

LOT 16 CONCESSION 3-4

Site Number 971902

COUNTY ROAD 19, WINDHAM

800 m W. of Teeterville Rd.

Ontario Structure Inspection Manual - Inspection Form

Site Number:

Inventory Data:			
Structure Name <input type="text" value="Lot 16 Concession 3-4"/>			
Main Hwy/Road # <input type="text" value="NORFOLK COUNTY RD 19 WEST"/>	<input checked="" type="checkbox"/> On <input type="checkbox"/> Under	Crossing Type: <input type="checkbox"/> Rail <input type="checkbox"/> Ped. <input type="checkbox"/> Road <input type="checkbox"/> Other <input type="checkbox"/> Navig. Water <input checked="" type="checkbox"/> Non-Navig. Water	
Hwy/Road Name <input type="text" value="COUNTY ROAD 19, WINDHAM"/>			
Structure Location <input type="text" value="800 m W of Teeterville Rd."/>			
Latitude <input n"="" type="text" value="42d 57' 30"/>	Longitude <input type="text" value="80d 28' 05.4" 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 checked="" type="checkbox"/> Arterial <input type="checkbox"/> Collector <input 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="887"/>	% Trucks <input type="text"/>	
Geographic Twp. <input type="text" value="124 Windham"/>	Inspection Route Sequence <input type="text"/>		
Structure Type <input type="text" value="10 Arch Culvert"/>	Interchange Number <input type="text"/>		
Total Deck Length <input type="text" value="5"/> (m)	Interchange Structure Number <input type="text"/>		
Overall Str. Width <input type="text" value="16.7"/> (m)	Min. Vertical Clearance <input type="text" value="1.3"/> (m)		
Total Deck Area <input type="text" value="83.5"/> (m ²)	Special Route <input type="checkbox"/> Truck <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> School <input type="checkbox"/> Bicycle		
Roadway Width <input type="text" value="10.5"/> (m)	Detour Length Around Bridge <input type="text" value="7.2"/> (km)		
Skew Angle <input type="text" value="30"/> (Degrees)	Direction of Structure <input type="text" value="North / South"/>		
No. of Spans <input type="text" value="1"/>	Fill on Structure <input type="text" value="0.8"/> (m)		
Span Length <input type="text" value="3.6"/> (m)			

Historical Data:			
Year Built <input type="text" value="1970"/>	Year of Last Major Rehab. <input type="text"/>		
Last OSIM Inspection <input type="text" value="May 9, 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 22, 2016	Type of Inspection: <input checked="" type="checkbox"/> OSIM <input type="checkbox"/> 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:	Overcast	
Temperature:	22 °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 hazard signs or barriers present.			

Overall Structure Notes:	
Recommended Work on Structure:	<input type="checkbox"/> None <input type="checkbox"/> Minor Rehab. <input type="checkbox"/> Replace <input checked="" 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:	Repairs to be made in 1-5 years.
Date of next Inspection:	July 22, 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	
		Wearing Surface (Approaches)					
		Barrels					
		Inlet Components					
		Outlet Components					
		Streams and Waterways					
		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 <hr/> TOTAL Estimated Cost: \$0

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Element Data

Element Group:		1600 Approaches				Length:		
Element Name:		1601 Wearing Surface (Approaches)				Width:		
Location:		Top of Road				Height:		
Material:		2 Asphalt				Count:		1
Element Type:						Total Quantity:		1 Each
Environment:		Severe				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	1	0	0			
Comments: Asphalt slopes are stable. One (1) transverse crack on the west approach.								
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>				Maintenance Needs: Rout and Seal				
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:		16.7
Element Name:		1203 Barrels				Width:		5
Location:		Inside				Height:		
Material:		5 Corrugated Steel				Count:		1
Element Type:						Total Quantity:		83.5 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	73.5	10	0			
Comments: Slight deflection in center of barrel with localized cusping under travelled portion. Corrosion near water level. Minor corrosion at bolts. Minor damage at inlet. Pipe is too short for existing road 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				

Element Group:		1200 Culverts				Length:		
Element Name:		1201 Inlet Components				Width:		
Location:						Height:		
Material:						Count:		1
Element Type:						Total Quantity:		1 Each
Environment:						Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	0.9	0.1	0			
Comments: Top of inlet is damaged with light corrosion.								
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:	1200 Culverts					Length:	
Element Name:	1202 Outlet Components					Width:	
Location:						Height:	
Material:						Count:	1
Element Type:						Total Quantity:	1 Each
Environment:						Limited Inspection:	
Protection System:	Unknown					Perform. Deficiencies	
Condition Data:	Units Each	Exc. 0	Good 1	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	

Element Group:	1400 Embankments & Streams					Length:	
Element Name:	1401 Streams and Waterways					Width:	
Location:						Height:	
Material:						Count:	1
Element Type:						Total Quantity:	1 Each
Environment:						Limited Inspection:	
Protection System:	Unknown					Perform. Deficiencies	
Condition Data:	Units Each	Exc. 0	Good 1	Fair 0	Poor 0		
Comments: Concrete rubble on east approach quad. Erosion control at all quad's req'd.							
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>						Maintenance Needs: Erosion Control at Bridges	
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:	
Element Name:	1301 Foundation (below ground level)					Width:	
Location:						Height:	
Material:						Count:	2
Element Type:						Total Quantity:	2 Each
Environment:						Limited Inspection:	X
Protection System:	Unknown					Perform. Deficiencies	
Condition Data:	Units Each	Exc.	Good	Fair	Poor		
Comments: Limited inspection. Not visible.							
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 East Approach



Figure 2 West Approach



Figure 3 North Profile



Figure 4 South Profile



Figure 5 Upstream



Figure 6 Downstream



Figure 7 Barrel



Figure 8 Deflection of Barrel



Figure 9 Corrosion at Outlet



Figure 10 Corrosion of Bolts



Figure 11 Damage at Top of Inlet



Figure 12 Corrosion, Staining at Water Line



Figure 13 Wearing Surface