Reference No. 11116995



December 2, 2016

Mark Smuck Director of Public Works Township of North Dumfries 2958 Greenfield Road P.O. Box 1060 Ayr, ON N0B 1E0

Dear Mr. Smuck:

Re: 2016 OSIM Inspections for Municipal Bridges and Culverts Larger Than 3 Metres

GHD is pleased to submit this report with the respect to the results of the 2016 Municipal Structure Inventory and Inspection which outlines the results of our field inspection investigations for the above noted project.

This study was completed for the structure inspections using GHD's Microsoft Access Database Municipal Structures and Inventory Assessment (BMS) Software. Structures were reviewed in accordance with the Ontario Structure Inspection Manual (Revised Nov 2003, April 2008).

With this report, all structure related data for those structures inspected in 2016 have been updated to present day values and the content of the report reflects conditions as of the time of the field data collection, in the fall of 2016 for the structure inventory.

We trust that this report will be beneficial to the Township of North Dumfries in developing their asset management plans and wish to express appreciation for the opportunity for GHD to participate in the work.

1.1 Description of Project

The Township of North Dumfries 2016 Municipal Structure Inventory and Inspection Study provides a summary of structure condition ratings identified during rating surveys conducted by GHD in 2016. All of the Township of North Dumfries structures of 3.0 m span or greater were reviewed in 2016. The Township of North Dumfries total inventory of four (4) bridges are included in this report.

Data collection and structure ratings were completed in accordance with the Ontario Structure Inspection Manual. The scope of the report includes summaries of collected data, with discussion and analysis regarding same.

Key items contained within the inspection report are summarized below:

Footbridge Road Bridge

The existing Footbridge Road Bridge located on Footbridge Road is a three (3) span (36.8 m+/-, 36.8 m+/-, 48.9 m +/-) structural steel girder bridge with a cast-in-place concrete deck and an asphalt wearing surface. The bridge overall is in fair to generally good condition with deterioration of various elements and a BCI value of **68.21**. The OSIM report contains recommendations for rehabilitation of the bridge at an estimated





cost of **\$2,633,000**. The bridge has been identified for further engineering investigations (Fatigue Inspection) at an approximate cost of **\$30,000**.

Based on our detailed visual OSIM inspection it is recommended that the following works be completed to the bridge:

- Overlay, patch, waterproof and pave the bridge deck.
- Replace approach wearing surfaces.
- Convert expansion joints to semi-integral.
- Replace parapet wall & railings.
- Remove curbs and construct one sidewalk on bridge deck.
- Replace broken deck drains.
- Replace approach curb and gutter.
- Replace approach guide rail.
- Concrete patch repairs to ballast walls, wingwalls and haunch.
- Consideration should be given to adding a sidewalk for pedestrian traffic on the approaches.

Jedburgh Dam Bridge

The existing Jedburgh Bridge located on Main Street is a two (2) span (4.9 m+/-, 1.7 m +/-) concrete solid slab bridge with a cast-in-place concrete deck and an asphalt wearing surface. The bridge overall is in poor to fair condition with deterioration of various elements and a BCI value of **49.91**. The OSIM report contains recommendations for rehabilitation of the bridge at an estimated cost of **\$224,000**. The bridge has been identified for further engineering investigations (Detailed Deck Condition Survey and Concrete Substructure Condition Survey) at an approximate cost of **\$15,000**. The bridge has an existing load limit posting of 10 tonnes, the existing load limit posting can be retained.

Based on our detailed visual OSIM inspection it is recommended that the following works be completed to the bridge:

- Rout and seal cracks on approach wearing surface and deck wearing surface.
- Replace approach guide rail and provide guide rail continuous over the bridge.
- Concrete patch repairs to abutments, wingwalls, curbs, piers and soffit.

The report also contains recommended the following maintenance works:

- Replace existing load limit posting sign with legal signage.
- Patch repair potholes in deck wearing surface.

Piper Street Bridge

The existing Piper Street Bridge located on Piper Street is a three (3) span (20.1 m+/-, 19.8 m+/-, 20.1 m+/-) pre-cast concrete box beam girder bridge with a reinforced cast-in-place concrete deck and an asphalt wearing surface. The bridge overall is in fair to generally good condition with deterioration of various elements and a BCI value of **67.87**. The OSIM report contains recommendations for rehabilitation of the bridge at an estimated cost of **\$348,000**. The bridge has been identified for further engineering investigations (Detailed Deck Condition Survey) at an approximate cost of **\$15,000**.



Based on our detailed visual OSIM inspection it is recommended that the following works be completed to the bridge:

- Replace utility conduit in curb.
- Replace joint seals at abutments and over piers.
- Rout and seal cracks in asphalt.
- Concrete patch repairs to girders, exterior soffit, piers and sidewalk.
- Replace / upgrade guide rail

The report also contains recommended the following maintenance works:

- Replace junction box cover plates.
- Reposition / secure handrail and replace deteriorated barrier panels.

Shellard Road Bridge

The existing Shellard Road Bridge located on Shellard Sideroad (Sideroad 17) is a single span (7.3 m+/-) steel girder bridge with a cast-in-place concrete deck and an concrete wearing surface. The bridge overall is in good to excellent condition with deterioration of various elements and a BCI value of **82.43**. The OSIM report contains recommendations for rehabilitation of the bridge at an estimated cost of **\$32,000**.

Based on our detailed visual OSIM inspection it is recommended that the following works be completed to the bridge:

- Seal cracks in concrete deck top.
- Repair broken section of expansion joint armouring angle.
- Patch repair abutment.

The report also contains recommended the following maintenance works:

- Clean deck top.
- Replace missing bolts from hand railing
- Patch potholes and pad approach wearing surface
- Replace damaged section of steel flex beam guide rail.



1.2 Conclusion

The Footbridge Road Bridge, Jedburgh Dam Bridge and the Piper Street Bridge have been recommended for further engineering investigations to confirm visual repair recommendations as summarized above at a total cost of *\$60,000*. It is recommended that engineering investigations be completed within 2 to 4 years prior to structure rehabilitations.

It is recommended that the structures be re-inspected by a qualified structure engineer every two (2) years. We trust that the foregoing in satisfactory. Please contact the undersigned if you have any questions in the above regard or if we can be of any further assistance.

Sincerely,

GHD

Dennis Baxter, P. Eng.

Senior Manager, Bridges Associate dennis.baxter@ghd.com

DLB/JREP

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Sincerely,

GHD

JavidM. Dazne

David M. Gagné Senior Manager, Bridge Inspections Associate david.gagne@ghd.com

Repair Rehabilitation Summary

Township of North Dumfries

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Element Group	Element	Repair/Rehabilitation Requi	red Priority	Cost	Comments
Bridges					
ledburgh Dam E	Br BCI 49.9	SPN 35.04		Inspect	ed on: 12-Oct-16
ledburgh Dam E	Bridge			SPN	35.04 BCI: 49.91
Decks	> Soffit - Thick Slab Interior	Rehab	1-5 yrs	10,000	Concrete patches
Abutments	> Abutment Walls	Rehab	1-5 yrs	20,000	Patch repairs
Abutments	> Wingwalls	Rehab	1-5 yrs	5,000	Patch repair
Approaches	> Approach Guidera	l Rehab	1-5 yrs	70,000	Replace guiderail and end treatments
Piers	> Shafts/Columns/P	le Bents Rehab	1-5 yrs	10,000	Patch repairs and crac injections
Barriers	> Railing Systems	Rehab	1-5 yrs	4,000	Replace continuous w approach guiderail
Decks	 Soffit - Thick Slab Exterior 	Rehab	1-5 yrs	5,000	Patch repairs
Decks	> Wearing Surface	Rehab	1-5 yrs	5,000	Seal cracks
Approaches	> Wearing Surface	Rehab	1-5 yrs	5,000	Rout and seal cracks
Sidewalks/curb	> Curbs	Rehab	1-5 yrs	5,000	Concrete patch repair
		Total Rep	pair/Rehabilitation Cost	139,000	
		Total Co	ost of Associated Work	85,000	
			Total Cost	<u>224.000</u>	
		Township of North I	Dumfries Share @ 100%	224,000	

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Element Group		Element	Repair/R	habilitation Required	Priority	Cost	Com	ments	
Piper Street Brid	lg.	BCI 67.87 SPN	41.06		La la bar	Inspect	ed on:	12-Oct-	16
Piper Street Brid	1					SPN	41.06	BCI:	67.87
CHARLES STORE TO A	100	Sidewalks/Medians	Rehab		1-5 yrs	10,000	Repa	ir sidewa	alk
Piers	>	Shafts/Columns/Pile Bents	Rehab		1-5 yrs	10,000	Patch	n repair	
Joints	>	Seals/Sealants	Replace		1-5 yrs	41,000	Repla	ace joint	seals
Beams/MLE's	>	Girders End	Rehab		1-5 yrs	30,000		n repairs crack	and se
Sidewalks/curb	>	Curbs	Rehab		1-5 yrs	5,000	Patch	n repairs	
Beams/MLE's	>	Girders Middle	Rehab		1-5 yrs	5,000	Patch	n repairs	
Accessories	>	Utilities Conduit	Rehab		1-5 yrs	5,000		ace corro on of cor	
Approaches	>	Wearing Surface	Rehab		1-5 yrs	5,000	Rout	and sea	I cracks
Barriers	>	Posts	Rehab		1-5 yrs	70,000		ld replac bach guid	
Decks	>	Wearing Surface	Rehab		1-5 yrs	5,000	Seal	cracks	
Decks	>	Soffit - Thick Slab Exterior	Rehab		1-5 yrs	5,000	Conc	rete pato	ch repa
Joints	>	Seals/Sealants	Replace		1-5 yrs	41,000	Repla	ace joint	seals
				Total Repair/Rehabilit	ation Cost	232,000			
				Total Cost of Associ	iated Work	116,000			
					Total Cost	<u>348.000</u>			
				Township of North Dumfries Sha	re @ 100%	348,000			

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Element Group	Element	Repair/Reh	abilitation Required	Priority	Cost	Con	iments	
Footbridge Rd Br	ni BCI 68.21 SPN 42.90		42.90		Inspec	ted on:	ed on: 12-Oct-16	
Footbridge Road					SPN	42.9	BCI:	68.21
Approaches >	· Approach Guiderail Terminal	Replace			0		ed under le Rail	Approach
Abutments >	Wingwalls	Rehab		1-5 yrs	3,000	Pato	h repairs	
Barriers >	Barrier/Parapet Walls	Replace		1-5 yrs	420,000		ace Para ailing	pet Walls
Barriers >	· Hand Railings	Replace		1-5 yr s	0	Cost Inter	ed under ior	Barriers
Decks >	• Drainage	Rehab		1-5 yrs	5,000	east	ace two o pier. Rep at northy	air leakin
Decks >	• Wearing Surface	Rehab		1-5 yrs	725,000	Ove Pave	rlay, Wate e	erproof &
Joints >	· Seals/Sealants	Replace		1-5 yrs	70,000	Rep	ace expa	nsion join
Sidewalks/curb >	Curbs	Replace		1-5 yrs	250,000		ace with ne side	sidewalk
Joints >	· Armouring/Retaining Devices	Replace		1-5 yrs	0	Cost	ed under	seals
Decks >	· Deck Top	Rehab		1-5 yrs	0		ed under ring Surfa	
Approaches >	· Approach Guiderail	Replace		1-5 yrs	110,000	Rep	ace Guid	e Rail
Abutments >	· Ballast Walls	Rehab		1-5 yrs	0	integ	ace with ral joints r Joints)	semi- (costed
Abutments >	· Abutment Walls	Rehab		1-5 yrs	10,000	Pato	h repair	
Barriers >	· Barrier/Parapet Walls Exterior	Replace		1-5 yrs	0	Cost Inter	ed under ior	Barriers
			Total Repair/Rehabilitati	ion Cost	1,593,000			
			Total Cost of Associate		1,040,000			
			Тс	otal Cost	<u>2.633.000</u>			
		Т	wnship of North Dumfries Share	@ 100%	2,633,000			

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Element Group	b Element	Repair/Rehabilitatio	n Required Priority	Cost	Comments
Shellard Road I	Bri BCI 82.43	SPN 22.78		Inspect	ted on: 12-Oct-16
Shellard Road I	Bridge (Sideroad 17) ov	er Mill Creek		SPN	22.78 BCI: 82.43
Decks	> Deck Top	Rehab	1-5 yrs	5,000	Seal cracks
Abutments	> Abutment Walls	Rehab	6-10 yrs	5,000	Patch repair
Joints	> Armouring/Retaining	Devices Rehab	1-5 yrs	5,000	Repair broken section of armouring angle
		т	otal Repair/Rehabilitation Cost	15,000	
			Total Cost of Associated Work	17,000	
			Total Cost	<u>32.000</u>	
		Township o	of North Dumfries Share @ 100%	32,000	

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Maintenance Needs Summary

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Township of North Dumfries

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Element Group Elem		Element	Maintenance Need	Priority	Comments
ledburgh Dam B	Br	Jedburgh Dam Bridge			Inspected on: 12-Oct-16
Accessories	>	Signs	Other	1 yr	Replace posting sign with legal signage
Decks	>	Wearing Surface	Bridge Surface Repair	1 yr	Patch potholes
Piper Street Brid	lg	Piper Street Bridge			Inspected on: 12-Oct-16
Accessories	>	Utilities	Other	1 yr	Replace junction box cover plates
Barriers	>	Railing Systems	Bridge Handrail Maintenance	1 yr	Replace deteriorated panels
Barriers	>	Hand Railings	Bridge Handrail Maintenance	1 yr	Reposition/secure handrail
Shellard Road B	ri	Shellard Road Bridge (Side	eroad 17) over Mill Creek	Sec.	Inspected on: 12-Oct-16
Approaches	>	Approach Guiderail	Bridge Handrail Maintenance	2 yr	Replace damaged section of flex beam
Approaches	>	Wearing Surface	Bridge Surface Repair	1 уг	Patch potholes/pad approaches
Barriers	>	Hand Railings	Bridge Handrail Maintenance	2 yr	Replace missing bolts
Decks	>	Deck Top	Bridge Cleaning	2 yr	Clean deck

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Summary Action Report Structure Footbridge Rd Bridge (MTO Site No. Footbridge Rd Bridge) Footbridge Road Bridge

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Inspection Date	10/12/2016	mm/dd/yyyy			Condition Index Val	ue (BCI)	68.21
Next Biennial Inspection	on 10/12/2018	mm/dd/yyyy			Current Rep. Value	\$8,	364,265
Additional Investigatio	ns						
Investigation		Priority	Cost	Investigation	Pr	riority	Cost
Fatigue Investigation		Normal	\$30,000				
Additional investigations re Performance Deficience		3 for details.					
Element Group E	Element			Performance Deficiency			
Barriers F	Posts		I	_oad carrying capacity			
Decks [Drainage		I	Deck drainage			
Maintenance Needs No Maintenance Needs							

Repair/Rehabilitation

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Element Group	Element		Rep	oair/Reha	bilitation	Priority	Cost
Abutments	Abutment Walls		Ref	nab	Patch repair	1-5 yrs	\$10,000
Abutments	Ballast Walls		Ref	ıab	Replace with semi-integral joints (costed under Joints)	1-5 yrs	\$0
Approaches	Approach Guiderail	Ter	minal Rep	blace	Costed under Approach Guide Rail		\$0
Abutments	Wingwalls		Reh	nab	Patch repairs	1-5 yrs	\$3,000
Approaches	Approach Guiderail		Rep	olace	Replace Guide Rail	1-5 yrs	\$110,000
Barriers	Barrier/Parapet Walls	Inte	rior Rep	blace	Replace Parapet Walls & Railing	1-5 yrs	\$420,000
Barriers	Hand Railings		Rep	place	Costed under Barriers Interior	1-5 yrs	\$0
Barriers	Barrier/Parapet Walls	Exte	erior Rep	olace	Costed under Barriers Interior	1-5 yrs	\$C
Decks	Drainage		Ref	nab	Replace two drains near east pier. Repair leaking drain at northwest.	1-5 yrs	\$5,000
Decks	Deck Top		Ref	nab	Costed under Deck Wearing Surface	1-5 yrs	\$C
Decks	Wearing Surface		Ref	nab	Overlay, Waterproof & Pave	1-5 yrs	\$725,000
Joints	Armouring/Retaining Devices		Rep	blace	Costed under seals	1-5 yrs	\$C
Joints	Seals/Sealants		Rep	place	Replace expansion joints	1-5 yrs	\$70,000
Sidewalks/curbs	Curbs		Rep	olace	Replace with sidewalk on one side	1-5 yrs	\$250,000
					Total Repair/Rehabilitation	n Cost	\$1,593,00
Township of North	n Dumfries	100 %	\$2,633,00	0.00	Total Associated V	Vork Cost	\$1,040,000
		%			·	Total Cost	\$2.633.00

Overall Comments

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Should overlay, patch, waterproof and pave deck based on condition survey report and inspection. HCP for 31.5% of deck area. Consideration should be given to adding a sidewalk on the approaches. Convert expansion joints to semi-integral, replace parapet walls, broken deck drains, approach curb and gutter and guide rail. Concrete patch repairs to ballast walls, wingwalls and haunch. Remove curbs and construct one sidewalk.

