LOT 20 – 21 CONCESSION 4

Site Number D00023

WATER STREET, VITTORIA

0.3 km N of Brock Street Vittoria

Ontario Structure Inspection Manual - Inspection Form **Site Number:** D00023

Inventory Data:

Structure Name	Lot 20-21 Concession 4						
Main Hwy/Road #	STANLEY SIDE RD	[X] On [ ] Under	Crossing Type:	[ ] Rail [ ] Ped.	[ ] Road [ ] Other	[ ] Navig. Water [X] Non-Navig. Water	
Hwy/Road Name	WATER STREET, VITTORIA						
Structure Location	0.3km N of Brock Street Vittoria						
Latitude	42d 46' 02.5" N		Longitude	80d 19' 18" W			
Owner(s)	Norfolk County		Heritage Designation:	[X] Not Cons. [ ] Cons./not App.	[ ] List/not Design. [ ] Desig./not List	[ ] Desig. & List	
MTO Region	30 Southwestern		Road Class:	[ ] Freeway	[ ] Arterial	[ ] Collector	[X] Local
MTO District	31 London / Stratford		Posted Speed	50	No. of Lanes	2	
Old County	20 Norfolk		AADT	446	% Trucks		
Geographic Twp.	1119 Charlotteville		Inspection Route Sequence				
Structure Type	15 Rigid Frame, Vertical Legs		Interchange Number				
Total Deck Length	10.3 (m)		Interchange Structure Number				
Overall Str. Width	20.2 (m)		Min. Vertical Clearance	1 (m)			
Total Deck Area	208.1 (m^2)		Special Route	[ ] Truck	[ ] Emergency	[-] School	[ ] Bicycle
Roadway Width	7 (m)		Detour Length Around Bridge	5 (km)			
Skew Angle	(Degrees)		Direction of Structure	North / South			
No. of Spans	2		Fill on Structure	0.2 (m)			
Span Length	2 @ 5.0 (m)						

Historical Data:

Year Built	1966	Year of Last Major Rehab.	
Last OSIM Inspection	June 25, 2014	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

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Field Inspection Information:			
Date of Inspection:	July 26, 2016	Type of Inspection:	[X] OSIM [ ] Enhanced OSIM
Inspector:	Jason Timmermans, B.Eng., EIT, G. Douglas Vallee Ltd.		
Others in Party:	N/A		
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.		
Weather:	Sunny		
Temperature:	20 ^{o}C		

Additional Investigation Required:		Priority		
		None	Normal	Urgent
Material Condition Survey				
X	Detailed Deck Condition Survey:	X		
X	Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
X	Concrete Substructure Condition Survey:	X		
X	Detailed Coating Condition Survey:	X		
X	Detailed Timber Investigation	X		
X	Post-Tensioned Strand Investigation	X		
Underwater Investigation:		X		
Fatigue Investigation:		X		
Seismic Investigation:		X		
Structure Evaluation:		X		
Monitoring				
X	Monitoring of Deformations, Settlements and Movements:	X		
X	Monitoring Crack Widths:	X		
Investigation Notes:				

Overall Structure Notes:			
Recommended Work on Structure:	[X] None	[ ] Minor Rehab.	[ ] Replace
	[ ] Maintenance	[ ] Major Rehab.	
Timing of Recommended Work:	[ ] 1 to 5 years	[ ] 6 to 10 years	
Overall Comments:			
Date of next Inspection:	July 26, 2018		

Suspected Performance Deficiencies

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

Maintenance Needs

01	Lift and swing bridge maintenance	**07**	Repair to structural steel	**13**	Erosion control at bridges
02	Bridge cleaning	**08**	Repair of bridge concrete	**14**	Concrete sealing
03	Bridge handrail maintenance	**09**	Repair of bridge timber	**15**	Rout and seal
04	Painting steel bridge structures	**10**	Bailey bridges - maintenance	**16**	Bridge deck drainage
05	Bridge deck joint repair	**11**	Animal/pest control	**17**	Scaling (Loose concrete or ACR steel)
06	Bridge bearing maintenance	**12**	Bridge surface repair	**18**	Other

