MUD CREEK CULVERT

Site Number 974202

PORT ROWAN ROAD 42, SOUTH WALSINGHAM

2.7 km N of Regional Road 16

Ontario Structure Inspection Manual - Inspection Form **Site Number:** 974202

Inventory Data:

Structure Name	Mud Creek Culvert						
Main Hwy/Road #	LAKESHORE RD	[X] On [ ] Under	Crossing Type:	[ ] Rail	[ ] Road	[ ] Navig. Water	[X] Non-Navig. Water
				[ ] Ped.	[ ] Other		
Hwy/Road Name	PORT ROWAN ROAD 42, SOUTH WALSINGHAM						
Structure Location	2.7 km N of Regional Road 16						
Latitude	42d 39' 17.5" N		Longitude	80d 26' 38.1" W			
Owner(s)	Norfolk County		Heritage Designation:	[X] Not Cons.	[ ] List/not Design.	[ ] Desig. & List	
				[ ] Cons./not App.	[ ] Desig./not List		
MTO Region	30 Southwestern		Road Class:	[ ] Freeway	[ ] Arterial	[ ] Collector	[X] Local
MTO District	31 London / Stratford		Posted Speed	80	No. of Lanes	2	
Old County	20 Norfolk		AADT	1595	% Trucks		
Geographic Twp.	585 South Walsingham		Inspection Route Sequence				
Structure Type	13 Round Culvert		Interchange Number				
Total Deck Length	4.1 (m)		Interchange Structure Number				
Overall Str. Width	36 (m)		Min. Vertical Clearance	3 (m)			
Total Deck Area	147.6 (m^2)		Special Route	[ ] Truck	[ ] Emergency	[X] School	[ ] Bicycle
Roadway Width	12.5 (m)		Detour Length Around Bridge	9.6 (km)			
Skew Angle	(Degrees)		Direction of Structure	North / South			
No. of Spans	1		Fill on Structure	3.6 (m)			
Span Length	4.3 (m)						

Historical Data:

Year Built	1967	Year of Last Major Rehab.	
Last OSIM Inspection	June 17, 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)

Ontario Structure Inspection Manual - Inspection Form **Site Number:** 974202

Field Inspection Information:			
Date of Inspection:	July 5, 2016	Type of Inspection:	[X] OSIM [ ] Enhanced OSIM
Inspector:	Matt Alderson, G. Douglas Vallee Ltd.		
Others in Party:	Andrew Vallee		
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.		
Weather:	Sunny		
Temperature:	25 ^{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:
No barriers or signs.

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

Ontario Structure Inspection Manual - Inspection Form **Site Number:** 974202

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					
		Embankments					
						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

Ontario Structure Inspection Manual - Inspection Form **Site Number:** 974202

Element Data

Element Group:	1600	Approaches				Length:	
Element Name:	1601	Wearing Surface (Approaches)				Width:	
Location:		Top of Fill				Height:	
Material:						Count:	1
Element Type:						Total Quantity:	1 All
Environment:		Severe				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	All	0	1	0	0

Comments:
Road repaved since 2014 inspection.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs:

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

Element Group:	1200	Culverts				Length:	36
Element Name:	1203	Barrels				Width:	4.3
Location:						Height:	3.1
Material:	5	Corrugated Steel				Count:	1
Element Type:						Total Quantity:	486.3 sq.m
Environment:		Severe				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	sq.m	0	386.3	100	0

Comments:
Some corrosion at water level.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs:

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

Element Group:	1200	Culverts				Length:	
Element Name:	1201	Inlet Components				Width:	
Location:						Height:	
Material:	14	Steel				Count:	1
Element Type:						Total Quantity:	1 Each
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	Each	0	1	0	0

Comments:
Overgrown.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs:

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

Ontario Structure Inspection Manual - Inspection Form **Site Number:** 974202

Element Data

Element Group:	1200	Culverts				Length:	
Element Name:	1202	Outlet Components				Width:	
Location:						Height:	
Material:	14	Steel				Count:	1
Element Type:						Total Quantity:	1 Each
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	Each	0	1	0	0

Comments:
Overgrown.