Township of North Dumfries Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

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Inventory Data	2.12									
Structure Name	Footbridge Road Bri	dge		Hwy No.	Footbrid Key	Photo				
Cross. Type Over	Road Rail	Road 🗋 Rail 🔲 Ped 🗹 Nav. Water 🗌 Non-Nav. Wat 🗋 Other								
Cross. Type Under	🖌 Road 🔲 Rail	Road Rail Ped Nav. Water Non-Nav. Wat Other								
Road Name	Footbridge Road	ootbridge Road								
Structure Location	Approximately 50m	pproximately 50m West of Highway 24								
Latitude	43.31746 Longi	tude -80.31415	Cur.	Rep.Value \$8,3	64,265					
Owner(s)/	Township of North D	Jumfries	100 %		**		AND CONTRACT OF			
% Share			%	Heritage Status	Not Considere	d for Designatior				
MTO Region	Southwestern			Road Side Env.	Rural					
MTO District	London/Stratford			Road Class	Local					
Old County	Waterloo			Lane Type	Regular					
Geographic Twp.	North Dumfries			Posted Speed	80	No. of Lanes	2			
Structure Type	I-Beam or Girders		1	AADT	0	Pct. Trucks	0			
Structure Material	Structural Steel	Structural Steel Inspection Route Sequence								
Articulation	Continuous			Interchange Num	ber					
Total Deck Length	122.5 m F	load Width	8.62	Interchange Strue	cture Number					
Overall Width	10.4 m V	/ert. Clear.	0	Detour Length	0 km	Skew Angle	0			
Total Deck Area	1274.00 m ² M	lo. of Spans	3	Fill on Structure	0 m	Struct. Dir.	East/West			
Special Routes	Transit Schoo	ol 🗌 Truck 🗌	Bicycle	Insp. Duration	1 hr					
Spans	** Current Replacement	Value is based on in Manning should consid	kind replac der site spe	ement of the existing st cific cost factors and re	ructure and calcul quirements for wic	ated using benchm lening or lengthenir	ark costs. Capital ng of the structure.			
Span Name		Span Length	Span Nar	ne	S	Span Length				
1		36.8 m	2			48.9 m				
3		36.8 m								
Historical Data				1.7						
Year Built	1970	уууу	Year of	Last Major Rehab		уууу				
Last OSIM Inspectio	on 06/04/2013	mm/dd/yyyy	Contrac	t No. When Built]			
Last Enhanced OSI	N	mm/dd/yyyy	Last Eva	aluation		mm/dd/yyyy				
Last Enhanced Acc	ess	mm/dd/yyyy	Current	Load Limit	t]t 🗌 t				
Last Underwater Ins	şp.	mm/dd/yyyy	Load Li	mit By-Law No.		mm/dd/yyyy				
Last Condition Surv	/ey	mm/dd/yyyy	By-Law	Expiry Date		mm/dd/yyyy				

Rehab History

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Municipal Structure Inspection Form

Structure Number:	Footbridge	Rd Bridge
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Field Inspect	ion Information:
Inspection Date	10/12/2016 mm/dd/yyyy I Multi Day Inspection I OSIM Enhanced OSIM BCI 68.21
Inspector	D. L. Baxter, P. Eng. Eng. Responsible D. L. Baxter, P. Eng.
Others in Party	C. Harper J. Parkinson
Access Equip.	Lift Ladder Doat Bridge Master Other
Other Equip.	Camera, Hammer, Other Hand Tools
Weather	Sunny Temperature 20 °C

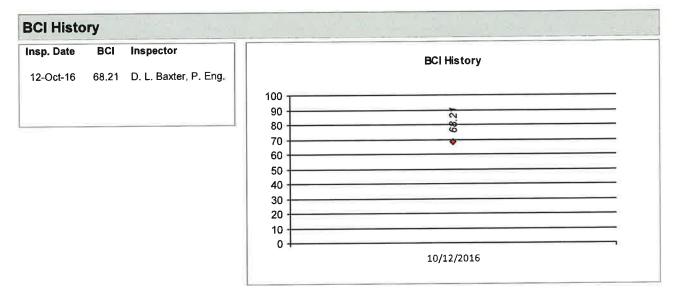
Investigation		Priority			Estimated Cos
-	None	Normal	Urgent		
Detailed Deck Condition Survey				[\$0
Delamination Survey of Asphalt-Covered Deck				[\$0
Concrete Substructure Condition Survey					\$0
Detailed Coating Condition Survey				[\$0
Detailed Timber Investigation			1	[\$0
Post-Tensioned Strand Investigation		1	8-7 L		\$0
Underwater Investigation					\$0
Fatigue Investigation		\checkmark			\$30,000
Seismic Investigation					\$0
Structure Evaluation					\$0
Monitoring of Deformations, Movements and Settlements		a second s			\$0
Monitoring of Crack Widths				[\$0
Investigation Notes				Total Cost	\$30,000

Overall St	ructure Notes:				
Recommende	d Work on Structure	None None	Rehab	Replace	Remove
Timing of Rec	commended Work	None None	Now	✓ 1 to 5 years	6 to 10 years
Overall Comments	deck area. Consideratio	on should be giver is to semi-integral	n to adding a side	ewalk on the approach t walls, broken deck d	oort and inspection. HCP for 31.5% of res. rains, approach curb and gutter and guide urbs and construct one sidewalk.
BCI Change Justification	on 10/12/2018	mm/dd/yyyy		Estimated Load Lim	it t t
Next inspecti					

Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge



All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

Standard Codes

Suspected Performance Deficiencies

- 00 None
- 01 Load carrying capacity
- 02 Excessive deformations (deflections/rotations)
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

- 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

- 06 Bearing not uniformly loaded/unstable
- 07 Jammed expansion joint
- 08 Pedestrian/vehicular hazard 09 Rough riding surface
- 10 Surface ponding
- 11 Deck drainage
- TI Deck drainage
- 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

- 12 Slippery surfaces
- 13 Flooding/channel blockage
- 14 Undermining of foundation
- 15 Unstable embankments
- 16 Other
- 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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Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

Abutments - Abu	tment Walls	5 C ¹ +	a ntina li					Statut 1	
Element Group	Abutments					Length	0.00	Width	9.46
Element Name	Abutment Wa	alls				Height	1.80	Count	2.00
ocation	East and We						Total Q	uantity	34.06
laterial	Cast-in-place					Limited	d Inspecti	on	
-	Conventional					Environme	ent		
lement Type		Closed							
Protection System	None				Beer	Moderate			
condition Data	· · · · · · · · · · · · · · · · · · ·	0.00	Good 11.06	<i>Fair</i> 21.00	2.00				
Comments Delamination with spa	sq. m		1						
have rust staining and abutment, wet areas f		ts.							
Performance Deficie	ncies	Mainte	enance Needs	i	Priority	Comments			
None		l.							
	mendetiene	Pric	rity Co	ost Commer	nts				
Rehab/Repair Recom	Imendations	1-5		0,000 Patch					_
		1-0	y13 ¢10	1000 1 4101				in an	
Abutments - Bal			a an an	12 10 10 10		Length	0.30	Width	9.4
Element Group	Abutments					Height	_	Count	2.0
Element Name	Ballast Walls					Height [_	Quantity	35.9
ocation	At Abutment						d Inspect	1	
/laterial	Cast-in-place	e concrete						1011	
Element Type						Environm	ent		
-lement Type	None					Benigi			
	INOTIC				Poor		Moderate		
Protection System		Excell.							
Protection System Condition Data Comments	Units I sq. m	0.00	0.00	32.95	3.00	Sever			
Protection System Condition Data Comments Numerous vertical na	Units I sq. m	0.00	0.00					ills.	
Protection System Condition Data Comments Numerous vertical na	Units I sq. m	0.00	0.00	taining, wet an	eas, delamina			ills.	
Protection System Condition Data Comments Numerous vertical na	Units I sq. m	0.00	0.00	taining, wet an	eas, delamina	tions, spalls o		ills.	
Protection System Condition Data Comments Numerous vertical na Performance Deficie None	Units I sq. m	0.00	0.00 I cracks, rust s enance Needs	taining, wet an	eas, delamina Priority	tions, spalls o		ills.	
Protection System Condition Data Comments Numerous vertical na Performance Deficie None	Units I sq. m	0.00 row stained Mainte Priv	0.00 I cracks, rust s enance Needs ority Co	taining, wet an s ost Comme	eas, delamina Priority nts	tions, spalls o	on both wa	ills.	
Protection System Condition Data Comments Numerous vertical na Performance Deficie	Units I sq. m	0.00	0.00 I cracks, rust s enance Needs ority Co	taining, wet an s ost Comme \$0 Repla	eas, delamina Priority	tions, spalls o	on both wa	ills.	
Protection System Condition Data Comments Numerous vertical na Performance Deficie None Rehab/Repair Recon	Units I sq. m	0.00 row stained Mainte Priv	0.00 I cracks, rust s enance Needs ority Co	taining, wet an s ost Comme \$0 Repla	eas, delamina Priority nts ce with semi-	tions, spalls o	on both wa	ills.	
Protection System Condition Data Comments Numerous vertical na Performance Deficie None Rehab/Repair Recon	Units I sq. m	0.00 row stained Mainte Priv	0.00 I cracks, rust s enance Needs ority Co	taining, wet an s ost Comme \$0 Repla	eas, delamina Priority nts ce with semi-	tions, spalls o	on both wa	ills.	

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Municipal Structure Inspection

Structure Number: Footbridge Rd Bridge

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Abutments - Bea	rings			Start V				
Element Group	Abutments				Length 0.28 Width 0.40			
Element Name	Bearings				Height 0.04 Count 4.00			
Location	East Abutment				Total Quantity 4.00			
Material	Steel				Limited Inspection			
Element Type	Elastomeric pac				Environment			
Protection System	None				Benign			
Condition Data	Units Exc	ell. Good	Fair P	oor	Moderate			
Comments	Each	0.00 0.00	2.00	2.00	Severe			
Light to severe corrosic cracking of pads.	on of the bearing p	olates. Light to severe co	rrosi0n of bearing	ı pins. Lig	ght to severe bulging, narrow to medium			
Performance Deficien	cies	Maintenance Needs	P	riority	Comments			
None								
Rehab/Repair Recom	mendations	Priority Cos	t Comments					
Barriers - Posts			Anna Maria		Length 0.20 Width 0.20			
Element Group	Barriers							
Element Name	Posts							
Location	Approaches				Total Quantity 88.00			
Material	Wood				Limited Inspection			
Element Type					Environment			
Protection System					Benign			
Condition Data	Units Exc		(oor	Moderate			
Comments	Each	0.00 88.00	0.00	0.00	Severe			
Light checks and splits	s, light to medium	weathering. Posts do no	i meet current sta	ndard.				
Performance Deficien	ncies	Maintenance Needs	F	riority	Comments			
Load carrying capacit	у							
Rehab/Repair Recom	mondations	Priority Cos	t Comments					
Kenab/Kepair Recom	literidations							

Municipal Structure Inspection Form

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Structure Number:	Footbridge Rd Bridge
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Approaches - Ap	proach Guide	rail			WE CL		
Element Group	Approaches			Length	0.00	Width	0.00
Element Name	Approach Guide	rail Terminal End		Height	0.00	Count	4.00
Location	All Quadrants				Total Q	uantity	4.00
Material	Steel			Limited	d Inspecti	on	
Element Type				Environment			
Protection System	Hot dip galvaniz	ng		🔲 Benigr	ı		
Condition Data	Units Exc	ell. Good Fair	Poor	Moder:	ate		
Comments	Each	0.00 4.00 0.00	0.00	V Severe	9		
Guiderail in the northea	ast and southeast	wrap into entrance.					
Performance Deficien	ncies	Maintenance Needs	Priority	Comments			
None							
Debel (Decele Decen	mondations	Priority Cost Comm	ents				
Rehab/Repair Recom	mendations		ted under Appr	roach Guide Ra	ail	_	
Abutments - Bea	rings					317 X	
Element Group	Abutments		Length	0.28	Width	0.40	
Element Name	Bearings			Height	0.12	Count	4.00
Location	West Abutment				Total C	Quantity	4.00
Material	Steel			Limite	d Inspect	ion	
Element Type	Elastomeric pad			Environment			
Protection System	None			🗌 Benigi	n		
Condition Data	Units Exc	ell. Good Fair	Poor	Moder	rate		
	Each	0.00 3.00 1.00	0.00	Sever	e		
Comments	eel bearing plates	One small area on northwest bear	ing exposes st	eel within bear	ing.		
Performance Deficien	ncies	Maintenance Needs	Priority	Comments			
None							
Rehab/Repair Recom	nmendations	Priority Cost Com	nents				

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Municipal	Structure	Inspection	Form
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Structure Number: Footbridge Rd Bridge

Abutments - Win	gwalls	12.51			742			in-the	
Element Group	Abutments					Length	4.75	Width	0.00
Element Name	Wingwalls					Height	1.50	Count	4.00
Location	All Quadrants]		Total C	uantity	28.50
Material	Cast-in-place c	Cast-in-place concrete				Limited	d Inspecti	ion	
Element Type	Reinforced concrete					Environment			
Protection System	None					🔲 Benign	I		
Condition Data	Units Ex	cell.	Good	Fair	Poor	Moderate			
Comments	sq. m	0.00	26.50	1.00	1.00	Severe)		
Light scaling, spalls, delaminations, wet areas.									
Performance Deficier	ncies	Mainte	enance Needs	\$	Priority	Comments			
None									
		Driv	-ity Cr	ost Comme	nte				
Rehab/Repair Recom	mendations	1-5			n repairs				
Accessories - Si	ans			THE REAL PROPERTY IN		in the second		12	and press
Element Group	Accessories					Length	0.00	Width	0.00
Element Name	Signs					Height	0.00	Count	4.00
Location	All Quadrants						Total C	Quantity	4.00
Material	Steel					Limited Inspection			
Element Type						Environment			
Protection System	None					Benign			
Condition Data	Units Ex	cell.	Good	Fair	Poor	🔲 Moder	ate		
	Each	0.00	4.00	0.00	0.00	V Severe	e		
Comments Hazard marker signs.									
Performance Deficie	ncies	Maint	enance Need	s	Priority	Comments			
None									
Rehab/Repair Recom	mendations	Pri	ority C	ost Comme	ents				
Kenab/Kepair Kecon									

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Municipal Structure Inspection Form

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Structure	Number:	Footbridge	Rd	Bridge

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Approaches - Ap	proach Guide	erail	南湖加增生			210-1			
Element Group	Approaches			Length	167.64	Width	0.00		
Element Name	Approach Guide	erail		Height	0.00	Count	0.00		
Location	All Quadrants				Total Q	uantity	167.64		
Material	Steel			Limited Inspection					
Element Type	Steel Beam on	Wood Posts		Environment					
Protection System	Hot dip galvania	zing		🔲 Benign					
Condition Data	Units Exc	cell. Good F	air Poor	Moderate					
Comments	m	0.00 167.64	0.00 0.00	🗹 Sever	e				
9 panels at west approach, 13 panels at east approach. Few areas of localized light surface corrosion. Guide rial has no offset blocks. Guide rail attachment to bridge is not to current design standards. Minor scrape damage.									
Performance Deficien	icies	Maintenance Needs	Priority	Comments					
None									
Rehab/Repair Recom	mendations	Priority Cost	Comments						
Replace		1-5 yrs \$110,000	Replace Guide Ra	I					
Approaches - We	earing Surfac	9							
Element Group	Approaches			Length	6.00	Width	8.62		
Element Name	Wearing Surfac	ce		Height	0.00	Count	2.00		
Location	East and West	Approaches		Total Quantity 103.44					
Material	Asphalt			Limited Inspection					
Element Type				Environ	nent				
Protection System	None			🔲 Benig	n				
Condition Data	Units Ex	cell. Good F	air Poor	Moderate					
Comments	sq. m	0.00 93.44	6.00 4.00	V Sever	e				
	rrow to wide crack	ks, gap between approach as	sphalt and end dams,	light ravelling.					
Performance Deficier	ncies	Maintenance Needs	Priority	Comments					
None									
Rehab/Repair Recom	mendations	Priority Cost	Comments						

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Municipal Structure Inspection Form

Structure Number: Footbridge Rd Bridge

Barriers - Barrier	Parapet Wall	S			CARE NO.	と言語			
Element Group	Barriers				Length	132.00	Width	0.25	
Element Name	Barrier/Parapet	Walls	Interior		Height	0.60	Count	2.00	
Location	North and South	n Sides				Total Q	uantity	224.40	
Material	Cast-in-place co	oncrete			Limited Inspection				
Element Type	Parapet Wall wi	th Two Rails			Environment				
Protection System	None				Benign				
Condition Data	Units Exc	ell. Good	Fair	Poor	Moderate				
Comments	sq. m	0.00 128.40	51.00	45.00	Severe	е			
Light to medium spalls, light scaling, water staining, rust staining, delaminations, narrow to medium cracks. 20% of parapet walls exhibited HCP based on condition survey by SPL.									
Performance Deficien	cies	Maintenance Need	ls	Priority	Comments				
None									
Rehab/Repair Recom	mondations	Priority C	ost Commen	ts					
Replace					Valls & Railing			_	
Barriers - Hand R	ailings								
Element Group	Barriers				Length	131.00	Width	0.00	
Element Name	Hand Railings		l		Height	0.00	Count	4.00	
Location	North and Sout	n Sides				Total C	uantity	524.00	
Material	Steel				Limited Inspection				
Element Type	Double Railing				Environm	ent			
Protection System	Hot dip galvaniz	zing			🗌 Benig	n			
Condition Data	Units Exc	cell. Good	Fair	Poor	Moder	rate			
Comments	m	0.00 521.00	2.00	1.00	Sever	e			
Light corrosion of anch	or bolts, localized	area of severe corros	sion and perforat	ions.					
Performance Deficien	cies	Maintenance Need	ls	Priority	Comments				
None									
Rehab/Repair Recom	mendations	Priority C	Cost Commen	ts					
Replace		1-5 yrs		d under Barr	iers Interior				

