

WINDHAM STREET BRIDGE

Site Number 000010

WINDHAM STREET, SIMCOE

0.05km W of Head Street

Ontario Structure Inspection Manual - Inspection Form

Site Number:

Inventory Data:			
Structure Name	<input type="text" value="Windham Street Bridge"/>		
Main Hwy/Road #	<input type="text" value="WINDHAM ST"/>	<input checked="" type="checkbox"/> On <input type="checkbox"/> Under	Crossing Type: <input type="checkbox"/> Rail <input type="checkbox"/> Road <input type="checkbox"/> Navig. Water <input type="checkbox"/> Ped. <input type="checkbox"/> Other <input checked="" type="checkbox"/> Non-Navig. Water
Hwy/Road Name	<input type="text" value="WINDHAM STREET, SIMCOE"/>		
Structure Location	<input type="text" value="0.05km W of Head Street"/>		
Latitude	<input n"="" type="text" value="42d 50' 37.3"/>	Longitude	<input type="text" value="80d 18' 45.2" w"=""/>
Owner(s)	<input type="text" value="Norfolk County"/>	Heritage Designation:	<input checked="" type="checkbox"/> Not Cons. <input type="checkbox"/> List/not Design. <input type="checkbox"/> Desig. & List <input type="checkbox"/> Cons./not App. <input type="checkbox"/> Desig./not List
MTO Region	<input type="text" value="30"/> Southwestern	Road Class:	<input type="checkbox"/> Freeway <input type="checkbox"/> Arterial <input checked="" type="checkbox"/> Collector <input type="checkbox"/> Local
MTO District	<input type="text" value="31"/> London / Stratford	Posted Speed	<input type="text" value="50"/> No. of Lanes <input type="text" value="2"/>
Old County	<input type="text" value="20"/> Norfolk	AADT	<input type="text" value="610"/> % Trucks <input type="text"/>
Geographic Twp.	<input type="text" value="1119"/> Charlotteville	Inspection Route Sequence	<input type="text"/>
Structure Type	<input type="text" value="15"/> Rigid Frame, Vertical Legs	Interchange Number	<input type="text"/>
Total Deck Length	<input type="text" value="6.9"/> (m)	Interchange Structure Number	<input type="text"/>
Overall Str. Width	<input type="text" value="14.6"/> (m)	Min. Vertical Clearance	<input type="text"/> (m)
Total Deck Area	<input type="text" value="100.7"/> (m ²)	Special Route	<input type="checkbox"/> Truck <input type="checkbox"/> Emergency <input type="checkbox"/> School <input type="checkbox"/> Bicycle
Roadway Width	<input type="text" value="11"/> (m)	Detour Length Around Bridge	<input type="text" value="3.5"/> (km)
Skew Angle	<input type="text"/> (Degrees)	Direction of Structure	4 <input type="text" value="East / West"/>
No. of Spans	<input type="text" value="1"/>	Fill on Structure	<input type="text" value="0"/> (m)
Span Length	<input type="text" value="6.1"/> (m)		

Historical Data:			
Year Built	<input type="text" value="1972"/>	Year of Last Major Rehab.	<input type="text"/>
Last OSIM Inspection	<input type="text" value="July 10, 2014"/>	Last Evaluation	<input type="text"/>
Last Enhanced OSIM Inspection	<input type="text"/>	Current Load Limit	<input type="text" value="/ /"/> (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)	<input type="text"/>	Load Limit By-Law #	<input type="text"/>
Last Underwater Inspection	<input type="text"/>	By-Law Expiry Date	<input type="text"/>
Last Condition Survey	<input type="text"/>		
Rehab History: (Date/description)	<input type="text"/>		
Rehabilitation in 2003	<input type="text"/>		

Ontario Structure Inspection Manual - Inspection Form

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Field Inspection Information:		
Date of Inspection:	July 13, 2016	Type of Inspection: <input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM
Inspector:	Johnathan McMorrow, G. Douglas Vallee Ltd.	
Others in Party:	N/A	
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.	
Weather:	Overcast	
Temperature:	24 °C	

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

Overall Structure Notes:			
Recommended Work on Structure:	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Minor Rehab.	<input type="checkbox"/> Replace
	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Major Rehab.	
Timing of Recommended Work:	<input type="checkbox"/> 1 to 5 years	<input type="checkbox"/> 6 to 10 years	
Overall Comments:			
Date of next Inspection:	July 13, 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 |

Rehabilitation Required:		Element	Priority				Estimated Construction Cost
Rehab	Replace		Urgent	Within 1 yr	1-5 yrs	6-10 yrs	
		Wearing Surface (Approaches)					
		Railing System					
		Inlet Components					
		Outlet Components					
		Deck Top					
		Wearing Surface					
		Walls					
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 <hr style="width: 100px; margin-left: auto; margin-right: 0;"/> TOTAL Estimated Cost: \$0

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Element Data

Element Group:		1600 Approaches				Length:	
Element Name:		1601 Wearing Surface (Approaches)				Width:	
Location:						Height:	
Material:						Count:	2
Element Type:						Total Quantity:	2 Each
Environment:		Severe				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	Each	0	2	0	0		
Comments: Approaches are lower than deck. Vegetation overgrowth on northeast curb.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>				Maintenance Needs:			
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>				<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year			

