

EAST ¼ LINE CONCESSION 10, WINDHAM

Site Number D00028

EAST ¼ LINE ROAD, WINDHAM

0.25 km S of Windham Road 10

Ontario Structure Inspection Manual - Inspection Form

Site Number:

Inventory Data:			
Structure Name	<input type="text" value="E1/4 Line Concession 10 Windham"/>		
Main Hwy/Road #	<input type="text" value="WINDHAM E1/4"/>	<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="EAST ¼ LINE ROAD, WINDHAM"/>		
Structure Location	<input type="text" value="0.25 km S of Windham Road 10"/>		
Latitude	<input n"="" type="text" value="42d 53' 44.2"/>	Longitude	<input type="text" value="80d 22' 16.3" w"=""/>
Owner(s)	<input type="text" value="Norfolk County"/>	Heritage Designation:	<input checked="" type="checkbox"/> Not Cons. <input type="checkbox"/> Cons./not App. <input type="checkbox"/> List/not Design. <input type="checkbox"/> Design./not List <input type="checkbox"/> Desig. & List
MTO Region	<input type="text" value="30"/> Southwestern	Road Class:	<input type="checkbox"/> Freeway <input type="checkbox"/> Arterial <input type="checkbox"/> Collector <input checked="" type="checkbox"/> Local
MTO District	<input type="text" value="31"/> London / Stratford	Posted Speed	<input type="text" value="80"/> No. of Lanes <input type="text" value="2"/>
Old County	<input type="text" value="20"/> Norfolk	AADT	<input type="text" value="438"/> % Trucks <input type="text"/>
Geographic Twp.	<input type="text" value="124"/> Windham	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="5.3"/> (m)	Interchange Structure Number	<input type="text"/>
Overall Str. Width	<input type="text" value="17.5"/> (m)	Min. Vertical Clearance	<input type="text" value="1.7"/> (m)
Total Deck Area	<input type="text" value="92.8"/> (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="7"/> (m)	Detour Length Around Bridge	<input type="text" value="10"/> (km)
Skew Angle	<input type="text"/> (Degrees)	Direction of Structure	<input type="text" value="East / West"/>
No. of Spans	<input type="text" value="1"/>	Fill on Structure	<input type="text" value="0.3"/> (m)
Span Length	<input type="text" value="4.6"/> (m)		

Historical Data:			
Year Built	<input type="text" value="1975"/>	Year of Last Major Rehab.	<input type="text"/>
Last OSIM Inspection	<input type="text" value="May 28, 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)		

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Field Inspection Information:		
Date of Inspection:	July 11, 2016	Type of Inspection: <input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM
Inspector:	Ben Buchwald M.Eng., EIT, G. Douglas Vallee Ltd.	
Others in Party:	N/A	
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.	
Weather:	Sunny	
Temperature:	28 °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: No barriers.			

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 11, 2018

Suspected Performance Deficiencies

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> 01 Load carrying capacity 02 Excessive deformations (deflections & rotations) 03 Continuing settlement 04 Continuing movements 05 Seized bearings | <ul style="list-style-type: none"> 07 Bearing not uniformly loaded/unstable 08 Jammed expansion joint 09 Pedestrian/vehicular hazard 10 Rough riding surface 11 Deck drainage | <ul style="list-style-type: none"> 12 Slippery surfaces 13 Flooding/channel blockage 14 Undermining of foundation 15 Unstable embankments 16 Other |
|---|--|---|

Maintenance Needs

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> 01 Lift and swing bridge maintenance 02 Bridge cleaning 03 Bridge handrail maintenance 04 Painting steel bridge structures 05 Bridge deck joint repair 06 Bridge bearing maintenance | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 13 Erosion control at bridges 14 Concrete sealing 15 Rout and seal 16 Bridge deck drainage 17 Scaling (Loose concrete or ACR steel) 18 Other |
|---|--|---|

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Rehabilitation Required:		Element	Priority				Estimated Construction Cost
Rehab	Replace		Urgent	Within 1 yr	1-5 yrs	6-10 yrs	
		Barrels					
		Inlet Components					
		Outlet Components					
		Wearing Surface					
		Embankments					
		Foundation (below ground level)					
		Sign					
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: 20%; margin-left: auto; margin-right: 0;"/> TOTAL Estimated Cost: \$0

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Element Data

Element Group:		1200 Culverts				Length:	17.5
Element Name:		1203 Barrels				Width:	8
Location:						Height:	
Material:		4 Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	140 sq.m
Environment:						Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units sq.m	Exc. 0	Good 130	Fair 10	Poor 0		
Comments: Narrow vertical cracks visible on North and South wall.							
Recommended Work:				Rehab <input type="checkbox"/> Replace <input type="checkbox"/>		Maintenance Needs: Concrete Sealing	
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	

Element Group:		1200 Culverts				Length:	5.3
Element Name:		1201 Inlet Components				Width:	0.4
Location:		West End				Height:	1.7
Material:		4 Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	3.5 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units sq.m	Exc. 2.5	Good 1	Fair 0	Poor 0		
Comments: Surface cracking. Vegetation needs to be cleared. Utility pipe on top of inlet.							
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:	5.3
Element Name:		1202 Outlet Components				Width:	0.4
Location:		East End				Height:	1.7
Material:		4 Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	3.5 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units sq.m	Exc. 0	Good 3.5	Fair 0	Poor 0		
Comments:							
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	

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Element Data

Element Group:		100 Decks				Length:	5.3
Element Name:		101 Wearing Surface				Width:	7
Location:		Top of Deck				Height:	
Material:		2 Asphalt				Count:	1
Element Type:						Total Quantity:	37.1 sq.m
Environment:		Severe				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	29.6	7.5	0		
Comments: Light map cracking. Slight settlement at structure edges.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>				Maintenance Needs: Bridge Surface Repair			
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			

Element Group:		1400 Embankments & Streams				Length:	
Element Name:		1402 Embankments				Width:	
Location:						Height:	
Material:						Count:	1
Element Type:						Total Quantity:	1 Each
Environment:						Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	Each	0	1	0	0		
Comments: Clear vegetation at inlet.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>				Maintenance Needs: Bridge Cleaning			
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			

Element Group:		1300 Foundations				Length:	17.5
Element Name:		1301 Foundation (below ground level)				Width:	
Location:						Height:	
Material:						Count:	2
Element Type:						Total Quantity:	35
Environment:						Limited Inspection:	X
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
Comments: Not Visible - floor is below stream bed.							
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			

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Element Data

Element Group:	1500 Signs					Length:	
Element Name:	1501 Sign					Width:	
Location:	4 Quadrants					Height:	
Material:						Count:	4
Element Type:						Total Quantity:	4 Each
Environment:						Limited Inspection:	
Protection System:	Hot dip galvanizing					Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	Each	0	4	0	0		
Comments: Hazard signs at quadrants. No barriers.							
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	



Figure 1 North Approach



Figure 2 South Approach



Figure 3 East Profile, Outlet



Figure 4 West Profile, Inlet



Figure 5 Upstream



Figure 6 Downstream



Figure 7 Barrel, Looking East



Figure 8 Barrel, Looking West



Figure 9 Typical Crack on Wall with Staining



Figure 10 Settlement and Edge Deterioration in Wearing Surface at Culvert