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Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

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Beams/MLE's - Diaphragms									
Element Group	Beams/MLE's				Length	2.60	Width	0.30	
Element Name	Diaphragms		End		Height	1.22	Count	24.00	
Location	At Abutments/P	iers				Total Q	uantity	24.00	
Material	Steel				Limite	d Inspecti	on		
Element Type	I-type				Environment				
Protection System	Red lead prime	r/alkyd			🔲 Benign				
Condition Data	Units Exc	ell. Good	Fair	Poor	Moder	ate			
Comments	Each	0.00 21.00	3.00	0.00	Severe	e			
Light to medium corrosion, flaking of coating, efflorescence.									
Performance Deficien	cies	Maintenance Ne	eds	Priority	Comments				
None									
Rehab/Repair Recom	mendations	Priority	Cost Commen	is					
Barriers - Barrier	Parapet Wall	S		1. 19				<u></u>	
Element Group	Barriers				Length	132.00	Width	0.00	
Element Name	Barrier/Parapet	Walls	Exterior		Height	0.60	Count	2.00	
Location	North and Sout	h Sides			Total Quantity 158.40				
Material	Cast-in-place c	oncrete			Limited Inspection				
Element Type	Parapet Wall w	ith Two Rails			Environm	ent			
Protection System	None				🔲 Benigi	n			
Condition Data	Units Ex	cell. Good	Fair	Poor	✓ Moder	ate			
Comments	sq. m	0.00 142.40	16.00	0.00	D Severe				
Comments Narrow stained cracks, water staining.									
Performance Deficier	ncies	Maintenance Ne	eds	Priority	Comments				
None									
Rehab/Repair Recom	mendations	Priority	Cost Commen	ts					
Replace		1-5 yrs	\$0 Costed	under Barri	ers Interior				

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Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

Beams/MLE's - D	liaphragms			20 <u>63</u> 2.	2010/03	5.5			
Element Group	Beams/MLE's			Length	10.40	Width	0.15		
Element Name	Diaphragms	Intermediate		Height	0.15	Count	60.00		
Location	1				Total Q	uantity	60.00		
Material	Steel			Limite	d Inspectio	on			
Element Type	Cross Type			Environment					
Protection System	Red lead prime	/alkyd		🖌 Benigr	ı				
Condition Data	Units Exc	ell. Good Fair	Poor	Moderate					
Comments	Each	0.00 60.00 0.00	0.00	Severe	e				
Localized light corrosion.									
Performance Deficien	ncies	Maintenance Needs	Priority	Comments					
None									
Debel (Develop Decem		Priority Cost Comn	onte						
Rehab/Repair Recom	mendations	Phony Cost Comm							
Beams/MLE's - G	Birders				3.0121				
Element Group	Beams/MLE's			Length	4.00	Width	0.40		
Element Name	Girders	End		Height	1.22	Count	4.00		
Location					Total Q	uantity	58.24		
Material	Steel			Limited Inspection					
Element Type	I-type			Environm	ent				
Protection System	Red lead prime	/alkyd		🔲 Benig	n				
Condition Data	Units Exc	ell. Good Fair	Poor	Moder Moder	ate				
Comments	sq. m	0.00 34.24 16.00	8.00	Sever	е				
Two interior girder end flaking.	ls have light to me	dium corrosion and are in fair cond	ition. Light to se	evere corrosio	n mainly or	n exterior	girders,		
Performance Deficier	ncies	Maintenance Needs	Priority	Comments					
None									
Rehab/Repair Recom	mondations	Priority Cost Comm	ents						
Reliau/Repair Recom		i nonty obst obiin							

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Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

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Beams/MLE's - G	Girders			No. 1	2.115. 198			~ <u>),</u> ->	
Element Group	Beams/MLE's				Length	118.50	Width	0.40	
Element Name	Girders	N	liddle		Height	1.22	Count	4.00	
Location						Total Q	uantity	1725.36	
Material	Steel				🗋 Limite	d Inspecti	on		
Element Type	I-type				Environm	ient			
Protection System	Red lead prime	er/alkyd			☑ Benign				
Condition Data	Units Ex	cell. Good	Fair	Poor	🔲 Moder	rate			
Comments	sq. m	0.00 1715.36	10.00	0.00	Sever Sever	e			
Light to medium corro:	sion below deck o	Irains, localized light cor	rosion.						
Performance Deficier	ncies	Maintenance Needs		Priority	Comments				
None									
Dahah/Danain Daaren	mondations	Priority Co	st Comment	5					
Rehab/Repair Recom	menuations	Friding CO							
Coatings - Railin	ng Systems/H	and Railings			al she				
Element Group	Coatings				Length	131.00	Width	0.00	
Element Name	Railing System	ns/Hand Railings			Height [0.00	Count	4.00	
Location	Double Tube H	land Railing				Total C	Quantity	164.50	
Material	Other				Limited Inspection				
Element Type	Hot dip galvan	izing			Environment				
Protection System	Hot dip galvan	izing			🗌 Benig	In			
Condition Data	Units Ex	ccell. Good	Fair	Poor	Mode	rate			
Comments	sq. m	0.00 78.50	85.00	1.00	0 Severe				
Performance Deficie	ncies	Maintenance Needs	5	Priority	Comments				
None									
Rehab/Repair Recon	nmendations	Priority Co	ost Comment	s					
								,	

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Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

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Coatings - Struct	tural Steel								
Element Group	Coatings				Length	0.00 Width	0.00		
Element Name	Structural Steel				Height	0.00 Count	0.00		
Location	Girder Ends					Total Quantity	43.68		
Material	Other				Limite	d Inspection			
Element Type	Red lead primer	/alkyd			Environment				
Protection System	Red lead prime	/alkyd			🔲 Benigr	ı			
Condition Data	Units Exc		Fair	Poor	Moder	ate			
Comments	sq. m	0.00 0.00	0.00	43.68	Severe	9			
Performance Deficier	ncies	Maintenance Need	is	Priority	Comments				
None									
Rehab/Repair Recom	mendations	Priority C	Cost Commen	ts					
Coatings - Struc	tural Steel				4.254-16				
Element Group	Coatings				Length	0.00 Width	0.00		
Element Name	Structural Steel				Height	0.00 Count	0.00		
Location	Guiderail				Total Quantity 100.58				
Material					🗋 Limite	d Inspection			
Element Type					Environm	ent			
Protection System					🔲 Benigi	n			
Condition Data	Units Exc	ell. Good	Fair	Poor	🔲 Moder	ate			
Comments	sq. m	0.00 100.58	0.00	0.00	Sever	e			
Localized light breakd	own of protective (coating.							
Performance Deficien	ncies	Maintenance Nee	ds	Priority	Comments				
None									
Rehab/Repair Recom	mendations	Priority (Cost Commen	ts					

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Municipal Structure Inspection Form

Structure Number: Footbridge Rd Bridge

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Coatings - Struct	tural Steel							
Element Group	Coatings			Length	0.00 Width	0.00		
Element Name	Structural Steel	Middle		Height	0.00 Count	0.00		
Location	Girders				Total Quantity	1294.02		
Material	Other			Limite	d Inspection			
Element Type	Red lead prime	/alkyd		Environm	ent			
Protection System	Red lead prime	/alkyd		🖌 Benigi	n			
Condition Data	Units Exc	ell. Good Fair	Poor	Moder	ate			
Comments	sq. m	0.00 1262.02 16.0	0 16.00	Sever	e			
		ss of coating in localized areas.	Driovity	Comments				
Performance Deficier	ICIES	Maintenance Needs	Priority	Comments				
None								
Rehab/Repair Recom	mendations	Priority Cost Con	nments					
Coatings - Struct	tural Steel					0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
Element Group	Coatings			Length	0.00 Width	0.00		
Element Name	Structural Steel	End		Height	0.00 Count	0.00		
Location	Diaphragms			Total Quantity 208.00				
Material	Other			L Limite	d Inspection			
Element Type	Red lead prime	r/alkyd		Environment				
Protection System	Red lead prime	r/alkyd		Benign				
Condition Data	Units Ex	cell. Good Fair	Poor	Mode				
Comments	sq. m	0.00 70.00 69.0	69.00	Sever Sever	e			
Localized areas of coa	ating flaking off en	d diaphragms due to surface corr	osion.					
Performance Deficier	ncies	Maintenance Needs	Priority	Comments				
None								
Rehab/Repair Recom	mendations	Priority Cost Con	nments					
Kenabittepan ttecom								
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Structure Number: Footbridge Rd Bridge

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Coatings - Struct	tural Steel		AL IN THE REAL	Sould start				
Element Group	Coatings			Length	0.00	Width	0.00	
Element Name	Structural Steel	Middle		Height	0.00	Count	0.00	
Location	Diaphragms				Total Q		375.00	
Material	Other			Limited Inspection				
Element Type	Red lead prime	r/alkyd		Environment				
Protection System	Red lead prime	r/alkyd		🖌 Benigr	ı			
Condition Data	Units Exc	cell. Good Fair	Poor	Moder	ate			
Comments	sq. m	0.00 375.00 0.0	0.00	Severe Severe	e			
Localized light corrosid	on.							
Performance Deficier	ncies	Maintenance Needs	Priority	Comments				
None								
D. L. L (D	mendeti	Priority Cost Com	ments					
Rehab/Repair Recom	mendations	Priority Cost Com	menta					
Decks - Deck To	n		· 11년 - 11년 -	6. 19. 5. 15.				
Element Group	Decks			Length	122.50	Width	10.40	
Element Name	Deck Top					Count	1.00	
Location		Wearing Surface		Height	Total C	uantity	1274.00	
Material	Cast-in-place c			🔲 Limite	d Inspecti	on		
Element Type				Environm	ent			
Protection System				Benig				
Condition Data	Units Ex	cell. Good Fair	Poor	Mode				
Condition Data	sq. m	0.00 470.00 403.0		Sever				
Comments		ondition survey report by SPL dat	od Oct 17/2014					
Based on condition of								
Performance Deficie	ncies	Maintenance Needs	Priority	Comments				
None								
Rehab/Repair Record	nmendations	Priority Cost Con	nments					
			osted under Dec	k Wearing Su	face			
Rehab/Repair Recom	nmendations			k Wearing Su	face			

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Municipal Structure Inspection Form

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Structure	Number:	Footb
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Footbridge Rd Bridge

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Decks - Drainage			S. MAG	8.123	the part of the				1997	
Element Group	Decks					Length	0.00	Width	0.00	
Element Name	Drainage					Height	0.00	Count	8.00	
Location	All						Total C	uantity	8.00	
Material	Steel					Limited Inspection				
Element Type	Drain Pipe with	Basins				Environm	ent			
Protection System	None					🔲 Benigi	n			
Condition Data	Units Exc	cell. Goo	od Fa	air	Poor	Moder	ate			
Comments	Each	0.00	5.00	1.00	2,00	Sever Sever	e			
150mm deck drain pip pier are broken and di drain on north side by	slocated from gutt	surface corros er system at to	ion. Tops of s p causing lea	ome decl kage and	k drains have corrosion of	e light corrosic girders. Signs	n. Two dra of water h	ain pipes l eakage al	by east so at	
Performance Deficier	ncies	Maintenanc	e Needs		Priority	Comments				
Deck drainage										
Rehab/Repair Recom	mendations	Priority	Cost	Commen						
Rehab		1-5 yrs	\$5,000		ce two drains g drain at no	s near east pie rthwest.	r. Repair			
Decks - Soffit - T	hin Slab						222	63.54		
Element Group	Decks	Decks				Length	4.00	Width	10.40	
Element Name	Soffit - Thin Sla	ıb	End			Height	0.00	Count	0.00	
Location								Quantity	41.60	
Material	Cast-in-place c	oncrete				Limited Inspection				
Element Type						Environment				
Protection System	None					🔲 Benig	n			
Condition Data	Units Ex	cell. Go	od F	air	Poor	Mode 🗹	rate			
Comments	sq. m	0.00	38.60	2.00	1.00	Sever Sever	e			
Hairline to narrow crae	cks, delamination,	narrow staineo	I cracks, wet	areas.						
Performance Deficie	ncies	Maintenanc	e Needs		Priority	Comments				
None										
Rehab/Repair Recon	nmendations	Priority	Cost	Comme	nts					

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Municipal Structure Inspection Form

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Structure Number:	Footbridge Rd Bridge