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Rehabilitation Required:		Element	Priority				Estimated Construction Cost
Rehab	Replace		Urgent	Within 1 yr	1-5 yrs	6-10 yrs	
		Wearing Surface (Approaches)					
		Barrels					
		Inlet Components					
		Outlet Components					
		Foundation (below ground level)					
						Total Cost	$0

Associated Work:	Comments	Estimated Construction Cost
Additional Investigations		
Traffic Management		
Utilities		
Road Allowance		
Environmental Assessment		
Engineering		
Other		
Contingencies		
	Total Cost	$0

Justification:

Notes:

Construction Cost:	$0
Associated Work Cost:	$0
TOTAL Estimated Cost:	$0

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Element Data

Element Group:	1600	Approaches				Length:	1.5
Element Name:	1601	Wearing Surface (Approaches)				Width:	6
Location:		Top of Fill				Height:	
Material:	2	Asphalt				Count:	2
Element Type:						Total Quantity:	18 sq.m
Environment:		Severe				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	8	10	0		

Comments:
Surface shows depressions on both north and south approaches (50mm x 1.5m). No barriers rails/posts and hazard signs. Settlement at structure edges.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs: Bridge Surface Repair

Timing: Urgent ☐ < 1yr ☐ 1 - 5 yr ☐ 6 - 10 yr ☐ ☐ Urgent ☐ 1 year ☒ 2 year

Element Group:	1200	Culverts				Length:	20.2
Element Name:	1203	Barrels				Width:	5
Location:						Height:	1.4
Material:	4	Cast-in-place Concrete				Count:	2
Element Type:						Total Quantity:	282.8 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m						

Comments:
Includes top of deck. North box blocked by sand.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs: Repair of Bridge Concrete

Timing: Urgent ☐ < 1yr ☐ 1 - 5 yr ☐ 6 - 10 yr ☐ ☐ Urgent ☐ 1 year ☒ 2 year

Element Group:	1200	Culverts				Length:	10.3
Element Name:	1201	Inlet Components				Width:	0.4
Location:		West				Height:	1.4
Material:						Count:	2
Element Type:						Total Quantity:	5.8 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	5.768	0	0		

Comments:
North box not functional, filled with 0.4m of sand.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs: Bridge Cleaning

Timing: Urgent ☐ < 1yr ☐ 1 - 5 yr ☐ 6 - 10 yr ☐ ☐ Urgent ☒ 1 year ☐ 2 year

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Element Data

Element Group:	1200	Culverts				Length:	10.3
Element Name:	1202	Outlet Components				Width:	0.4
Location:		East				Height:	1.4
Material:						Count:	2
Element Type:						Total Quantity:	5.8 sq.m
Environment:		Severe				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	sq.m	0	5.8	0	0

Comments:
Localized damages at corners. Cracks at settlement showing movement. South box has minor deterioration of west end soffit. Some spall with expose bar.

Recommended Work: Rehab ☐ Replace ☐

Timing: Urgent ☐ < 1yr ☐ 1 - 5 yr ☐ 6 - 10 yr ☐

Maintenance Needs:

☐ Urgent ☐ 1 year ☐ 2 year

Element Group:	1300	Foundations				Length:	
Element Name:	1301	Foundation (below ground level)				Width:	
Location:						Height:	
Material:						Count:	1
Element Type:						Total Quantity:	1.0 m
Environment:						Limited Inspection:	X
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	m				

Comments:
Limited inspection. Not visible.

Recommended Work: Rehab ☐ Replace ☐

Timing: Urgent ☐ < 1yr ☐ 1 - 5 yr ☐ 6 - 10 yr ☐

Maintenance Needs:

☐ Urgent ☐ 1 year ☐ 2 year

Figure 1 North Approach

Figure 2 South Approach

Figure 3 East Profile

Figure 4 West Profile

Figure 5 Upstream

Figure 6 Downstream

Figure 7 North Barrel, Note Blockage

Figure 8 South Barrel

Figure 9 Hairline Vertical Cracks at Middle Wall, Outlet

Figure 10 Spall at Northeast Outlet

Figure 11 Wearing Surface

Figure 12 Utility at Southwest Quadrant

Figure 13 Bell Utility Attached at East