Element Group:		400 Barriers				Length:	7
Element Name:		402 Railing System				Width:	
Location:		Top of Sidewalk				Height:	0.98
Material:		1 Aluminium				Count:	2
Element Type:						Total Quantity:	14 m
Environment:		Severe				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m	0	14	0	0		
Comments: South top rail has weld and is slightly bent at east. Northwest anchor bolt missing washer.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>				Maintenance Needs:			
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>				<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year			

Element Group:		1200 Culverts				Length:	
Element Name:		1201 Inlet Components				Width:	6.9
Location:						Height:	2
Material:						Count:	1
Element Type:						Total Quantity:	13.8 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	13.8	0	0		
Comments: Northeast has large concrete chunks with concrete cap. Small localized spall on northwest face - patch. Fallen tree and debris at inlet.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>				Maintenance Needs: Repair of Bridge Concrete			
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>				<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input checked="" type="checkbox"/> 2 year			

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Element Data

Element Group:		1200 Culverts				Length:		
Element Name:		1202 Outlet Components				Width:		6.9
Location:						Height:		2
Material:						Count:		1
Element Type:						Total Quantity:		13.8 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition Data:	Units	Exc.	Good	Fair	Poor			
	sq.m	0	13.8	0	0			
Comments: Southwest has concrete rubble wall. Southeast is grass bank.								
Recommended Work:				Rehab <input type="checkbox"/>		Replace <input type="checkbox"/>		
Timing:				Urgent <input type="checkbox"/>		< 1yr <input type="checkbox"/>		
				1 - 5 yr <input type="checkbox"/>		6 - 10 yr <input type="checkbox"/>		
Maintenance Needs:				<input type="checkbox"/>		Urgent <input type="checkbox"/>		
				<input type="checkbox"/>		1 year <input type="checkbox"/>		
				<input type="checkbox"/>		2 year <input type="checkbox"/>		

Element Group:		100 Decks				Length:		6.9
Element Name:		102 Deck Top				Width:		14.6
Location:		Soffit				Height:		
Material:		4 Cast-in-place Concrete				Count:		1
Element Type:						Total Quantity:		100.7 sq.m
Environment:		Benign				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition Data:	Units	Exc.	Good	Fair	Poor			
	sq.m	0	95.7	5	0			
Comments: Localized transverse cracks with efflorescence.								
Recommended Work:				Rehab <input type="checkbox"/>		Replace <input type="checkbox"/>		
Timing:				Urgent <input type="checkbox"/>		< 1yr <input type="checkbox"/>		
				1 - 5 yr <input type="checkbox"/>		6 - 10 yr <input type="checkbox"/>		
Maintenance Needs:				Concrete Sealing				
				<input type="checkbox"/>		Urgent <input type="checkbox"/>		
				<input type="checkbox"/>		1 year <input type="checkbox"/>		
				<input checked="" type="checkbox"/>		2 year <input type="checkbox"/>		

Element Group:		100 Decks				Length:		6.9
Element Name:		101 Wearing Surface				Width:		14.6
Location:		Top of Deck				Height:		
Material:		4 Cast-in-place Concrete				Count:		1
Element Type:						Total Quantity:		100.7 sq.m
Environment:		Severe				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition Data:	Units	Exc.	Good	Fair	Poor			
	sq.m	0	100	0.7	0			
Comments: Exposed concrete deck in good condition. Hairline cracks on deck surface.								
Recommended Work:				Rehab <input type="checkbox"/>		Replace <input type="checkbox"/>		
Timing:				Urgent <input type="checkbox"/>		< 1yr <input type="checkbox"/>		
				1 - 5 yr <input type="checkbox"/>		6 - 10 yr <input type="checkbox"/>		
Maintenance Needs:				<input type="checkbox"/>		Urgent <input type="checkbox"/>		
				<input type="checkbox"/>		1 year <input type="checkbox"/>		
				<input type="checkbox"/>		2 year <input type="checkbox"/>		

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Element Data

Element Group:	1100 Retaining Walls					Length:	4
Element Name:	1101 Walls					Width:	
Location:	Southeast and Southwest					Height:	2
Material:						Count:	2
Element Type:						Total Quantity:	16 sq.m
Environment:	Severe					Limited Inspection:	
Protection System:	Unknown					Perform. Deficiencies	
Condition Data:	Units sq.m	Exc. 0	Good 16	Fair 0	Poor 0		
Comments: Concrete block.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/> Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>						Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year	



Figure 1 East Approach



Figure 2 West Approach



Figure 3 North Profile



Figure 4 South Profile



Figure 5 Upstream



Figure 6 Downstream



Figure 7 Barrel, Looking North



Figure 8 Crack on Culvert Soffit



Figure 9 Staining on Culvert Walls at Waterline



Figure 10 Spall at Construction Joint



Figure 11 Asphalt Approach Slightly Lower than Concrete Deck



Figure 12 Slight Bend in Top Rail of North Barrier



Figure 13 Longitudinal Crack in Concrete Deck Wearing Surface



Figure 14 Debris at Outlet