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Element Name Soffit - Thin Slab Exterior Height 0.00 Courrel Location Underside of Deck Total Quantities Total Quantities Image: Control of Courrel Image: Courrel of Courrel Image: Courrel of Courrel Image: Courrel of Courrel Environment Environment Protection System None Image: Courrel of Courrel Image: Courrel of Courrel Image: Courrel of Courrel Image: Courrel of Courrel Image: Courrel of Courrel of Courrel of Courrel of Courrel Image: Courrel of	s - Soffit - Thin	in Slab	10011		1. Ser lar					
Location Underside of Deck Total Quantif Material Cast-in-place concrete Limited Inspection Element Type Protection System None Benign Condition Data Units Excell. Good Fair Poor Moderate Comments sq. m 0.00 292.10 8.00 8.00 Severe Narrow stained cracks, barn swallow nests. None Severe Severe Severe Performance Deficiencies Maintenance Needs Priority Comments None Performance Deficiencies Maintenance Needs Priority Comments Decks - Soffit - Thin Slab Interior Length 118.50 Widt Element Group Decks Length 118.50 Widt Location Underside of Deck Total Quanti Total Quanti Material Cast-in-place concrete Element Type Environment Protection System None Severe Severe Condition Data Units Excell. Good Fair Poor Moderate Comments <t< th=""><th>nt Group De</th><th>Decks</th><th></th><th></th><th></th><th>Length</th><th>118.50 V</th><th>Vidth</th><th>2.60</th></t<>	nt Group De	Decks				Length	118.50 V	Vidth	2.60	
Material Cast-in-place concrete Limited Inspection Element Type Environment Benign Condition Data Units Excell. Good Fair Poor Moderate Comments Good Fair Poor Moderate Severe Narrow stained cracks, barn swallow nests. None Severe Severe Performance Deficiencies Maintenance Needs Priority Comments None Performance Deficiencies Maintenance Needs Priority Comments Decks Soffit - Thin Slab Length 118.50 Widt Element Group Decks Length 118.50 Widt Lication Underside of Deck Total Quanti Total Quanti Material Cast-in-place concrete I.Limited Inspection Environment Protection System None Severe Moderate Severe Condition Data Units Excell. Good Fair Poor Moderate Condition Data Units Excell. Good Fair Poor Moderate	nt Name So	Soffit - Thin Slab		Exterior		Height	0.00	ount	1.00	
Element Type Environment Protection System None Condition Data Units Excell. Good Fair Poor Marrow stained cracks, barn swallow nests. Performance Deficiencies Maintenance Needs Priority Comments None Performance Deficiencies Maintenance Needs Priority Comments None Performance Deficiencies Maintenance Needs Priority Comments Decks - Soffit - Thin Slab Element Group Decks Length 118.50 Widt Element Name Soffit - Thin Slab Interior Height 0.00 Court Location Underside of Deck Interior Height O.00 Court Location Underside of Deck Interior Environment Environment Protection System None Sesere Severe Moderate Condition Data Units Excell. Good Fair Poor Moderate Condition Data Units Excell. Good Fair Poor Moderate Rust staining, narrow sta	ion Un	Underside of Deck					Total Qua	antity	308.10	
Protection System None Benign Condition Data Units Excell. Good Fair Poor Moderate Comments sq. m 0.00 292.10 8.00 8.00 Severe Narrow stained cracks, bern swallow nests. Image: Severe Narrow stained cracks, bern swallow nests. Severe Performance Deficiencies Maintenance Needs Priority Comments None Priority Cost Comments None Priority Cost Comments None Priority Cost Comments None Decks Soffit - Thin Slab Interior Element Group Decks Interior Height 0.00 Count Location Underside of Deck Total Quanti Material Cast-in-place concrete Environment Environment Protection System None Øcod Fair Poor Moderate Quantization Underside of Deck Good Fair Poor Moderate Resident Type Environment Envinonment Benign Good	i al Ca	Cast-in-place concre	te			Limited Inspection				
Condition Data Units Excell. Good Fair Poor Moderate Comments sq. m 0.00 292.10 8.00 8.00 Severe Narrow stained cracks, barn swallow nests. Image: Severe Severe Severe Performance Deficiencies Maintenance Needs Priority Comments None Priority Cost Comments None Performance Deficiencies Maintenance Needs Priority Comments None Performance Deficiencies Maintenance Needs Priority Comments None Performance Deficiencies Maintenance Needs Priority Comments Decks Soffit - Thin Slab Interior Length 118.50 Widt Element Name Soffit - Thin Slab Interior Height 0.00 Count Icoation Underside of Deck Total Quanti Material Cast-in-place concrete Environment Element Type Environment Senign Good Fair Poor Moderate Comments sq. m 0.00 858.30 33.	ent Type									
Comments sq. m 0.00 292.10 8.00 8.00 Severe Narrow stained cracks, barn swallow nests. Performance Deficiencies Maintenance Needs Priority Comments None Performance Deficiencies Maintenance Needs Priority Comments None Performance Deficiencies Maintenance Needs Priority Comments Decks Soffit - Thin Slab Length 118.50 Widt Element Group Decks Length 118.50 Widt Location Underside of Deck Total Quanti Total Quanti Material Cast-in-place concrete Imment Environment Protection System None Severe Moderate Comments sq. m 0.00 858.30 33.00 33.00 Severe Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Priority Comments None Priority Comments	tion System No	None								
Comments Link	tion Data Uni	Units Excell.	Good	Fair	Poor	Moder 🖌	rate			
Marrow stained cracks, barn swallow nests. Performance Deficiencies Maintenance Needs Priority Comments None Priority Cost Comments Rehab/Repair Recommendations Priority Cost Comments Decks - Soffit - Thin Slab Length 118.50 Widt Element Group Decks Length 118.50 Widt Location Underside of Deck Total Quantities Total Quantities Material Cast-in-place concrete Image: Condition Data Imits Excell. Good Fair Poor Moderate Condition Data Units Excell. Good Fair Poor Moderate Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations.		sq. m 0.0	0 292.10	8.00	8.00	Severe	e			
None Rehab/Repair Recommendations Priority Cost Comments Decks - Soffit - Thin Slab Length 118.50 Widt Element Group Decks Length 118.50 Widt Element Name Soffit - Thin Slab Interior Height 0.00 Court Location Underside of Deck Total Quantit Material Cast-in-place concrete Imited Inspection Element Type Environment Material Benign Condition Data Units Excell. Good Fair Poor Moderate Comments sq. m 0.00 858.30 33.00 33.00 Severe Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations, Performance Deficiencies Maintenance Needs Priority Comments None Maintenance Needs Priority Comments Maintenance Needs Priority Comments	w stained cracks, barr	oarn swallow nests.								
Rehab/Repair Recommendations Priority Cost Comments Decks - Soffit - Thin Slab Interior Length 118.50 Width Element Group Decks Length 118.50 Width Element Name Soffit - Thin Slab Interior Height 0.00 Count Location Underside of Deck Total Quantil Material Cast-in-place concrete Imited Inspection Element Type Environment Imited Benign Benign Environment Protection System None Imites Besign Imites Comments Imites Good Fair Poor Moderate Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Severe Imitenance Needs Priority Comments None Maintenance Needs Priority Comments Imitenance Needs Priority Comments	rmance Deficiencies	ies M	aintenance Need	s	Priority	Comments				
Decks - Soffit - Thin Slab Element Group Decks Length 118.50 Widt Element Name Soffit - Thin Slab Location Underside of Deck Material Cast-in-place concrete Element Type Environment Protection System None Condition Data Units Excell. Good Fair Poor Moderate Severe Comments Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations, Performance Deficiencies Maintenance Needs Priority Comments										
Element Group Decks Length 118.50 Width Element Name Soffit - Thin Slab Interior Height 0.00 Counting Location Underside of Deck Total Quanting Total Quanting Interior Interior Interior Interior Interior Interior Total Quanting Material Cast-in-place concrete Interior	o/Repair Recommen	endations	Priority C	ost Commer	nts					
Element Name Soffit - Thin Slab Interior Height 0.00 Court Location Underside of Deck Total Quantitient Material Cast-in-place concrete Imited Inspection Element Type Environment Protection System None Benign Condition Data Units Excell. Good Fair Poor Moderate Comments sq. m 0.00 858.30 33.00 33.00 Severe Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Priority Comments None Maintenance Needs Priority Comments	s - Soffit - Thin	in Slab						1.5.1		
Location Underside of Deck Total Quanti Material Cast-in-place concrete Imited Inspection Element Type Environment Benign Protection System None Moderate Condition Data Units Excell. Good Fair Poor Moderate Comments sq. m 0.00 858.30 33.00 33.00 Severe Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Maintenance Needs Priority Comments None Maintenance Needs Priority Comments Maintenance Needs Priority Comments	ent Group					1		Nidth	7.80	
Material Cast-in-place concrete Imited Inspection Element Type Environment Environment Protection System None Imited Inspection Condition Data Units Excell. Good Fair Poor Moderate Comments Sq. m 0.00 858.30 33.00 33.00 Severe Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Maintenance Needs Priority Comments None Maintenance Needs Priority Comments	ent Name So	Soffit - Thin Slab Interior				Height			1.00	
Element Type Environment Protection System None Ø Benign Condition Data Units Excell. Good Fair Poor Moderate Sq. m 0.00 858.30 33.00 33.00 Severe Comments Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations, Severe Performance Deficiencies Maintenance Needs Priority Comments None Severe Severe Severe	ion Ur	Underside of Deck]	_		<u> </u>	924.30	
Protection System None Image: Condition Data Units Excell. Good Fair Poor Moderate Sq. m 0.00 858.30 33.00 33.00 Severe Comments Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Severe Performance Deficiencies Maintenance Needs Priority Comments None Severe Severe Severe	ial Ca	Cast-in-place concr	ete			Limite	d Inspection	n		
Condition Data Units Excell. Good Fair Poor Moderate sq. m 0.00 858.30 33.00 33.00 Severe Comments Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Severe Performance Deficiencies Maintenance Needs Priority Comments None Severe Severe Severe	ent Type					Environm	tent			
Sq. m 0.00 858.30 33.00 Severe Comments Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations. Performance Deficiencies Maintenance Needs Priority Comments None Maintenance Needs Priority Comments	ction System No	None				🖌 Benig	n			
Comments Control Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations, Performance Deficiencies None Maintenance Needs Priority Comments	ition Data Un	Units Excell.	Good	Fair	Poor	Mode:	rate			
Rust staining, narrow stained and unstained cracks, wet areas, spalls, delaminations, Performance Deficiencies None Maintenance Needs Priority		sq. m 0.0	0 858.30	33.00	33.00	Sever Sever	e			
None										
		ies N	aintenance Need	S	Priority	Comments				
		nendations	Priority C	cost Comme	nts					

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Municipal Structure Inspection Form

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Structure Number:	Footbridge Rd Bridge
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Decks - Wearing	Surface	1. 1.2		10 . de			Star Red	106 53	S. Stanley	
Element Group	Decks					Length	122.50	Width	8.62	
Element Name	Wearing Surfa	ace				Height [0.00	Count	1.00	
Location	Top of Deck					_		uantity	1055.95	
Material	Asphalt					Limited Inspection				
Element Type						Environment				
Protection System	None					🔲 Benign				
Condition Data	Units E	xcell.	Good	Fair	Poor					
Comments	sq. m	0.00	983.95	68.00	4.00	Sever Sever	e			
Narrow to wide longitu light ravelling.	dinal and transv	erse crack	s. Grass growir	ig along edge	adjacent to c	curb. Evidence	e of deck c	ondition s	urvey,	
Performance Deficier	ncies	Maint	enance Needs		Priority	Comments				
None										
Rehab/Repair Recom	mendations		ority Co.			of & Dovo				
Rehab		1-5	-	,000 Overla	iy, Waterproo	JAPave		TAL STORE	A0150A	
Embankments &	-			Station in the	ALL SUPPORT	Longth	0.00	Width	0.00	
Element Group		Embankments & Streams				Length		Count	6.00	
Element Name	Embankment					Height				
Location	All Quadrants	, In Front o	of Abutments			Total Quantity 6.00				
Material	Other					Limited Inspection				
Element Type						Environn				
Protection System	None			the states		Benig				
Condition Data		xcell.	Good	Fair	Poor	Mode				
Comments	Each	0.00	4.00	2.00	0.00	🔳 Seve	re			
Moderate erosion in th	ne northeast and									
Performance Deficie	ncies	Maint	enance Needs		Priority	Comments				
None										
Rehab/Repair Recom	mendations	Pri	ority Co	st Comme	nts					

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Structure Number:	Footbridge F	Rd Bridge
Structure Number.	FUULDITUge I	tu Dhuge

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Municipal Structure Inspection Form

Streams - S	Slope Pro	otection	P. C. Storn			1.1		
Embankmen	ts & Stream	IS			Length	0.00	Width	0.00
Slope Protec	tion				Height	0.00	Count	6.00
All Quadrant	s, In Front o	of Abutments				Total C	uantity	6.00
Other					🗌 Limite	d Inspect	ion	
					Environm	ent		
None					Benign			
Units I	Excell.	Good	Fair	Poor	Moderate			
Each	0.00	6.00	0.00	0.00	🔳 Sever	e		
ncies	Maint	enance Needs		Priority	Comments			
				ents				
			s			N.S.		
Embankmen	Embankments & Streams							0.00
Streams & V	Vaterways				Height			1.00
Through Stru	ucture				_			1.00
Other					Limited Inspection			
					Environment			
None					🔳 Benig	In		
Units	Excell.	Good	Fair	Poor	Mode	rate		
All	0.00	1.00	0.00	0.00	🔳 Seve	re		
is along upstre								
ncies	Main	tenance Needs		Priority	Comments			
			st Comm					
	Embankmen Slope Protect All Quadrant Other Units L Each Each Streams - S Embankmer Streams & V Through Stre Other Other None Units All	Embankments & Stream Slope Protection All Quadrants, In Front of Other Image: Im	All Quadrants, In Front of Abutments Other None Units Excell. Good Each 0.00 6.00 mendations Priority Co. Streams - Streams & Waterway Embankments & Streams Streams & Waterways Through Structure Other Units Excell. Good All 0.00 1.00	Embankments & Streams Slope Protection All Quadrants, In Front of Abutments Other Image: Image	Embankments & Streams Slope Protection All Quadrants, In Front of Abutments Other Inits Excell. Good Fair Poor Each 0.00 6.00 0.00 0.00 6.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.00 0.00 0.00 0.00 0.00	Embankments & Streams Length Slope Protection Height All Quadrants, In Front of Abutments Limite Other Environm None Benig Units Excell. Good Fair Poor Each 0.00 6.00 0.00 ncies Maintenance Needs Priority Comments mendations Priority Cost Comments Streams - Streams Length Streams & Waterways Height Through Structure Limite Other Limite Invis Excell. Good Vale Good Fair Poor Itimite Intrough Structure Length Units Excell. Good All 0.00 1.00 0.00 0.00 Steven salong upstream side of east pler. Steven Steven	Embankments & Streams Length 0.00 Slope Protection Height 0.00 All Quadrants, In Front of Abutments Total C Other Limited Inspect Image: District of Abutments Environment None Benign Units Excell. Good Fair Poor Moderate Each 0.00 6.00 0.00 None Severe Immendations Priority Cost Streams - Streams & Waterways Length 0.00 Embankments & Streams Length 0.00 Streams & Waterways Height 0.00 Through Structure Total C Environment None Environment Benign Units Excell. Good Fair Poor All 0.00 1.00 0.00 0.00 Severe is along upstream side of east pier. severe Severe Severe	Embankments & Streams Length 0.00 Width Slope Protection Itelight 0.00 Count All Quadrants, In Front of Abutments Itelight 0.00 Count Other Itelight Itelight 0.00 Count None Environment Benign Itelight Moderate Each 0.00 6.00 0.00 0.00 Severe Ancies Maintenance Needs Priority Comments Interest & Streams Katerways Embankments Length 0.00 Width Streams - Streams & Waterways Length 0.00 Count Total Quantity Other Itemate Itemate Itemate Environment Streams & Waterways Itemate Itemate Itemate Through Structure Itemate Itemate Environment None Environment Itemate Benign Units Excell. Good Fair Poor All 0.00 1.00 0.00 0.00 Itemate is along upstream side of east p

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Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

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Joints - Armouri	ng/Retaining	Devices	1.1/3.1				
Element Group	Joints			Length 10.40 Width 0.00			
Element Name	Armouring/Reta	aining Devices		Height 0.00 Count 1.00			
Location	West End of De	eck (Finger Joint)	1/	Total Quantity 10.40			
Material	Steel			Limited Inspection			
Element Type				Environment			
Protection System	None			Benign			
Condition Data	Units Exc	cell. Good Fair	Poor	Moderate			
Comments	m	0.00 10.40 0.00	0.00	Severe			
Light localized surface	corrosion. Cover	plate not connected to curb at north	side. Minor so	rape damage.			
Performance Deficier	ncies	Maintenance Needs	Priority	Comments			
None							
Dahah/Danair Daaam	mondations	Priority Cost Comme	onte				
Rehab/Repair Recom	mendations		ed under seal	S			
Joints - Concrete	e End Dams						
Element Group	Joints			Length 8.62 Width 0.30			
Element Name	Concrete End	Dams		Height 0.00 Count 3.00			
Location	At Joints			Total Quantity 7.80			
Material	Cast-in-place c	oncrete		Limited Inspection			
Element Type				Environment			
Protection System	None			🔲 Benign			
Condition Data	Units Ex	cell. Good Fair	Poor	Moderate			
Commonts	sq. m	0.00 3.80 3.00	1.00	Severe			
Comments Moderate abrasions, asphalt patches, narrow to medium cracks, delaminations.							
Performance Deficien	ncies	Maintenance Needs	Priority	Comments			
None							
Rehab/Repair Recom	mendations						
		Priority Cost Comme					

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Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

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Joints - Seals/Se	alants	心況 起いたく 川	그렇지 않았는			<u>17. 2. HV. M</u>	
Element Group	Joints			Length	10.40 Width	0.00	
Element Name	Seals/Sealants			Height	0.00 Count	1.00	
Location	At Joints				Total Quantity	1.00	
Material	Rubber			Limite	d Inspection		
Element Type	Strip Seal			Environm	ent		
Protection System	None			Benigr	ı		
Condition Data	Units Exc	ell. Good	Fair Poor	Moder	ate		
Comments	m	0.00 0.00	0.00 1.	00 Severe	e		
		placed at several location	ns, Evidence of leakag				
Performance Deficien None	ICIES	maintenance needs	FIION	y commenta			
NULE							
Rehab/Repair Recom	mendations	Priority Cos	st Comments				
Replace		1-5 yrs \$70,	000 Replace expan	sion joints			
Bracing - Bracing	g	A NEW SUCCESSION		The local difference			
Element Group	Bracing			Length	3.00 Width	0.15	
Element Name	Bracing	C	ross Bracing	Height	0.15 Count	16.00	
Location	Underside of De	eck			Total Quantity	16.00	
Material	Steel			Limite	Limited Inspection		
Element Type				Environm	ent		
Protection System				🗹 Benigi	n		
Condition Data		cell. Good	Fair Poor	Moder			
Comments	Each	0.00 16.00	0.00 0.	00 Seven	e		
Performance Deficier None Rehab/Repair Recom		Maintenance Needs Priority Co.	Priori st Comments	ty Comments			

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Municipa	Structure	Inspection	Form
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Structure Number: Footbridge Rd Bridge

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Piers Bearings						
Rearings			Length	0.00	Width	0.00
Dearingo			Height	0.00	Count	8.00
All			_	Total Qu		8.00
[Limited	d Inspectio	on	
			Environm	Environment		
None			🗹 Benigr	n		
Units E	xcell. Good	Fair Poor	Moder:	ate		
Each	0.00 8.00	0.00 0.00	Severe	e		
rvey report by Sl tes.	PL. Pier bearings are in ge	nerally good condition wi	un narrow crack	.5, minor bl	aging and	357616
ncies	Maintenance Needs	Priority	Comments			
nmendations	Priority Cos	t Comments				
olumns/Pile I	Bents			The Me		
Piers			Length	0.80	Width	10.40
Shafts/Colum	ns/Pile Bents		Height	4.80	Count	2.00
All	Pi			Total Q	uantity	215.04
	concrete		Limited Inspection			
k			Environm	ent		
None			🖌 Benigi	n		
L	xcell. Good	Fair Poor	Moder	rate		
sq. m	0.00 201.04	14.00 0.00	Sever	e		
nstained cracks,	wet areas, light honeycon	bing, localized medium o	racks.			
encies	Maintenance Needs	Priority	Comments			
nmendations	Priority Co.	st Comments				
	Units Exact Each	Units Excell. Good Each 0.00 8.00 invey report by SPL. Pier bearings are in generations Maintenance Needs incles Maintenance Needs inmendations Priority Cost olumns/Pile Bents Piers Shafts/Columns/Pile Bents All Cast-in-place concrete Concrete shafts, pier walls None Units Excell. Units Excell. Good sq. m 0.00 201.04 instained cracks, wet areas, light honeycom Maintenance Needs	Units Excell. Good Fair Poor Each 0.00 8.00 0.00 0.00 invey report by SPL. Pier bearings are in generally good condition wites. Maintenance Needs Priority incles Maintenance Needs Priority inmendations Priority Cost Comments Dlumns/Pile Bents Image: Concrete Shafts, pier walls Image: Concrete Shafts, pier walls Image: Concrete Shafts, pier walls None Units Excell. Good Fair Poor Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que de la concrete Image: Que d	Image: Strategy of the series of the seri	Environment None Units Excell. Good Fair Poor Moderate Each 0.00 8.00 0.00 0.00 Severe rrvey report by SPL. Pier bearings are in generally good condition with narrow cracks, minor butes. ncies Maintenance Needs Priority Comments nmendations Priority Cost Comments Dumns/Pile Bents Length 0.80 Piers Length 4.80 All Total Q Cast-in-place concrete Limited Inspectit None Ø Benign Units Excell. Good None Ø Benign Units Excell. Good sq. m 0.00 201.04 14.00 0.00 Severe Instained cracks, wet areas, light honeycombing, localized medium cracks. mcles Maintenance Needs Priority Comments	Image: Contract of the second seco

