LOT 20 CONCESSION 12 ROAD

Site Number 030050

CONCESSION 12 ROAD, TOWNSEND

2.5 km W of County Road 70

Ontario Structure Inspection Manual - Inspection Form **Site Number:** 030050

Inventory Data:

Structure Name	Lot 20 Concession 12 Road								
Main Hwy/Road #	CON 12 TOWNSEND	[X] On [ ] Under	Crossing Type:	[ ] Rail [ ] Ped.	[ ] Road [ ] Other	[ ] Navig. Water [X] Non-Navig. Water			
Hwy/Road Name	CONCESSION 12, TOWNSEND								
Structure Location	2.5km W of County Road 70								
Latitude	42d 54' 11" N		Longitude	80d 10' 36" 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	36	% Trucks				
Geographic Twp.	125 Townsend		Inspection Route Sequence						
Structure Type	11 Ellipse Culvert		Interchange Number						
Total Deck Length	22.8 (m)		Interchange Structure Number						
Overall Str. Width	3.2 (m)		Min. Vertical Clearance		(m)				
Total Deck Area	72.96 (m^2)		Special Route	[ ] Truck	[ ] Emergency	[X] School	[ ] Bicycle		
Roadway Width	9.7 (m)		Detour Length Around Bridge	10 (km)					
Skew Angle	30 (Degrees)		Direction of Structure	North / South					
No. of Spans	1		Fill on Structure	1.3 (m)					
Span Length	3.2 (m)								

Historical Data:

Year Built	1970	Year of Last Major Rehab.	
Last OSIM Inspection	June 6, 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 7, 2016	Type of Inspection:	[X] OSIM [ ] 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:	24 ^{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 [ ] Maintenance	[X] Minor Rehab. [ ] Major Rehab.	[ ] Replace
Timing of Recommended Work:	[X] 1 to 5 years	[ ] 6 to 10 years	
Overall Comments:			
Date of next Inspection:	July 1, 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	
		Wearing Surface (Approaches)					
		Barrels					
X		Inlet Components			**X**		
X		Outlet Components			**X**		
		Streams and Waterways					
						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

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Element Data

Element Group:	1600	Approaches	Length:	
Element Name:	1601	Wearing Surface (Approaches)	Width:	
Location:		Top of Fill	Height:	
Material:	6	Gravel	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:
No barrier, no hazard signs.

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

Maintenance Needs:
☐ Urgent ☐ 1 year ☐ 2 year

Element Group:	1200	Culverts	Length:	22.8
Element Name:	1203	Barrels	Width:	10
Location:		Interior	Height:	
Material:	5	Corrugated Steel	Count:	1
Element Type:			Total Quantity:	228 sq.m
Environment:		Severe	Limited Inspection:	
Protection System:		Hot dip galvanizing	Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	sq.m	0	20	0	28

Comments:
Very small deflection at center of pipe to be monitored. Minor deflection of bevel at north end. Corrosion on lower plates.

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

Maintenance Needs:
☐ Urgent ☐ 1 year ☐ 2 year

Element Group:	1200	Culverts	Length:	
Element Name:	1201	Inlet Components	Width:	
Location:		North End	Height:	
Material:	5	Corrugated Steel	Count:	1
Element Type:			Total Quantity:	1 Each
Environment:		Severe	Limited Inspection:	
Protection System:		Hot dip galvanizing	Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	Each	0	0	0.5	0.5

Comments:
Some rock protection at northeast corner required. Has been undermined 0.5m and is sagging. Contains wood debris and garbage.

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:	1200	Culverts	Length:	
Element Name:	1202	Outlet Components	Width:	
Location:		South End	Height:	
Material:	5	Corrugated Steel	Count:	1
Element Type:			Total Quantity:	1 Each
Environment:		Severe	Limited Inspection:	
Protection System:		Hot dip galvanizing	Perform. Deficiencies	

Condition Data:	Units	Exc.	Good	Fair	Poor
	Each	0	0	0.5	0.5

Comments:
Has been undermined by 0.5m. Needs to be shored up.

Recommended Work: Rehab [X] Replace [ ]
Timing: Urgent [ ] < 1yr [ ] 1 - 5 yr [X] 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:		Moderate	Limited Inspection:	
Protection System:		Unknown	Perform. Deficiencies	

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

Comments:
Bank is grassed.

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

Maintenance Needs:
[ ] 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 Undermining at Inlet

Figure 10 Undermining at Outlet

Figure 11 Typical Corrosion on Culvert Bottom