

LITTLE OTTER CREEK CULVERT

Site Number 973801

TALBOT ROAD (COUNTY ROAD 38), MIDDLETON

0.2 km W of County Road 59

Ontario Structure Inspection Manual - Inspection Form

Site Number:

Inventory Data:			
Structure Name	<input type="text" value="Little Otter Creek Culvert"/>		
Main Hwy/Road #	<input type="text" value="COLONEL TALBOT RD"/>	<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="TALBOT ROAD (COUNTY ROAD 38), MIDDLETON"/>		
Structure Location	<input type="text" value="0.2 km W of County Road 59"/>		
Latitude	<input n"="" type="text" value="42d 49' 59.6"/>	Longitude	<input type="text" value="80d 38' 18.3" 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="756"/> % Trucks <input type="text"/>
Geographic Twp.	<input type="text" value="123"/> Middleton	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="4.3"/> (m)	Interchange Structure Number	<input type="text"/>
Overall Str. Width	<input type="text" value="36.5"/> (m)	Min. Vertical Clearance	<input type="text" value="2"/> (m)
Total Deck Area	<input type="text" value="157"/> (m ²)	Special Route	<input checked="" type="checkbox"/> Truck <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> School <input type="checkbox"/> Bicycle
Roadway Width	<input type="text" value="12.4"/> (m)	Detour Length Around Bridge	<input type="text" value="8"/> (km)
Skew Angle	<input type="text"/> (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="2.4"/> (m)
Span Length	<input type="text" value="3.7"/> (m)		

Historical Data:			
Year Built	<input type="text" value="1968"/>	Year of Last Major Rehab.	<input type="text"/>
Last OSIM Inspection	<input type="text" value="June 18, 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)		

Ontario Structure Inspection Manual - Inspection Form

Site Number: 973801

Field Inspection Information:		
Date of Inspection:	July 21, 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:	Sunny	
Temperature:	17 °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 signs or barriers.			

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:	
Date of next Inspection:	July 21, 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 |
|---|--|---|

Ontario Structure Inspection Manual - Inspection Form

Site Number: 973801

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 style="width: 50%; margin: 0 auto;"/> TOTAL Estimated Cost: \$0

Ontario Structure Inspection Manual - Inspection Form

Site Number: 973801

Element Data

Element Group:		1600 Approaches				Length:		
Element Name:		1601 Wearing Surface (Approaches)				Width:		
Location:		Top of Fill				Height:		
Material:		2 Asphalt				Count:		1
Element Type:						Total Quantity:		1 Each
Environment:		Severe				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	1	0	0	0			
Comments:								
No signs or barriers. Asphalt is new (2016).								
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:		1200 Culverts				Length:		36.5
Element Name:		1203 Barrels				Width:		3.7
Location:		Inside				Height:		2
Material:		4 Cast-in-place Concrete				Count:		1
Element Type:						Total Quantity:		281.1 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	279.1	2	0			
Comments:								
Minor deterioration, staining and hairline cracking at wall drain outlets. Deterioration on east wall at midspan construction joint. Drains appear to be clogged.								
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:				Bridge Concrete Repair				
				<input type="checkbox"/>		Urgent <input checked="" type="checkbox"/>		
				<input type="checkbox"/>		1 year <input type="checkbox"/>		
				<input type="checkbox"/>		2 year <input type="checkbox"/>		

Element Group:		1200 Culverts				Length:		
Element Name:		1201 Inlet Components				Width:		
Location:						Height:		
Material:						Count:		1
Element Type:						Total Quantity:		1 Each
Environment:		Moderate				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	1	0	0			
Comments:								
Inlet partially blocked by debris and wire fence. Minor erosion at both quadrants.								
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:				Erosion Control, Remove Blo				
				<input type="checkbox"/>		Urgent <input checked="" type="checkbox"/>		
				<input type="checkbox"/>		1 year <input type="checkbox"/>		
				<input type="checkbox"/>		2 year <input type="checkbox"/>		

Ontario Structure Inspection Manual - Inspection Form

Site Number: 973801

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:		Moderate				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	1	0	0			
Comments:								
Minor erosion at both quadrants, slopes appear stable.								
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:		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:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	1	0	0			
Comments:								
Banks are stable.								
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 checked="" type="checkbox"/>		
				<input type="checkbox"/>		2 year <input type="checkbox"/>		

Element Group:		1300 Foundations				Length:		
Element Name:		1301 Foundation (below ground level)				Width:		
Location:						Height:		
Material:						Count:		
Element Type:						Total Quantity:		
Environment:						Limited Inspection:		X
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:								
Comments:								
Limited inspection, not visible.								
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"/>		



Figure 1 North Approach



Figure 2 South Approach



Figure 3 East Profile



Figure 4 West Profile



Figure 5 Upstream



Figure 6 Downstream



Figure 7 Culvert Barrel



Figure 8 Debris Blockage at Inlet



Figure 9 Minor Erosion at all Quadrants



Figure 10 Wood Pop-out in Concrete at Outlet



Figure 11 Staining and Hairline Crack at Drains



Figure 12 Asphalt Wearing Surface