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Structure Number: Footbridge Rd Bridge

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Sidewalks/curbs	- Curbs				the state		Hardes	LYZ ME
Element Group	Sidewalks/curbs	5			Length	127.25	Width	0.58
Element Name	Curbs				Height	0.20	Count	2.00
Location	North and South	Sides				Total Q	uantity	198.50
Material	Cast-in-place co	oncrete			Limite	d Inspecti	on	
Element Type					Environm	ent		
Protection System	None				🔲 Benigr	ı		
Condition Data	Units Exc	ell. Good	Fair	Poor	🔲 Moder	ate		
Comments	sq. m	0.00 185.50	11.00	2.00	Severe Severe	e		
Light scaling, delamina SPL.	ations, minor abra:	sions, narrow to medium	Cracks, 8% 0	n area nas Hu	JP based on t			JIL Dy
Performance Deficier	ncies	Maintenance Needs		Priority	Comments			
None	mondations	Priority Cos	st Commen	nts				
Rehab/Repair Recom	menuations	1-5 yrs \$250,			alk on one sid	е		
•	oundations (b	elow ground level)				446	12100	(Value)
Element Group	Foundations	,			Length	0.00	Width	0.00
Element Name	Foundations (be	elow ground level)			Height [0.00	Count	0.00
Location	At Abutments/P	liers				Total C	uantity	0.00
Material					🗹 Limite	d Inspect	on	
Element Type					Environment			
Protection System	1				🔳 Benigi	n		
Condition Data	Units Exc	cell. Good	Fair	Poor	Moder	ate		
0	N/A				Sever	e		
Comments Limited inspection.								
Performance Deficier	ncies	Maintenance Needs		Priority	Comments			
None Rehab/Repair Recom	nmendations	Priority Co:	st Commer	nts				

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Municipal Structure Inspection Form

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Structure Number: Footbridge Rd Bridge

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Repairicen	abilitation Require	•		나는 그는 것이 물질 것 같아요? 것은 것이 많아요?	NEC SIN TH
Element Group	Element		Repair/Rehabilitation	Priority	Cost
Abutments	Abutment Walls		Rehab	1-5 yrs	\$10,000
Approaches	Approach Guiderail		Replace	1-5 yrs	\$110,000
Approaches	Approach Guiderail	Terminal	Replace		\$C
Joints	Armouring/Retaining Devices		Replace	1-5 yrs	\$0
Abutments	Ballast Walls		Rehab	1-5 yrs	\$0
Barriers	Barrier/Parapet Walls	Exterior	Replace	1-5 yrs	\$0
Barriers	Barrier/Parapet Walls	Interior	Replace	1-5 угѕ	\$420,000
Sidewalks/curbs	Curbs		Replace	1-5 yrs	\$250,000
Decks	Deck Top		Rehab	1-5 yrs	\$(
Decks	Drainage		Rehab	1-5 yrs	\$5,000
Barriers	Hand Railings		Replace	1-5 yrs	\$0
Joints	Seals/Sealants		Replace	1-5 yrs	\$70,000
Decks	Wearing Surface		Rehab	1-5 yrs	\$725,000
Abutments	Wingwalls		Rehab	1-5 yrs	\$3,000
				Total Repair/Rehabilitation Cost	\$1,593,000

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Associated Work

	Comments		Estimated Co
Approaches			\$100,000
Detours			\$0
Traffic Control			\$100,000
Utilities			\$0
Right-of-Way			\$0
Environmental Study			\$20,000
Other	Bond / Insurance / Access / Mobilization	n / Environmental	\$200,000
Contingencies		10 %	** \$210,000
Engineering		20 %	** \$410,000
** If based on a percent	age calculated values rounded-up to the	Total Associated Work Cost	\$1,040,000
nearest thousand dollars.		Total Repair/Rehabilitation Cost	\$1,593,000
		Total Cost	\$2,633,000
		Township of North Dumfries Share @ 100%	\$2,633,000

Justification

Township of Nor	th Dumfries		
Municipal	Structure	Inspection	Form

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Tuesday, December 06, 2016

Municipal Structure Inspection Form

Structure Number: Footbridge Rd Bridge



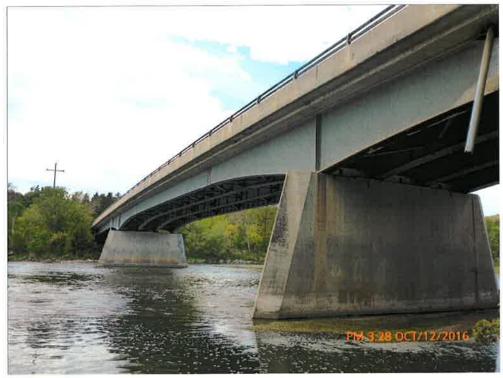
Looking East at Bridge



Looking West at Bridge

Municipal Structure Inspection Form

Structure Number: Footbridge Rd Bridge



South Elevation



Plaque on Bridge Barrier

Municipal Structure Inspection Form



Severe Corrosion and Perforations on Handrail



Light Spall on Interior Parapet Wall

Municipal Structure Inspection Form



Narrow Stained Cracks on Exterior Parapet Wall



Delamination on Curb

Municipal Structure Inspection Form



Wide Cracks on Deck Wearing Surface



East Expansion Joint

Structure Number: Footbridge Rd Bridge



West Expansion Joint



Broken Deck Drain



Light Corrosion on Finger Joint



Moderate Abrasions on Concrete End Dam



Delamination on Concrete End Dams



Displaced Seal



Typical Middle Span Soffit



Delamination on Interior Soffit



Delamination on End Soffit



Typical End Span Soffit



Narrow Stained Cracks on Exterior Soffit



Light Corrosion on Deck Drain

Municipal Structure Inspection Form

Structure Number: Footbridge Rd Bridge



Broken Deck Drain



Typical Bracing



Breakdown of Protective Coating



Severe Corrosion on End Girder

Structure Number: Footbridge Rd Bridge



Localized Medium Corrosion on Girder Middle



Typical Intermediate Diaphragm



Typical End Diaphragm



Medium Corrosion on End Diaphragm



Typical Diaphragm at Pier



Typical Pier

Structure Number: Footbridge Rd Bridge



Narrow Stained Crack on Pier



Typical Pier Bearing

Structure Number: Footbridge Rd Bridge



East Abutment



West Abutment



Delamination on Abutment Wall



Typical East Abutment Bearing



Typical West Abutment Bearing



Severe Squashing of East Abutment Bearing

Structure Number: Footbridge Rd Bridge



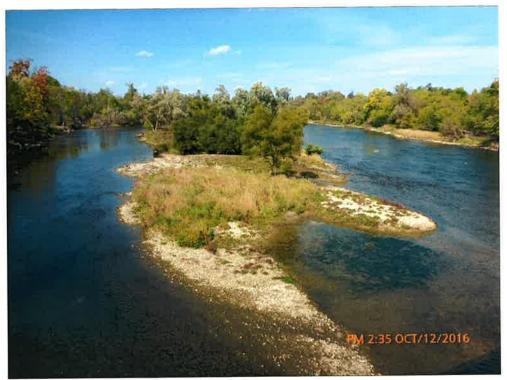
Delamination on Ballast Wall



Typical Wingwall



Spall on Wingwall



Looking North Upstream

Municipal Structure Inspection Form



Looking South Downstream



Minor Build-up of Debris in Watercourse



Gap Between End Dam and Approach Wearing Surface



Minor Collision Damage to Guiderail



Minor Breakdown of Protective Coating



Missing Bolts on Guiderail



Below Standard Guiderail Connection



Light Split in Approach Guiderail Post

Summary Action Report Structure Jedburgh Dam Bridge (MTO Site No. Jedburgh Dam Bridge) Jedburgh Dam Bridge

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nspection Date	10/12/2016	mm/dd/yyyy			Condition In	dex Value	(BCI)	49. 9'
lext Biennial Ir	nspection 10/12/2018	mm/dd/yyyy			Current Rep	. Value	\$:	372,16
Additional Inve	stigations					6		
Investigation		Priority	Cost	Investigation		Prio	rity	Cost
Detailed Deck Co	ndition Survey	Normal	\$10,000					
Concrete Substru	cture Condition Survey	Normal	\$5,000					
Additional investig	gations required see page 3	for details.						
Performance D	eficiencies							
Element Group	Element		F	erformance Deficiency				
Approaches	Wearing Surface		F	Rough riding surface				
Maintenance N	eeds							
Element Group	Element		Mainte	nance Required	Priority	Comment		
Accessories	Signs		Other			Replace pos legal signag		n with
Decks	Wearing Surface		Bridge	Surface Repair	1 yr	Patch potho	les	
Repair/Rehabili	itation							
Element Group	Element		Repair/F	Rehabilitation		Priority	Cost	
Abutments	Abutment Walls		Rehab	Patch repairs		1-5 yrs	\$	20,000
Abutments	Wingwalls		Rehab	Patch repair		1-5 yrs		\$5,000
Approaches	Approach Guiderail		Rehab	Replace guiderail treatments	and end	1-5 yrs	\$	70,000
Approaches	Wearing Surface		Rehab	Rout and seal cra	icks	1-5 yrs		\$5,000
Sidewalks/curbs	Curbs		Rehab	Concrete patch re	epair	1-5 yrs		\$5,000
Piers	Shafts/Columns/Pile Bent	s	Rehab	Patch repairs and	l crack injection	s 1-5 yrs	\$	10,000
Barriers	Railing Systems		Rehab	Replace continuo guiderail	us with approac	ch 1-5 yrs		\$4,000

		%				\$224.000
Township of North Dumfries		100 %	\$224,000.00	Total Assoc	ciated Work Cost	\$85,000
				Total Repair/Rehal	oilitation Cost	\$139,000
Decks	Wearing Surface		Rehab	Seal cracks	1-5 yrs	\$5,000
Decks	Soffit - Thick Slab	Inter	or Rehab	Concrete patches	1-5 yrs	\$10,000
Decks	Soffit - Thick Slab	Exte	rior Rehab	Patch repairs	1-5 yrs	\$5,000

Overall Comments

Concrete patch repairs to abutments, wingwalls, curbs, piers and soffit. Rout and seal cracks on approach wearing surface and deck wearing surface. Replace approach guide rail and provide guide rail continuous over the bridge.

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Inventory Data	
Structure Name	Jedburgh Dam Bridge Hwy No. Main St Key Photo
Cross. Type Over	Road Rail Ped Nav. Water Non-Nav. Wat Other
Cross. Type Under	Road Rail Ped Nav. Water Non-Nav. Wat Other
Road Name	Main Street
Structure Location	Approximately 150m North of Scott Street
Latitude	43.28867 Longitude -80.44700 Cur. Rep.Value \$372,167
Owner(s)/	Township of North Dumfries 100 % **
% Share	% Heritage Status Not Considered for Designation
MTO Region	Southwestern Road Side Env. Urban
MTO District	London/Stratford Road Class Local
Old County	Waterloo Lane Type Regular
Geographic Twp.	North Dumfries Posted Speed 50 No. of Lanes 1
Structure Type	Solid Slab AADT 0 Pct. Trucks 0
Structure Material	Reinforced Cast-in-Place Concrete Inspection Route Sequence
Articulation	Continuous Interchange Number
Total Deck Length	8 m Road Width 4.9 Interchange Structure Number
Overall Width	5.2 m Vert. Clear. 0 Detour Length 0 km Skew Angle 0 *
Total Deck Area	41.60 m ² No. of Spans 2 Fill on Structure 0 m Struct. Dir. North/South
Special Routes	Transit School Truck Bicycle Insp. Duration 1 hr
Spans	** Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capi planning should consider site specific cost factors and requirements for widening or lengthening of the structure
Span Name	Span Length Span Name Span Length
1	4.9 m 2 1.7 m
Historical Data	
Year Built	1940 yyyy Year of Last Major Rehab Уууу
Last OSIM Inspectio	
Last Enhanced OSI	
Last Enhanced Acc	
Last Underwater Ins	
Last Condition Surv	
Rehab History	
	Rehab Description
5	Substructure repairs (date unknown)
1 /1 /2011	Approach wearing surface rehabilitation

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Municipal Structure Inspection Form

Structure Number:	Jedburgh	Dam	Bridge
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Field Inspect	on Information:	
Inspection Date	10/12/2016 mm/dd/yyyy Multi Day Inspection OSIM Enhanced OSIM BCI 4	49.91
Inspector	D. L. Baxter, P. Eng. Eng. Responsible D. L. Baxter, P. Eng.	
Others in Party	C. Harper J. Parkinson	
Access Equip.	🔲 Lift 🔄 Ladder 🛄 Boat 🔄 Bridge Master Other	
Other Equip.	Camera, Hammer, Other Hand Tools	
Weather	Sunny Temperature 10 °C	

Investigation None Detailed Deck Condition Survey □ Delamination Survey of Asphalt-Covered Deck □ Concrete Substructure Condition Survey □ Detailed Coating Condition Survey □ Detailed Timber Investigation □ Post-Tensioned Strand Investigation □ Underwater Investigation □ Fatigue Investigation □	Normal	Urgent		\$10,000 \$0 \$5,000 \$0 \$0
Delamination Survey of Asphalt-Covered DeckIIIConcrete Substructure Condition SurveyIIIDetailed Coating Condition SurveyIIIDetailed Timber InvestigationIIIPost-Tensioned Strand InvestigationIIIIUnderwater InvestigationIIII				\$0 \$5,000 \$0
Concrete Substructure Condition SurveyIDetailed Coating Condition SurveyIDetailed Timber InvestigationIPost-Tensioned Strand InvestigationIUnderwater InvestigationI				\$5,000 \$0
Detailed Coating Condition Survey Image: Condition Survey Detailed Timber Investigation Image: Condition Survey Post-Tensioned Strand Investigation Image: Condition Survey Underwater Investigation Image: Condition Survey				\$0
Detailed Timber Investigation Image: Comparison of the second s				
Post-Tensioned Strand Investigation				\$0
Underwater Investigation				
				\$0
Estique Investigation				\$0
				\$0
Seismic Investigation				\$0
Structure Evaluation				\$0
Monitoring of Deformations, Movements and Settlements				\$0
Monitoring of Crack Widths				\$0
Investigation Notes			Total Cost	\$15,000

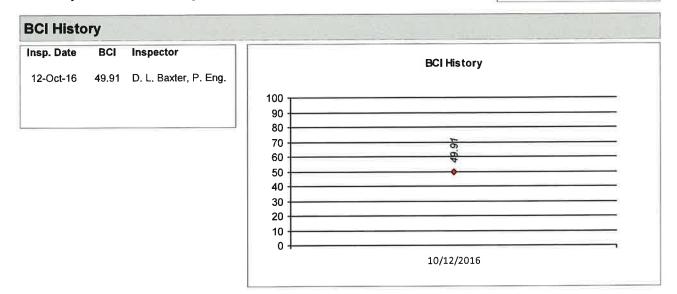
Overall Structure Notes: Rehab Replace Remove None **Recommended Work on Structure** 6 to 10 years None Now 1 to 5 years Timing of Recommended Work Concrete patch repairs to abutments, wingwalls, curbs, piers and soffit. Rout and seal cracks on approach wearing surface and deck wearing surface. Replace approach guide rail and provide guide rail continuous over the bridge. Overall Comments **BCI Change** Justification Estimated Load Limit t t t 10/12/2018 mm/dd/yyyy **Next Inspection**

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Municipal Structure Inspection Form

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All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

Standard Codes

Suspected Performance Deficiencies

- 00 None
- Load carrying capacity 01
- Excessive deformations (deflections/rotations) 02
- Continuing settlement 03
- Continuing movements 04 05 Seized bearings

Maintenance Needs

- Lift and Swing Bridge Maintenance 01
- 02
- Bridge Cleaning Bridge Handrail Maintenance Painting Steel Bridge Structures Bridge Deck Joint Repair 03
- 04
- 05 06
- Bridge Bearing Maintenance

- 06 Bearing not uniformly loaded/unstable 07 Jammed expansion joint
- 08 Pedestrian/vehicular hazard
- 09 Rough riding surface
- 10 Surface ponding
- 11 Deck drainage
- 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

- Slippery surfaces
- 13 Flooding/channel blockage
- 14 Undermining of foundation
- 15 Unstable embankments
- 16 Other

12

- 13 Erosion Control at Bridges
- 14 Concrete Sealing
- 15 Rout and Seal
- Bridge deck Drainage 16
- 17 Scaling (Loose Concrete or ACR Steel)
- 18 Other