Recommended Work:	Rehab ☐	Replace ☐			Maintenance Needs:		
Timing:	Urgent ☐	< 1yr ☐	1 - 5 yr ☐	6 - 10 yr ☐	☐ Urgent	☐ 1 year	☐ 2 year

Element Group:	1400	Embankments & Streams				Length:	
Element Name:	1402	Embankments				Width:	
Location:						Height:	
Material:						Count:	4
Element Type:						Total Quantity:	4 Each
Environment:						Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	Each	0	0	4	0

Comments:
Scour and erosion at ends of culvert. Overgrown

Recommended Work:	Rehab ☐	Replace ☐			Maintenance Needs:	Erosion Control at Bridges	
Timing:	Urgent ☐	< 1yr ☐	1 - 5 yr ☐	6 - 10 yr ☐	☐ Urgent	☐ 1 year	☒ 2 year

Figure 1 East Approach

Figure 2 West Approach

Figure 3 North Profile, Inlet

Figure 4 South Profile, Outlet

Figure 5 Upstream

Figure 6 Downstream

Figure 7 Barrel, Looking North

Figure 8 Barrel, Looking South

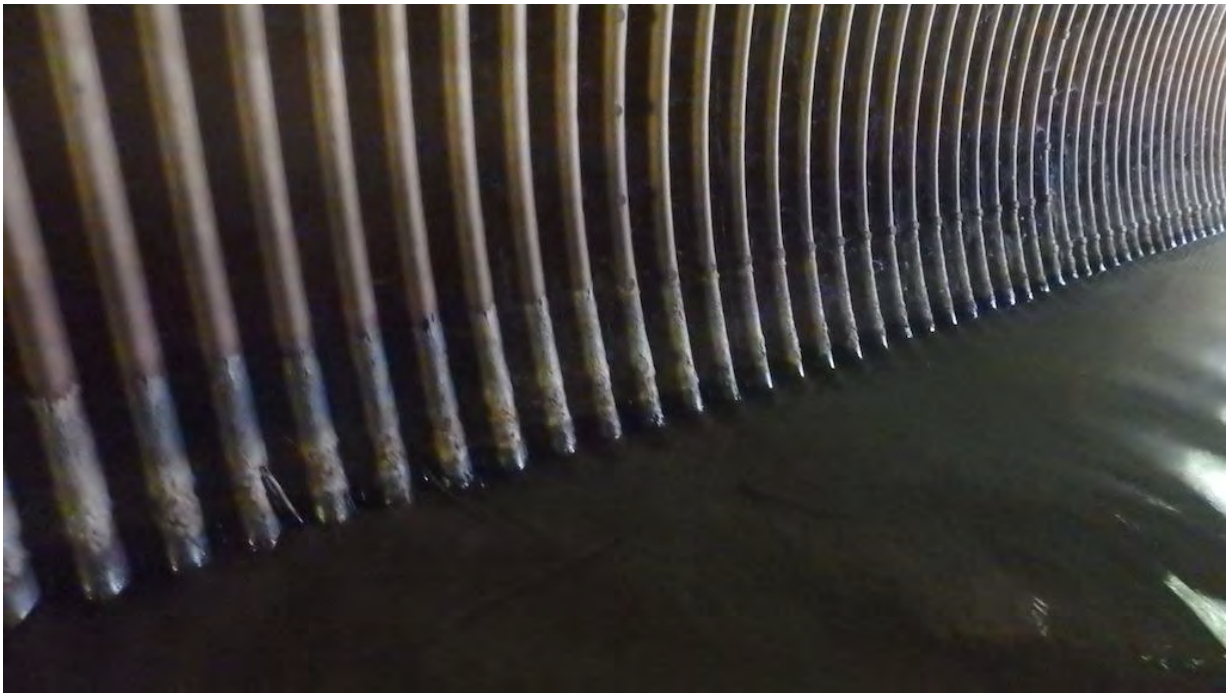

Figure 9 Corrosion at Waterline

Figure 10 Northeast Wingwall

Figure 11 Southeast Wingwall