutments Wingwalls					Length: Width: Height:			Urgent
Element Type: Environment: Protection System: Condition Data: Un	Benign Exc	Good	Fair	Poor		Total Qu Limited I	nspection		4 24
Comments Severe undermining noted under both We	under Northeast wall.	Loss of morta	20	ast side. l	4] Jndermi	ning	Perform. Deficiencies Undermining of foundat Estimated Construction	ion Cost:	\$45,200.00
Recommended Work Remove. Culvert to b	c e replaced.							Priority	None 6-10 yrs 1-5 yrs Within 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Uni	Approaches Wearing surface Each End Gravel Severe its Exc	Good 144	Fair	Poor]	Length: Width: Height: Count: Total Qu Limited I	antity: nspection Maint. Needs None Perform. Deficiencies None		12 6 0.08 2 144
Recommended Work	\$						Estimated Construction	Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs Within 1 yr Urgent



STRUCTURE ID BR12

Element Group: Element Name: Location: Material: Element Type: Environment: Protection System: Condition Data: Units Sg. m Comments Recommended Work Remove, Culvert to be p	Decks Soffit - Thick Slal Masonry Benign Exc	Good 96	Fair	Poor	Length: Width: Height: Count: Total Q Limited	uantity: Inspectio Maint. None Perform None Estima	n Needs n. Deficiencies ted Construction Cost: Priority	16 1.8 1 28.79 \$56,500.00 None 6-10 yrs 1-5 yrs
Element Group:	Embankments &	Streams			Length:			Urgent
Element Name: Location: Material: Element Type: Environment: Protection System:	Streams and Wat Under Bridge Benign None	erways			Width: Height: Count: Total Qu Limited	uantity:	· []	1
Condition Data: Units Each Comments Recommended Work		Good	Fair1	Poor		Maint. None Perform None Estimat	n. Deficiencies ed Construction Cost: Priority	\$0.00 None 6-10 yrs 1-5 yrs
								Vvithin 1 yr Urgent
Element Group: Element Name: Location: Material: Element Type: Environment: Protection System:	Foundations Foundation (below Benign None	ground level)			Length: Width: Height: Count: Total Qu Limited I	antity:		16 2 32
Condition Data: Units	Exc	Good	Fair	Poor e to confi	ned space.	None Perform Undermi Estimate	Deficiencies ining of foundation ed Construction Cost: Priority	\$56,500.00 None 6-10 yrs
Replace culvert.								1-5 yrs Within 1 yr Urgent

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STRUCTURE ID BR12

Repair and Renabilitation Required					
Element Group	Element Name	Comments Repair/Rehabilitation	Priority (Years)	Estimated Cost	
Foundations	Foundation (below ground le	Replace culvert.	1-5 yrs	\$56,500.00	
Decks	Soffit - Thick Slab	Remove. Culvert to be replaced.	1-5 yrs	\$56,500.00	
Abutments	Wingwalls	Remove. Culvert to be replaced.	1-5 yrs	\$45,200.00	
Abutments	Abutment walls	Remove. Culvert to be replaced.	1-5 yrs	\$90,400.00	
		· · · · · · · · · · · · · · · · · · ·	Total	\$248,600.00	

Associated Work

	Comments	Estimated Cost
Approaches	Excavation and Road Reconstruction	\$45,200.00
Detours		\$0.00
Traffic Control		\$0.00
Utilities		\$0.00
Right of Way	Environmental Controls and Dewatering	\$28,250.00
Environmental Study		\$0.00
Other	Eng. Design and Contract Administration	\$56,500.00
Contingencies	Contingency Allowance	\$45,200.00

Justification

STRUCTURE NUMBER: BR12



Roadway looking North



Partial failure at Northeast wing wall

STRUCTURE NUMBER: BR12



Barrel looking West



Partial failure of Northeast wing wall

STRUCTURE NUMBER: BR12



Barrel looking East



Scouring along the abutment walls

STRUCTURE NUMBER: BR12



Scouring along the abutment walls



Partial failure at Northeast wing wall

Appendix E

Copies of Current By-Laws

THE CORPORATION OF THE TOWNSHIP OF STRONG

BY-LAW NO. 2010-041 Being a by-law to restrict the weight of vehicles <u>Passing over the Bridges under the Township of Strong Jurisdiction</u>

WHEREAS Section 123(2) of the Highway Traffic Act, Chapter H8, R.S.O. 1990, provides that the Municipal Corporation or other authority having jurisdiction over the Bridges may be By-law limit the gross weight of any vehicle or any class thereof passing over the Bridge;

AND WHEREAS the Corporation of the Township of Strong deems it necessary and expedient to limit the weight of vehicles passing over the Bridges in the Township of Strong;

NOW THEREFORE the Council of the Corporation of the Township of Strong hereby enacts the following:

No Vehicle or combination of vehicles or any class thereof whether empty or loaded, shall be operated over the Bridge in the Township of Strong in the following location with weight in excess of:

BROOKSIDE ROAD – BRIDGE CON. 7, LOT 7 20 TONNES PART LOT 6.

- 1. Any person violating the provisions of the By-law shall be subject to the penalties provided in Section 124 of the Highway Traffic Act.
- 2. This By-law shall not become effective until the Limit of Weight Signs have been posted in a conspicuous place at each end of the Bridge.

READ A FIRST AND SECOND TIME THIS 26TH DAY OF OCTOBER 2010

AS READ A THIRD TIME AND FINALLY PASSED IN OPEN COUNCIL ON A MOTION BY: Merlyn Snow AND SECONDED BY: J. D. Newstead THIS 26TH DAY OF OCTOBER 2010.

MAYOR, STEPHEN RAWN

CLERK/TREASURER LINDA MAURER

Seal

Certified to be a true copy Of By-law 2010-041 passed In open council this 26th Day of October 2010.