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Element Data	hiji da sa					
Abutments - Abu	tment Walls		ni Wester			
Element Group	Abutments			Length 0.00 Width 9.6		
Element Name	Abutment Wall	3		Height 2.70 Count 2.0		
Location	North and Sout	h Sides	Total Quantity 51.8			
Material	Cast-in-place c	oncrete		Limited Inspection		
Element Type	Conventional C	losed	Environment			
Protection System	None			🗹 Benign		
Condition Data	Units Ex	cell. Good Fair	Poor	Moderate		
Comments	sq. m	0.00 10.00 31.84	10.00	Severe		
Spalls, concrete pater	les, deponded cor	icrete patches. Light to severe sca	ing, delaminatio	ns, narrow stained cracks, efflorescence.		
Performance Deficie	ncies	Maintenance Needs	Priority	Comments		
None Rehab/Repair Recom Rehab	nmendations	Priority Cost Com 1-5 yrs \$20,000 Pa	<i>nents</i> tch repairs			
Abutments - Wir	ngwalls					
Element Group	Abutments			Length 1.20 Width 0.3		
Element Name	Wingwalls			Height 1.00 Count 4.0		
Location	All Quadrants		Total Quantity 4.8			
Material	Cast-in-place of	oncrete	Limited Inspection			
Element Type	Reinforced cor	crete		Environment		
Protection System	None			🔲 Benign		
Condition Data	Units Ex	cell. Good Fair	Poor	Moderate		
	sq. m	0.00 1.00 2.80	1.00	Severe		
Comments Light to medium scali northwest.	ng, narrow to med	ium cracks, debonded concrete pa	tch in northwest	and localized severe scaling in the		
Performance Deficie	ncies	Maintenance Needs	Priority	Comments		
None						
Rehab/Repair Recon	nmendations		ments			
Rehab		1-5 yrs \$5,000 ₽a	tch repair			

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Accessories - Sig	gns					
Element Group	Accessories			Length	0.00 Width	0.00
Element Name	Signs			Height	0.00 Count	12.00
Location	All Quadrants				Total Quantity	12.00
Material	Steel			Limited	Inspection	
Element Type				Environment		
Protection System	None		🔲 Benign			
Condition Data	Units Exc	ell. Good Fa	ir Poor	Moderate		
	Each	0.00 12.00	0.00	V Severe	÷	
Comments 4 hazard signs, 2 narro	ow bridge signs wi	th one lane tabs, 2 - 10 tonne	e load limit signs with	narrow bridge	tabs.	
Performance Deficier	ncies	Maintenance Needs	Priority	Comments	ing sign with legal si	gnage
None		Other	1 yr	replace post	ing sign with legal si	gnage
Rehab/Repair Recom	mendations	Priority Cost	Comments			
Approaches - Ap	proach Guide	erail	The state of the state	AN ARE HELL		5 3 5
Element Group	Approaches			Length	9.50 Width	0.00
Element Name	Approach Guiderail			Height	0.55 Count	4.00
Location	At Approaches			Total Quantity	38.00	
Material	Steel			Limited Inspection		
Element Type	Steel Beam on	Wood Posts		Environm	ent	
Protection System	Hot dip galvani	zing		🔲 Benigr	ı	
Condition Data	Units Ex	cell. Good Fa	air Poor	🔲 Moder	ate	
Comments	m	0.00 38.00	0.00 0.00	Severe	e	
2 SBGR panels at each suit structure alignment	nt and welded to b	els at northwest corner. All pa ridge. Railing does not meet ot attached to the end post. C	current design stand	ards and is not	R at northwest is be attached to structur	ent to e.
Performance Deficie	ncies	Maintenance Needs	Priority	Comments		
None						
Rehab/Repair Recom	mendations	Priority Cost	Comments			
Rehab		1-5 yrs \$70,000	Replace guiderail	and end treatm	ents	

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Element Group							and the second se	
	Approaches					Length	6.00 Width	4.90
Element Name	Wearing Surfa	ace				Height	0.00 Count	2.00
Location	North and So	uth Approaches					Total Quantity	58.80
Material	Asphalt					Limited	d Inspection	
Element Type					Environm	ent		
Protection System	None			Benign				
Condition Data	Units Excell. Good Fair Poor			Moderate				
Comments	sq. m	0.00	54.80	2.00	2.00	V Severe	9	
Settlement at both app	aroacnes. Wide	uansverse crack						
Performance Deficier	ncies	Maintenand	ce Needs		Priority	Comments		
Rough riding surface								
		Daio aite -	Cos	t Commen	te			
Rehab/Repair Recom	mendations	Priority 1-5 yrs	\$5,0		nd seal crac	ks		
Barriers - Posts			120	a With as		Star Salar		I HEKL
Element Group	Barriers				1	Length	0.00 Width	0.15
Element Name	Posts					Height	0.65 Count	19.00
Location	On Approaches				, Ber	Total Quantity	19.00	
Material	Timber					Limite	d Inspection	
Element Type						Environment		
Protection System	(🗌 Benigi	ı	
Condition Data	Units E	xcell. Go	bod	Fair	Poor	Moder	ate	
	Each	0.00	4.00	10.00	5.00	Sever	e	
Comments Light to severe rot, light	ht to medium ch	ecking and splits	s. Posts do	not meet cur	rent standar	d. Replaceme	nt costed under guid	lerail.
Performance Deficie		Maintenan				Comments		
None								
			_		4-			
Rehab/Repair Recom	mendations	Priority	Cos	t Commen	ts			

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Structure	Number:	Jec
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Coatings - Railin	g Systems/Ha	nd Railings	and states in the				
Element Group	Coatings			Length	0.00 Width	0.00	
Element Name	Railing Systems	/Hand Railings		Height	0.00 Count	0.00	
Location	Approach Guide	erail			Total Quantity	22.80	
Material	Epoxy Zinc/Acry	lic		Limite	d Inspection		
Element Type				Environm	ent		
Protection System				🔲 Benign			
Condition Data	Units Exc	ell. Good Fa	air Poor	Moderate			
	m	0.00 22.80	0.00 0.00	Severe	e		
Comments Minor breakdown of pro	otective coating.						
Performance Deficien	icies	Maintenance Needs	Priority	Comments			
None							
Rehab/Repair Recom	mendations	Priority Cost	Comments				
Renabilitépan Récom		, , , , , , , , , , , , , , , , , , , ,					
Sidewalks/curbs	- Curbs		· 如何是 和 · · · · ·	i intra			
Element Group	Sidewalks/curb	s		Length	9.10 Width	0.15	
Element Name	Curbs			Height	0.10 Count	2.00	
Location					Total Quantity	4.55	
Material				🗌 Limite	d Inspection	_	
Element Type	l			Environm	ent		
Protection System				🔲 Benig	n		
Condition Data	Units Ex	cell. Good F	air Poor	Mode	rate		
	m	0.00 1.55	2.00 1.00	Sever	e		
Comments		ad and unstained cracks					
Light scaling, light spalling, narrow stained and unstained cracks.							
Performance Deficier	ncies	Maintenance Needs	Priority	Comments			
None							
Rohah/Ponair Pocom	Rehab/Repair Recommendations Priority Cost Comments						
Rehab		1-5 yrs \$5,000		pair			

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Retaining walls -	Walls					- 1. A.					
Element Group	Retaining walls			Length	2.00 Width	0.30					
Element Name	Walls		Height	1.20 Count	1.00						
Location	Northeast Quad	ant			Total Quantity	2.40					
Material	Cast-in-place co	ncrete		Limited	Inspection						
Element Type			Environment								
Protection System			🔲 Benign								
Condition Data	Units Exc	Units Excell. Good Fair Poor			✓ Moderate						
Commonte	sq. m	sq. m 0.00 1.40 1.00 0.00			Severe						
Comments Minor outward rotation, hairline stained map cracking.											
		Malada ang Norda	Priority	Comments							
Performance Deficien	CIES	Maintenance Needs	Fliolity	ovininento							
None											
Rehab/Repair Recom	mendations	Priority Cost	Comments								
Piers - Shafts/Co	lumns/Pile Be	nts				303 - Sec.					
Element Group	Piers			Length	6.10 Width	0.45					
Element Name	Shafts/Columns	/Pile Bents	Height	2.70 Count	1.00						
Location	Below Deck		-	Total Quantity	35.37						
Material	Cast-in-place co	ncrete	L Limited	Inspection							
Element Type	Concrete rectar	gular columns and shafts	Environme	ənt							
Protection System			🗹 Benign								
Condition Data	Units Exc			Moderate							
Comments	sq. m	0.00 21.37	9.00 5.00	Severe							
Light to severe scaling, narrow to wide cracks, concrete patches, debonded concrete patches, narrow stained cracks, delaminations.											
Performance Deficier	ncies	Maintenance Needs	Priority	Comments							
None											
Rehab/Repair Recom	mendations	Priority Cost	Comments								
Rehab		1-5 yrs \$10,000	Patch repairs and o	crack injections	3						

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Municipal Structure Inspection Form

Structure Number: Jedburgh Dam Bridge

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Barriers - Railing	Systems	N. 1 862.	1. 1. N. I.				1000	122.0			
Element Group	Barriers					Length	8.80	Width	0.05		
Element Name	Railing System	Railing Systems					0.90	Count	2.00		
Location	East and West	East and West Sides						uantity	61.80		
Material	Steel					Limited Inspection					
Element Type	3 Rail Metal Railing - Steel					Environment					
Protection System	None					E Benign					
Condition Data	Units Excell. Good Fair Poor					Moderate					
Comments	m	0.00	0.00	60.80	1.00	🖌 Sever	e				
3 rails and 5 posts for each railing. Rails are 50mm. Broken handrail post in northwest.											
Performance Deficien	cies	Maintenance	Needs		Priority	Comments					
None											
Pohoh/Ponois Poor	mondations	Priority	Cost	Comment	s						
Rehab/Repair Recom	menuations	1-5 yrs	\$4,000			s with approa	ch guiderai	il			
Coatings - Railin	a Systems/H			111115-13							
Element Group	Coatings					Length	0.00	Width	0.00		
Element Name	Railing Systems/Hand Railings					Height	0.00	Count	0.00		
Location	Railing System					1	Total C	Quantity	9.70		
Material	Other					Limited Inspection					
Element Type							Environment				
Protection System	Other					Benign					
Condition Data	<u></u>						erate				
	m		0.00	6.70	3.00	Seve	re				
Comments	akdown of protect	tive coating									
Medium to severe breakdown of protective coating.											
Performance Deficient	ncies	Maintenance	e Needs		Priority	Comments					
None											
Rehab/Repair Recom	mendations	Priority	Cost	Соттеп	ts						

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Decks - Deck Top)							
Element Group	Decks				Length	8.00 Width	5.20	
Element Name	Deck Top				Height	0.00 Count	1.00	
Location	Below Wearing	Surface				Total Quantity	41.60	
Material	Cast-in-place c	oncrete			✓ Limited	Inspection		
Element Type					Environme	nt		
Protection System	Other				🗌 Benign			
Condition Data	Units Ex	cell. Good	Fair	Poor	Moderat	ie		
Comments	sq. m	0.00 37.60	3.00	1.00	Severe Severe			
Performance Deficien None Rehab/Repair Recom		Maintenance Neo Priority	eds Cost Commen		Comments			
Decks - Soffit - T	hick Slab	Second Second Second		S store	Service Sur	1. S. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Service Services	
Element Group	Decks				Length	8.00 Width	3.20	
Element Name	Soffit - Thick S	lab	Exterior		Height	0.00 Count	0.00	
Location	Underside of D	eck				Total Quantity	25.60	
Material	Cast-in-place c	oncrete			Limited Inspection			
Element Type					Environme	nt		
Protection System					🗌 Benign			
Condition Data	Units Ex	cell. Good	Fair	Poor	Modera	te		
Comments	sq. m	0.00 20.60	4.00	1.00	Severe Severe			
Comments Light to severe scaling, narrow stained cracks, spalling, concrete patches, efflorescence, stalactites, delaminations, concrete patches, wet areas.								
Performance Deficier	icies	Maintenance Ne	eds	Priority	Comments			
None								
Rehab/Repair Recom	mendations	Priority	Cost Commen	ts				
Rehab		1-5 yrs	\$5,000 Patch	repairs				

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Approaches - Ap	proach Guide	erail		State pro-		
Element Group	Approaches			Length	0.00 Wi	dth 0.00
Element Name	Approach Guid	erail Term	nal End	Height	0.00 Co	unt 4.00
Location	All Quadrants				Total Quan	tity 4.00
Material	Steel			Limite	d Inspection	
Element Type				Environm	ent	
Protection System	Hot dip galvani	zing		🔲 Benigr	ı	
Condition Data	Units Exe	cell. Good F	air Poor	Moder	ate	
Comments	Each	0.00 4.00	0.00 0.00	Severe Severe	è	
		s, minor collision damage in			າເຮ.	
Performance Deficie	ncies	Maintenance Needs	Priority	Comments		
None Rehab/Repair Recom	mendations	Priority Cost	Comments			
Decks - Soffit - T	hick Slab	Wile Styles of the Styles				
Element Group	Decks			Length	6.50 Wi	dth 3.20
Element Name	Soffit - Thick S	ab Interi	or	Height	0.40 Co	
Location	Underside of D	eck			Total Quan	tity 29.10
Material	Cast-in-place c	oncrete	1	Limite	d Inspection	
Element Type				Environm	ent	
Protection System	None			🗹 Benigi	n	
Condition Data	Units Ex	cell. Good F	air Poor	🔲 Moder	ate	
Comments	sq. m	0.00 18.10	7.00 4.00	Sever	e	
	e cracks, light to se	evere scaling, wet areas, nar	row stained cracks, ef	florescence.		
Performance Deficie	ncies	Maintenance Needs	Priority	Comments		
None						
	Rehab/Repair Recommendations Priority Cost Comments					
Rehab		1-5 yrs \$10,000) Concrete patches			

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Decks - Wearing	Surface								- <u> </u>
Element Group	Decks					Length	8.00	Width	4.90
Element Name	Wearing Su	rface				Height	0.00	Count	1.00
Location	Top of Deck	ζ					Total C	uantity	39.20
Material	Asphalt					🔲 Limit	ed Inspect	ion	
Element Type						Environr	nent		
Protection System	None					🔲 Benig	ŋn		
Condition Data	Units	Excell.	Good	Fair	Poor	🗌 Mode	erate		
Comments	sq. m	0.00	27.20	7.00	5.00	🖌 Seve	re		
Light to severe ravellir	ng, minor poth	oles, narrow	/ to wide cracks	s, localized map	o cracking, ti	usning,			
Performance Deficier	ncies	Main	tenance Need	S	Priority	Comments			_
None		Bridg	e Surface Repa	air	1 yr	Patch potho	bles		
Rehab/Repair Recom	mendations	Pr	iority C	ost Comme	nts				
Rehab		1-5	5yrs \$	5,000 Seal o	racks		_		_
Embankments &	Streams -	Embank	ments				特别改革		101-01
Element Group	Embankme	nts & Strea	ms			Length	0.00		0.00
Element Name	Embankme	nts				Height	0.00		4.00
Location	All Quadrar	nts						Quantity	4.00
Material	Other					Li Limit	ted Inspect	tion	
Element Type						Environ	ment		
Protection System	None					🔲 Beni	gn		
Condition Data	Units	Excell.	Good	Fair	Poor	Mod 🔝	erate		
Comments	Each	0.00	4.00	0.00	0.00	E Seve	ere		
GRCA gauge station	located at sout	theast emba	ankment.						
Performance Deficie	ncies	Mair	ntenance Need	ls	Priority	Comments			

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Municipal	Structure	Inspection Form	
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Structure	Number:	Jedbu
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edburgh Dam Bridge

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0.00	
0.00 Width	0.00
0.00 Count	4.00
otal Quantity	4.00
pection	
	11.04 24-2-
0.00 Width	0.00
speedon	
	otal Quantity spection

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Municipal	Structure	Inspection	Form
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Jedburgh Dam Bridge

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Foundations - F	oundations (b	elow ground leve	1)	SI 12 81.	11-28-3		144	
Element Group	Foundations					0.00	Width	0.00
Element Name	Foundations (b	elow ground level)			Height	0.00	Count	0.00
Location	At Abutments/F	liers				Total Q	Quantity	0.00
Material					🗹 Limite	ed Inspecti	ion	
Element Type					Environm	ient		
Protection System					🔳 Benig	n		
Condition Data	Units Ex	cell. Good	Fair	Poor	🔳 Mode	rate		
Comments	N/A				Sever	e		
Limited inspection.								
Performance Deficie	ncies	Maintenance Needs	3	Priority	Comments			
None								
Rehab/Repair Recon	nmendations	Priority Co	ost Comm	ents				

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Municipal Structure Inspection Form

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Structure Number: Jedburgh Dam Bridge

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Element Group	Element		Repair/Rehabilitation	Priority	Cost
Abutments	Abutment Walls		Rehab	1-5 yrs	\$20,000
Approaches	Approach Guiderail		Rehab	1-5 yrs	\$70,000
Sidewalks/curbs	Curbs		Rehab	1-5 yrs	\$5,000
Barriers	Railing Systems		Rehab	1-5 yrs	\$4,000
Piers	Shafts/Columns/Pile Bents		Rehab	1-5 yrs	\$10,000
Decks	Soffit - Thick Slab	Interior	Rehab	1-5 yrs	\$10,000
Decks	Soffit - Thick Slab	Exterior	Rehab	1-5 yrs	\$5,000
Decks	Wearing Surface		Rehab	1-5 yrs	\$5,000
Approaches	Wearing Surface		Rehab	1-5 yrs	\$5,000
Abutments	Wingwalls		Rehab	1-5 yrs	\$5,000
			Total Rep	air/Rehabilitation Cost	\$139,000

	Comments			E	stimated Cost
Approaches					\$0
Detours				[\$0
Traffic Control					\$10,000
Utilities					\$0
Right-of-Way					\$0
Environmental Study					\$0
Other	Mobilization/Bonds/Unwatering				\$22,000
Contingencies		1	0%	#*	\$18,000
Engineering		2	0%	**	\$35,000
** If based on a percenta	ge calculated values rounded-up to the	Total Associated Work C	Cost		\$85,000
nearest thousand dollars		Total Repair/Rehabilitation Cost			\$139,000
		Total	Cost		\$224,000
		Township of North Dumfries Share @ 10	0%		\$224,000

Structure Number: Jedburgh Dam Bridge



Looking North at Bridge



Looking South at Bridge

Structure Number: Jedburgh Dam Bridge



West Elevation



Flaking of Protective Coating on Handrail



Broken Handrail in Northwest



Light Spall on Curb



Minor Potholes on Deck Wearing Surface



Severe Delamination on Interior Soffit

Structure Number: Jedburgh Dam Bridge



Light Spall on Exterior Soffit



Typical Pier



Severe Delamination on Pier



Light Corrosion on Splash Guard

Structure Number: Jedburgh Dam Bridge



North Abutment



South Abutment



Severe Delamination on Abutment



Debonded Concrete Patch on Wingwall



Typical Retaining Wall



Minor Outward Rotation of Retaining Wall

Structure Number: Jedburgh Dam Bridge



Looking East Upstream



Looking West Downstream



Wide Crack in Approach Wearing Surface



Settlement on Approach



Typical Load Posting Sign on Approach



Guiderail Not Attached to Post



Severe Rot on Approach Guiderail Post

Summary Action Report Structure Piper Street Bridge (MTO Site No. Piper Street Bridge) Piper Street Bridge

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Inspection Date	10/12/2016	mm/dd/yyyy	,		Condition Index Valu	ie (BCI)	67.87
Next Biennial Inspection	10/12/2018	mm/dd/yyyy	,		Current Rep. Value \$4,08		086,522
Additional Investigations							
Investigation		Priority	Cost	Investigation	Pr	iority	Cost
Detailed Deck Condition Surv	ey	Normal	\$15,000				
Additional investigations requ	ired see page 3	3 for details.					

