HOSNER CULVERT

Site Number 000101

TOWNLINE ROAD (7TH CONCESSION RD), WALSINGHAM

5.0 km W of County Highway 59

Ontario Structure Inspection Manual - Inspection Form **Site Number:** 000101

Inventory Data:

Structure Name	Hosner Culvert						
Main Hwy/Road #	N WALS - S WALS TL	[X] On [ ] Under	Crossing Type:	[ ] Rail [ ] Ped.	[ ] Road [ ] Other	[ ] Navig. Water [X] Non-Navig. Water	
Hwy/Road Name	TOWNLINE ROAD (7TH CONCESSION RD), WALSINGHAM						
Structure Location	5.0 km W of County Highway 59						
Latitude	42d 39' 56.2" N		Longitude	80d 35' 13.7" W			
Owner(s)	Norfolk County		Heritage Designation:	[X] Not Cons. [ ] Cons./not App.	[ ] List/not Design. [ ] Desig./not List	[ ] Desig. & 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	81	% Trucks		
Geographic Twp.	585 South Walsingham		Inspection Route Sequence				
Structure Type	15 Rigid Frame, Vertical Legs		Interchange Number				
Total Deck Length	7.1 (m)		Interchange Structure Number				
Overall Str. Width	48 (m)		Min. Vertical Clearance	3 (m)			
Total Deck Area	340.8 (m^2)		Special Route	[ ] Truck	[ ] Emergency	[-] School	[ ] Bicycle
Roadway Width	14 (m)		Detour Length Around Bridge	10 (km)			
Skew Angle	(Degrees)		Direction of Structure	North / South			
No. of Spans	1		Fill on Structure	6 (m)			
Span Length	6.1 (m)						

Historical Data:

Year Built	1964	Year of Last Major Rehab.	
Last OSIM Inspection	May 23, 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)

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Field Inspection Information:			
Date of Inspection:	July 12, 2016	Type of Inspection:	[X] OSIM [ ] Enhanced OSIM
Inspector:	Matt Alderson, G. Douglas Vallee Ltd.		
Others in Party:	N/A		
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.		
Weather:	Sunny		
Temperature:	30 ^{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 signs or barriers.

Overall Structure Notes:			
Recommended Work on Structure:	[ ] None	[X] Minor Rehab.	[ ] Replace
	[ ] Maintenance	[ ] Major Rehab.	
Timing of Recommended Work:	[X] 1 to 5 years	[ ] 6 to 10 years	
Overall Comments:	Remove large trees and repair culvert ends.		
Date of next Inspection:	July 12, 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

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Rehabilitation Required:		Element	Priority				Estimated Construction Cost
Rehab	Replace		Urgent	Within 1 yr	1-5 yrs	6-10 yrs	
		Approaches Drainage (app)					
		Wearing Surface (Approaches)					
		Barrels					
X		Inlet Components			**X**		$10,000
		Outlet Components					
		Streams and Waterways					
		Foundation (below ground level)					
						Total Cost	$10,000

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:	$10,000
Associated Work Cost:	$0
TOTAL Estimated Cost:	$10,000

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Element Data

Element Group:	1600	Approaches				Length:	
Element Name:	1603	Approaches Drainage (app)				Width:	
Location:		North and South				Height:	
Material:						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:
Catch basin piped over slopes. No signs or barriers.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs:

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

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 Each
Environment:		Severe				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	

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

Comments:
Material is tar and chip. Transverse cracking along center line of culvert.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs: Rout & Seal

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

Element Group:	1200	Culverts				Length:	48
Element Name:	1203	Barrels				Width:	6.1
Location:		North				Height:	3
Material:	4	Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	878.4 sq.m
Environment:		Benign				Limited Inspection:	X
Protection System:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	sq.m	0	0	875.4	3

Comments:
Limited inspection due to access. Remove large trees on ends. Delamination on north end soffit. Possible delamination on south end soffit. Limited inspection at South end.

Recommended Work: Rehab ☐ Replace ☐ Maintenance Needs: Repair of Bridge Concrete

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

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Element Data

Element Group:	1200	Culverts				Length:	
Element Name:	1201	Inlet Components				Width:	7
Location:		North End				Height:	3
Material:	4	Cast-in-place Concrete				Count:	2
Element Type:						Total Quantity:	42 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	0	36	6		

Comments:
Efflorescence and delamination showing on north and south wall faces .Cracking noted.

Recommended Work: Rehab [X] Replace [ ]
Timing: Urgent [ ] < 1yr [ ] 1 - 5 yr [X] 6 - 10 yr [ ]

Maintenance Needs:
[ ] Urgent [ ] 1 year [ ] 2 year

Element Group:	1200	Culverts				Length:	
Element Name:	1202	Outlet Components				Width:	7
Location:		South End				Height:	3
Material:	4	Cast-in-place Concrete				Count:	2
Element Type:						Total Quantity:	42 sq.m
Environment:		Moderate				Limited Inspection:	X
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	0	36	6		

Comments:
Limited inspection due to access.

Recommended Work: Rehab [ ] Replace [ ]
Timing: Urgent [ ] < 1yr [ ] 1 - 5 yr [ ] 6 - 10 yr [ ]

Maintenance Needs:
[ ] Urgent [ ] 1 year [ ] 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	Exc.	Good	Fair	Poor		
	Each	0	0	1	0		

Comments:
Slopes are steep and grown over.

Recommended Work: Rehab [ ] Replace [ ]
Timing: Urgent [ ] < 1yr [ ] 1 - 5 yr [ ] 6 - 10 yr [ ]

Maintenance Needs:
[ ] Urgent [ ] 1 year [ ] 2 year

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Element Data

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:		Unknown				Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor

Comments:
Limited inspection, not visible.

Recommended Work:	Rehab ☐	Replace ☐			Maintenance Needs:		
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

Figure 4 Upstream

Figure 5 Downstream

Figure 6 Barrel, Looking South

Figure 7 Efflorescence & Deterioration at Inlet Fascia

Figure 8 Transverse Crack in Wearing Surface