Performance D	eficiencies							
Element Group	Element	Performance Deficiency						
Barriers								
Sidewalks/curbs	Sidewalks/Medians	Pedestrian/vehicular hazard						
Maintenance N	eeds							
Element Group	Element	Maintenance Required	Priority	Comment				
Accessories	Utilities	Other	1 yr	Replace junction box cover plates				
Barriers	Hand Railings	Bridge Handrail Maintenance	1 yr	Reposition/secure handrail				
Barriers	Railing Systems	Bridge Handrail Maintenance	1 yr	Replace deteriorated panels				

Repair/Rehabilitation

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Element Group	Element		Repair/Reha	bilitation	Priority	Cost
Accessories	Utilities	Conduit	Rehab	Replace corroded section of conduit	1-5 yrs	\$5,000
Approaches	Wearing Surface		Rehab	Rout and seal cracks	1-5 угѕ	\$5,000
Barriers	Posts		Rehab	Should replace/upgrade approach guiderail	1-5 yrs	\$70,000
Beams/MLE's	Girders	End	Rehab	Patch repairs and seal wide crack	1-5 yrs	\$30,000
Beams/MLE's	Girders	Middle	Rehab	Patch repairs	1-5 yrs	\$5,000
Decks	Wearing Surface		Rehab	Seal cracks	1-5 yrs	\$5,000
Decks	Soffit - Thick Slab	Exterior	Rehab	Concrete patch repair	1-5 yrs	\$5,000
Joints	Seals/Sealants		Replace	Replace joint seals	1-5 yrs	\$41,000
Joints	Seals/Sealants		Replace	Replace joint seals	1-5 yrs	\$41,000
Piers	Shafts/Columns/Pile Bents		Rehab	Patch repair	1-5 yrs	\$10,000
Sidewalks/curbs	Curbs		Rehab	Patch repairs	1-5 yrs	\$5,000
Sidewalks/curbs	Sidewalks/Medians		Rehab	Repair sidewalk	1-5 yrs	\$10,000
				Total Repair/Rehabilitation	Cost	\$232,000
Township of Nort	h Dumfries 10	0%\$	348,000.00	Total Associated W	ork Cost	\$116,000
		%		1	otal Cost	\$348.000

Overall Comments

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Replace utility conduit in curb. Rout and seal cracks in asphalt. Concrete patch repairs to girders, exterior soffit, piers and sidewalk. Replace seals at abutments and over piers. Should replace/upgrade guide rail.

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Structure Number:

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Piper Street Bridge

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Inventory Data									
Structure Name	Piper Street Bridge			Hwy No.	Piper St Key	Photo			
Cross. Type Over	Road Rail								
Cross. Type Under	🖌 Road 🔲 Rail	🗌 Ped 🔲 Nav	.Water	Non-Nav. Wat] Other		ton the second		
Road Name	Piper Street					A 124			
Structure Location	Approximately 100m West of Northumberland Street								
Latitude	43.28423 Longitude -80.46260 Cur. Rep.Value \$4,086,522								
Owner(s)/	Township of North D	umfries	100 %		**		4		
% Share			%	Heritage Status	Not Considered	d for Designation	n		
MTO Region	Southwestern			Road Side Env.	Urban				
MTO District	London/Stratford			Road Class	Local				
Old County	Waterloo			Lane Type	Regular				
Geographic Twp.	North Dumfries		-	Posted Speed	50	No. of Lanes	2		
Structure Type	Box Beams or Girders			AADT	0	Pct. Trucks	0		
Structure Material	Reinforced Cast-in-F	Place Concrete		Inspection Route Sequence					
Articulation	Simply Supported		1	Interchange Num	nterchange Number				
Total Deck Length	60 m R	load Width	9.2	Interchange Structure Number					
Overall Width	11.8 m V	ert. Clear.	0	Detour Length	0 km	Skew Angle	0 °		
Total Deck Area	708.00 m ² N	lo. of Spans	3	Fill on Structure	0 m	Struct. Dir.	East/West		
Special Routes	Transit 🖌 Schoo	ol 🔲 Truck 🗌	Bicycle	Insp. Duration	1 hr				
Spans	** Current Replacement	Value is based on in Manning should consi	kind replace der site spec	ement of the existing st cific cost factors and re	tructure and calcul quirements for wid	ated using benchm lening or lengtheni	nark costs. Capital ng of the structure.		
Span Name		Span Length	Span Nan	ne	S	Span Length			
1		20.1 m	2			19.8 m			
3		20.1 m							
Historical Data						in a val ¹¹ a			
Year Built	1967	уууу	Year of I	.ast Major Rehab		уууу	~		
Last OSIM Inspectio	on 06/04/2013	mm/dd/yyyy	Contract	No. When Built					
Last Enhanced OSI	N	mm/dd/yyyy	Last Eva	aluation		mm/dd/yyyy			
Last Enhanced Acc	ess	mm/dd/yyyy	Current	Load Limit	t]t 🔄 t			
Last Underwater Ins	sp.	mm/dd/yyyy	Load Lii	nit By-Law No.		mm/dd/yyyy			
Last Condition Surv	rey	mm/dd/yyyy	By-Law	Expiry Date		mm/dd/yyyy			

Rehab History

Township of North Dumfries **Piper Street Bridge Structure Number: Municipal Structure Inspection Form Field Inspection Information:** BCI 67.87 OSIM Enhanced OSIM 10/12/2016 mm/dd/yyyy Dulti Day Inspection **Inspection Date** D. L. Baxter, P. Eng. Eng. Responsible D. L. Baxter, P. Eng. Inspector J. Parkinson Others in Party C. Harper

Boat

Bridge Master

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Access Equip.

Other Equip.

Weather

Lift

Sunny

Ladder Camera, Hammer, Other Hand Tools

Temperature

18 °C

Other

Additional Investigations Required:					
Investigation	None	Priority Normal	Urgent		Estimated Cost
Detailed Deck Condition Survey		\checkmark			\$15,000
Delamination Survey of Asphalt-Covered Deck					\$0
Concrete Substructure Condition Survey	調整				\$0
Detailed Coating Condition Survey					\$0
Detailed Timber Investigation	6 00	Ini			\$0
Post-Tensioned Strand Investigation					\$0
Underwater Investigation	101				\$0
Fatigue Investigation	B EEL				\$0
Seismic Investigation			116		\$0
Structure Evaluation	100 C	100			\$0
Monitoring of Deformations, Movements and Settlements					\$0
Monitoring of Crack Widths	111				\$0
Investigation Notes				Total Cost	\$15,000
A detailed condition survey will confirm the presence of a concrete to	opping and w	ill confirm rel	nabilitation.		

Overall Structure Notes: Replace Remove Rehab None **Recommended Work on Structure** None Now 1 to 5 years 6 to 10 years Timing of Recommended Work Replace utility conduit in curb. Rout and seal cracks in asphalt. Concrete patch repairs to girders, exterior soffit, piers Overall and sidewalk. Replace seals at abutments and over piers. Should replace/upgrade guide rail. Comments **BCI Change** Justification 10/12/2018 mm/dd/yyyy Estimated Load Limit t t t Next Inspection

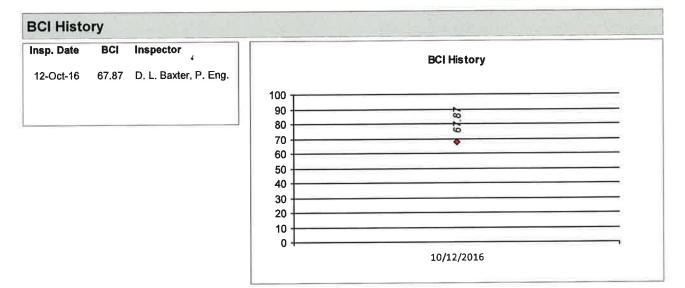
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Municipal Structure Inspection Form

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All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

Standard Codes

Suspected Performance Deficiencies

- 00 None
- 01 Load carrying capacity
- 02 Excessive deformations (deflections/rotations)
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

- 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

06 Bearing not uniformly loaded/unstable

Repair to Structural Steel

Repair of Bridge Concrete

Bailey Bridges - Maintenance

Repair of Bridge Timber

Animal/Pest Control

Bridge Surface Repair

- 07 Jammed expansion joint 08 Pedestrian/vehicular hazard
- 09 Rough riding surface
- 10 Surface ponding
- 11 Deck drainage

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09

10

11

12

16 Other

12

13

14

15

13 Erosion Control at Bridges

Slippery surfaces

Flooding/channel blockage

Undermining of foundation

Unstable embankments

- 14 Concrete Sealing
- 15 Rout and Seal
- 16 Bridge deck Drainage
- 17 Scaling (Loose Concrete or ACR Steel)
- 18 Other

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Municipal S	tructure	Inspection	Form
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Structure Number:

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Piper Street Bridge

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Abutments - Abu	Itment Walls			<u> 180 - 180 - 1</u>			<u>in (6405-56)</u>	1000
Element Group	Abutments				Length	0.00	Width	11.00
lement Name	Abutment Walls	3			Height	3.40	Count	2.00
ocation	East and West	Sides				Total (Quantity	74.80
aterial	Cast-in-place c	oncrete		Limited Inspection				
lement Type	Conventional C	losed		Environm	ent			
rotection System	None			Benign				
ondition Data	Units Exc	cell. Good	🖌 Moder	ate				
comments	sq. m	0.00 66.80	8.00	0.00	Sever	е		
lairline to narrow crac	ks at both abutme	ents, wet areas, water stair	ning, rust stair	ning.				
Performance Deficier	ncies	Maintenance Needs		Priority	Comments			
None								
Rehab/Repair Recom	mendations	Priority Cost	Comments	5				
ehab/Repair Recom	mendations	Priority Cost	Comments	5				
		Priority Cost	Comments	8		-10		
butments - Bea		Priority Cost	Comments		Length [0.00		
butments - Bea lement Group	arings	Priority Cost	Comments		Length [Height [) Width) Count	2.0
butments - Bea lement Group lement Name	Abutments	Priority Cost	Comments	5	Height [0.00 Total) Count Quantity	2.0
Abutments - Bea Ilement Group Ilement Name	Abutments Bearings	Priority Cost	Comments	5	Height [0.00) Count Quantity	2.0
Abutments - Bea Iement Group Iement Name Location Naterial	Abutments Bearings	Priority Cost	Comments	5	Height [0.00 Total ed Inspec) Count Quantity	2.0
Abutments - Bea Element Group Element Name Location Material Element Type	Abutments Bearings	Priority Cost	Comments		Height	0.00 Total ed Inspec nent) Count Quantity	2.0
Abutments - Bea Element Group Element Name Location Material Element Type Protection System	Abutments Bearings At Abutments None	Priority Cost	Comments	Poor	Height	0.00 Total ed Inspec nent) Count Quantity	2.0
Abutments - Bea Element Group Element Name Location Material Element Type Protection System Condition Data	Abutments Bearings At Abutments None				Height	0.00 Total ed Inspec nent n rate) Count Quantity	0.00
Abutments - Bea Element Group Element Name Location Material Element Type Protection System Condition Data Comments	Abutments Abutments At Abutments None Units Ex Each	cell. Good 0.00 2.00	Fair	Poor	Height	0.00 Total ed Inspec nent n rate) Count Quantity	2.0
Rehab/Repair Recom Abutments - Bea Element Group Element Name Location Material Element Type Protection System Condition Data Comments Bearings not visible. A	Abutments Abutments At Abutments None Units Ex Each	cell. Good 0.00 2.00 fair condition.	Fair	Poor 0.00	Height	0.00 Total ed Inspec nent n rate) Count Quantity	2.0
Abutments - Bea Element Group Element Name Location Material Element Type Protection System Condition Data Comments Bearings not visible. A	Abutments Abutments Bearings At Abutments None Units Ex Each Assumed to be in the second	cell. Good 0.00 2.00	Fair	Poor 0.00	Height	0.00 Total ed Inspec nent n rate) Count Quantity	2.0
Abutments - Bea Element Group Element Name Location Material Element Type Protection System Condition Data Comments Bearings not visible. A	Abutments Abutments Bearings At Abutments None Units Ex Each Assumed to be in the second	cell. Good 0.00 2.00 fair condition.	Fair	Poor 0.00	Height	0.00 Total ed Inspec nent n rate) Count Quantity	2.0
Abutments - Bea Element Group Element Name Location Material Element Type Protection System Condition Data Comments Bearings not visible. A	Abutments Abutments Bearings At Abutments At Abutments None Units Ex Each Assumed to be in the second secon	cell. Good 0.00 2.00 fair condition.	<i>Fair</i> 0.00	Poor 0.00 Priority	Height	0.00 Total ed Inspec nent n rate) Count Quantity	2.0

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Municipal Structure Inspection Form

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Structure Number:

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Piper Street Bridge

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Abutments - Win	gwalls					Starte.	Sec. 1	1. 2. 3. 2.
Element Group	Abutments				Length	3.50	Width	0.00
Element Name	Wingwalls]	Height	1.25	Count	3.00
Location	Northeast, Nort	hwest & Southwest			_		uantity	13.13
Material	Cast-in-place c	oncrete		Limite	d Inspecti	on		
Element Type	Reinforced con	crete		Environment				
Protection System	None				🔲 Benigr	ו		
Condition Data	Units Ex	cell. Good	Fair P	oor	Moder 🖌	ate		
Comments	sq. m	0.00 13.13	0.00	0.00	Severe	e		
Performance Deficier None	ncies	Maintenance Needs	F	Priority	Comments			
Rehab/Repair Recom	mendations	Priority Cos	st Comments					
Approaches - Ap	proach Slabs		, 변경 공격 및					1.1
Element Group	Approaches				Length	6.00	Width	9.20
Element Name	Approach Slab	s			Height	0.00	Count	2.00
Location	East and West	Sides				Total C	Quantity	110.40
Material	Cast-in-place of	oncrete			Limite	d Inspect	ion	
Element Type					Environment			
Protection System	Hot rubberized	asphalt membrane			🔲 Benig	n		
Condition Data	Units Ex	cell. Good	Fair F	Poor	Moder	rate		
Comments	sq. m	0.00 108.40	2.00	0.00	Sever Sever	e		
Performance Deficie None Rehab/Repair Recor		Maintenance Needs Priority Co		Priority	Comments			

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Municipal Structure Inspection Form

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Structure Number:

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Piper Street Bridge

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Abutments - Win	gwalls	Soft Electricity	에는 것이 안전 의명한 것이 이 것이라. 같아?			
Element Group	Abutments		Length 8.00 Width 0.30			
Element Name	Wingwalls		Height 2.50 Count 1.00			
Location	Southeast Quadrant		Total Quantity 20.00			
Material	Cast-in-place concrete		Limited Inspection			
Element Type	Reinforced concrete		Environment			
Protection System			🔲 Benign			
Condition Data	Units Excell. Good Fair	Poor	Moderate			
Comments	sq. m 0.00 19.00 1.00	Severe				
Narrow stained crack,	light to medium scaling and rust staining.					
Performance Deficier	Maintenance Needs	Priority	Comments			
None						
Rehab/Repair Recom	mendations Priority Cost Commo	ents				
Accessories - Ut	ilities					
Element Group	Accessories		Length 0.00 Width 0.00			
Element Name	Utilities		Height 0.00 Count 2.00			
Location	Inside North Curb		Total Quantity 2.00			
Material			Limited Inspection			
Element Type			Environment			
Protection System			🔲 Benign			
Condition Data	Units Excell. Good Fair	Poor	Moderate			
Comments	Each 0.00 1.00 0.00	1.00	Severe			
Severe corrosion of north conduit. Performance Deficiencies Maintenance Needs Priority Comments None Priority Cost Comments Rehab/Repair Recommendations Priority Cost Comments Rehab 1-5 yrs \$5,000 Replace corroded section of conduit						

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Municipal Structure Inspec	tion Form
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Accessories - Utili Element Group									
	Accessories					Length	0.00	Width	0.00
	Utilities		N			Height	0.00	Count	6.00
Location	North Exterior S	Soffit					Total Q	uantity	6.00
Material						Limited Inspection			
Element Type						Environment			
Protection System						✓ Benign			
-	Units Excell. Good Fair Poor				Moder	rate			
Comments	Each 0.00 2.00 4.00 0.00					Sever	e		
Conduits on exterior soff									
Performance Deficienci	ies	Maintena	ance Needs		Priority	Comments			
None									
Rehab/Repair Recomm	endations	Priorit	y Co	ost Comme	nts				
Accessories - Utili	ties		1				24.12	机成合	
Element Group	Accessories					Length	0.00	Width	0.00
Element Name	Utilities			Light Poles		Height	0.00	Count	3.00
Location [South Side of E	Bridge					Total C	uantity	3.00
Material]	🗌 Limite	ed Inspect	ion	
Element Type						Environm	nent		
Protection System						🔲 Benig	n		
Condition Data	Units Exc	cell.	Good	Fair	Poor	🗹 Mode	rate		
Comments	Each	0.00	3.00	0.00	0.00) Severe			
Performance Deficienc	ies	Mainten	ance Needs	ŝ	Priority	Comments			
		1							
None									

Township of North Dumfries **Piper Street Bridge Municipal Structure Inspection Form Structure Number:** Accessories - Utilities 0.00 Width 0.00 Length Accessories **Element Group** 3.00 0.00 Count Height Utilities **Element Name** 3.00 **Total Quantity** South Curb Location Limited Inspection Material Environment **Element Type** Benign **Protection System** Moderate Units Excell. Good Fair Poor **Condition Data** 0.00 0.00 0.00 3.00 Each Severe Comments Junction box cover plates are missing. Junction boxes filled with asphalt. Priority Comments Performance Deficiencies **Maintenance Needs** Replace junction box cover plates 1 yr Other None Priority Cost Comments **Rehab/Repair Recommendations** Approaches - Approach Guiderail 0.08 26.67 Width Length **Element Group** Approaches 1.00 Height 0.52 Count Element Name Approach Guiderail **Total Quantity** 26.67 Southwest Approach Location Limited Inspection Material Steel Environment Steel Beam on Wood Posts **Element Type** Benign Hot dip galvanizing **Protection System** Moderate Units Excell. Good Fair Poor **Condition Data** 0.00 0.00 0.00 26.67 Severe m Comments Light corrosion. Priority Comments **Maintenance Needs Performance Deficiencies** None Priority Cost Comments **Rehab/Repair Recommendations**

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Municipal Structure Inspection Form

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Structure Number:

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Piper Street Bridge

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Approaches - We	earing Surfac	e		See Service			N UL SA	water	I Maket
Element Group	Approaches					Length	6.00	Width	9.20
Element Name	Wearing Surface	e][Height	0.00	Count	2.00
Location	East and West	Sides					Total Qu	antity [110.40
Material	Asphalt	Asphalt					d Inspectio	on	
Element Type							Environment		
Protection System	None					Benign			
Condition Data	Units Ex	cell. G	ood	Fair	Poor	Moderate			
Comments	sq. m	sq. m 0.00 104.40 4.00 2.00			2.00	Sever Sever	e		
Medium to wide transv	verse cracks in as	phalt at west	approach at	end of deck	Narrow trans	sverse crack a	at east appro	oach.	
Performance Deficier	Performance Deficiencies Maintenance Needs Priority								
None									
			•		- 4 -				
Rehab/Repair Recom	mendations	Priority 1-5 yrs	Cos \$5,0		and seal crac	ks			
Barriers - Posts		1-5 913	ψ0,0					1. A.	
Element Group	Barriers	in de altre		3-1-1-1-1-		Length	0.00	Width	0.15
Element Name	Posts					Height	0.65	Count	8.00
Location	Southwest Apr	roach					Total Q		8.00
Material	Timber					Limited Inspection			
Element Type						Environm			
Protection System						Benig			
Condition Data	Units Ex	cell. G	lood	Fair	Poor	Mode			
Condition Data	Each	0.00	8.00	0.00	0.00	Sever			
Comments Light checks and split standard.	s, light to modera	te weathering	. Intermedia	te guiderail p	osts are not			sts do not	meet
Performance Deficie	ncies	Maintena	nce Needs		Priority	Comments			
Load carrying capacit	iy								
		Duin -it			-				
Rehab/Repair Recorr Rehab	mendations	Priority 1-5 yrs	Cos \$70,0			grade approad	h quiderail		

Township of North Dumfries **Structure Number: Piper Street Bridge Municipal Structure Inspection Form Coatings - Structural Steel** 0.00 Width 0.00 Length Coatings **Element Group** 0.00 Count 0.00 Height Structural Steel **Element Name Total Quantity** 16.00 Approach Guiderail Location Limited Inspection Hot Dip Galvanizing Material Environment Element Type Benign **Protection System** Moderate Fair Poor **Condition Data** Units Excell. Good 1.00 0.00 15.00 0.00 Severe m Comments Breakdown of protective coating. Comments Priority **Performance Deficiencies** Maintenance Needs None Cost Comments **Rehab/Repair Recommendations** Priority Approaches - Approach Guiderail 0.00 0.00 Width Length Approaches **Element Group** 1.00 0.00 Count **Terminal End** Height **Element Name** Approach Guiderail 1.00 **Total Quantity** Southwest Quadrant Location Limited Inspection Steel Material Environment Element Type Benign **Protection System** Hot dip galvanizing Moderate Poor **Condition Data** Units Excell. Good Fair 0.00 0.00 1.00 0.00 Severe Each Comments Priority Comments **Performance Deficiencies Maintenance Needs** None Comments **Rehab/Repair Recommendations** Priority Cost

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Municipal Structure Inspection Form

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Structure Number:

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Piper Street Bridge

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Barriers - Barrier	/Parapet Wall	S						
Element Group	Barriers				Length 67.20 Width 0.00			
Element Name	Barrier/Parapet	Walls	Interior		Height 0.85 Count 2.00			
Location	North and South	Sides			Total Quantity 114.24			
Material	Cast-in-place co	oncrete			Limited Inspection			
Element Type	Parapet Wall wi	th Two Rails			Environment			
Protection System	None				Benign			
Condition Data	Units Exc	ell. Good	Moderate					
Comments	sq. m	0.00 113.24	Severe					
Light scaling, narrow cracks, minor abrasions, narrow stained crack in southeast.								
Performance Deficien	ncies	Priority	Comments					
None								
Rehab/Repair Recom	mendations	Priority	Cost Commen	's				
Barriers - Hand I	Railings							
Element Group	Barriers				Length 66.00 Width 0.00			
Element Name	Hand Railings				Height 0.00 Count 4.00			
Location	North and Sout	n Sides			Total Quantity 264.00			
Material	Steel				Limited Inspection			
Element Type	Double Railing)	Environment			
Protection System	Hot dip galvaniz	zing			Benign			
Condition Data	Units Exc	cell. Good	Fair	Poor	Moderate			
Comments	m	0.00 263.00	1.00	0.00	Severe			
	st anchor bolts at	multiple locations. L	ight surface corros	ion on anch	or bolts. Travelling of the rails, minor			
Performance Deficie	ncies	Maintenance Ne	eds	Priority	Comments			
None		Bridge Handrail N	1aintenance	1 yr	Reposition/secure handrail			
Rehab/Repair Recom	nmendations	Priority	Cost Commen	ts				

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Municipal Structure Inspection Form

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Structure Number:

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Piper Street Bridge

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Barriers - Railing	Systems		16 - 21 Mar 3	1.000			
Element Group	Barriers				Length 60.00 Width 0.04		
Element Name	Railing Systems			Height 0.91 Count 1.00			
Location	South Side				Total Quantity 60.00		
Material	Steel				Limited Inspection		
Element Type	Splash Guard F	Railing			Environment		
Protection System	Hot dip galvaniz	zing			Benign		
Condition Data	Units Exc	cell. Good	Fair	Poor	Moderate		
Comments	m	0.00 55.00	4.00	1.00	Severe		
Localized areas of light to severe corrosion with pitting and perforations. Light corrosion on anchor bolts.							
Performance Deficien	cies	Maintenance Ne	eds	Priority	Comments		
None		Bridge Handrail N	laintenance	1 yr	Replace deteriorated panels		
Rehab/Repair Recommendations Priority Cost Comments							
Barriers - Barrier	/Parapet Wal	s			지수가 많이 많은 것을 가려 가지 않는 것을 했다.		
Element Group	Barriers				Length 67.20 Width 0.00		
Element Name	Barrier/Parapet Walls Exterior			Height 0.60 Count 2.00			
Location	North and South Sides				Total Quantity 80.64		
Material	Cast-in-place concrete			Limited Inspection			
Element Type	Parapet Wall with Two Rails				Environment		
Protection System					Benign		
Condition Data	Units Excell. Good Fair Poor		Poor	Moderate			
Comments	sq. m 0.00 79.64 1.00 0.0			0.00			
Water staining, narrow stained crack. Performance Deficiencies Maintenance Needs Priority Comments							
None							
Rehab/Repair Recom	mendations	Priority	Cost Commen	ts			

Municipal Structure Inspection Form	Munici	ipal Sti	ructure	Inspection	Form
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Piper Street Bridge

Coatings - Struc	tural Steel						
Element Group	Coatings	Length 60.00 Width 0.04					
Element Name	Structural Steel	Height 0.91 Count 1.00					
Location	South Side - Steel Splash Guard	Total Quantity 60.00					
Material	Steel	Limited Inspection					
Element Type		Environment					
Protection System	Hot dip galvanizing	Benign					
Condition Data	Units Excell. Good Fair	Poor Moderate					
Comments	sq. m 0.00 55.00 4.00	1.00 Severe					
Light to severe breakdown of protective coating.							
Performance Deficier	icies Maintenance Needs	Priority Comments					
None Rehab/Repair Recom	mendations Priority Cost Comme	ients					
	•						
Beams/MLE's - G	Birders						
Element Group	Beams/MLE's	Length 12.00 Width 1.22					
Element Name	Girders	Height 0.00 Count 9.00					
Location	Abutments/Piers	Total Quantity 131.76					
Material	Cast-in-place concrete	Limited Inspection					
Element Type	Box/Trapezoidal	Environment					
Protection System	None	🔲 Benign					
Condition Data	Units Excell. Good Fair	Poor V Moderate					
sq. m 0.00; 116.76 11.00 4.00; Severe							
Ends of girders have leakage between units, some with efflorescence, spalling. Some rust staining at locations of reinforcing steel chairs, wide longitudinal cracks, wet areas. Severe spall and delamination on underside of southwest.							
Performance Deficier	Maintenance Needs	Priority Comments					
None							
Rehab/Repair Recom							
Rehab	1-5 yrs \$30,000 Patch	ch repairs and seal wide crack					

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Municipal	Structure	Inspection	Form
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STRUCTURE	INTERPE

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Piper Street Bridge

Beams/MLE's - G	irders						
Element Group	Beams/MLE's			Length	48.00 Width	1.22	
Element Name	Girders Middle			Height	0.60 Count	9.00	
Location						Total Quantity	527.04
Material	Cast-in-place co	ncrete			Limited Inspection		
Element Type	Box/Trapezoida				Environment		
Protection System	None			✓ Benign			
Condition Data	Units Exc	ell. Good	Fair	Poor	Modera	ate	
Comments	sq. m	0.00 481.04	43.00	3.00	Severe Severe		
Leakage typical between units, efflorescence, wide crack with efflorescence, rust staining, spalling, wet areas, hairline stained cracks, delaminations, pop-outs.							
Performance Deficien	cies	Maintenance Nee	ds	Priority	Comments		
None							
	mandationa	Priority	Cost Comme	nte			
Rehab/Repair Recom	nenuations			repairs			
Coatings - Railing	a Systems/Ha			STATE OF BE			
Element Group	Coatings	ina naimigo		and a source as	Length	66.00 Width	0.00
Element Name	Railing Systems/Hand Railings			Height	0.00 Count	4.00	
Location	Double Tube Hand Railing					Total Quantity	82.90
Material	Other			Limited Inspection			
Element Type	Hot dip galvanizing			Environment			
Protection System	Hot dip galvanizing				🔲 Benign		
Condition Data	Units Excell. Good Fair Poor			Poor	Moderate		
Commonte	sq. m 0.00 27.63 0.00 55.27			Severe			
Comments Severe breakdown of protective coating.							
Performance Deficien	cies	Maintenance Nee	ds	Priority	Comments		
None							
Rehab/Repair Recom	mendations	Priority	Cost Comme	nts			

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Municipal Structure	Inspection Form
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Structure Number: Piper Street Bridge

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Retaining walls -	Walls			The start			
Element Group	Retaining walls				Length	5.20 Widt	h 0.40
Element Name	Walls				Height	1.25 Coun	t 3.00
Location	Northeast, North	nwest & Southwest				Total Quantit	y 19.50
Material	Cast-in-place co	oncrete			Limited Inspection		
Element Type	Reinforced cond	crete			Environment		
Protection System	None				🔲 Benign		
Condition Data	Units Exc	ell. Good	Fair	Poor	Modera	te	
Comments	sq. m	0.00 17.50	2.00	0.00	Severe		
Light to medium scaling, narrow to medium cracks, narrow stained cracks.							
Performance Deficien	cies	Maintenance Needs	i	Priority	Comments		
None							
Rehab/Repair Recommendations Priority Cost Comments							
Decks - Wearing	Surface	192 2010 201				(interest)	
Element Group	Decks				Length	60.00 Widt	h 9.20
Element Name	Wearing Surface				Height	0.00 Cour	it 1.00
Location	Top of Deck					Total Quantit	y 552.00
Material	Asphalt				Limited Inspection		
Element Type					Environme	nt	
Protection System	None				🔲 Benign		
Condition Data	Units Excell. Good Fair Poor			Poor	🗌 Modera	te	
Commonto	sq. m	0.00 544.50	2.00	5.50	Severe Severe		
Comments Longitudinal narrow cracking of asphalt for full length of deck at north side. Asphalt patches at each pier joint, cracking, localized wide cracks, wide transverse cracks over piers.							
Performance Deficien	cles	Maintenance Needs	5	Priority	Comments		
None							
Rehab/Repair Recom	mendations	Priority Co	ost Commen	ts			
Rehab	Rehab 1-5 yrs \$5,000 Seal cracks		acks				

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Decks - Deck To	n and the second			1	50 × 1.73		15-20 C 172	193	275-3
Element Group	Decks				1	Length	60.00 W	/idth	11.80
Element Name	Deck Top		1			Height	0.00 Co	ount 🗍	1.00
Location		Below Wearing Surface				1	Total Qua	ntity	708.00
Material	Cast-in-place c					🗌 Limite	d Inspection		
Element Type						Environn	nent		
Protection System						🔲 Benig	n		
Condition Data	Units Excell. Good Fair Poor				Poor	Mode			
	sq. m	0.00	702.50	5.50	0.00	Sever	e		
Comments	·								
Performance Deficie	ncies	Mainten	ance Needs		Priority	Comments			
None									
Rehab/Repair Recon	mendations	Priori	ity Co	ost Commei	nts				
Embankments &	Streams - En	nbankme	ents				4년 중소 원		
Element Group	Embankments	& Streams				Length	0.00	/idth	0.00
Element Name	Embankments			Height	0.00	ount	6.00		
Location	In Front of Abutments, All Quadrants			Total Quantity 6.00			6.00		
Material	Other			☐ Limited Inspection					
Element Type						Environn	nent		
Protection System	None					🔲 Benign			
Condition Data	Units Excell. Good Fair Poor				Poor	Moderate			
Comments	Each	0.00	6.00	0.00	0.00	Seve 🗌	re		
Embankment around	west pier exhibits	moderate e	erosion.						
Performance Deficie	ncies	Mainten	ance Needs	3	Priority	Comments			
None									
D-b-b/D		Delet		ost Comme	nte				
Rehab/Repair Recon	imendations	Prior							

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Municipal Structure Inspection Form

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Piper Street Bridge

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Decks - Soffit - T	bick Slab			1000			
Element Group	Decks	- 20 M - 1 A - 1		1	Length 60.00 Width 1.30		
Element Name	Soffit - Thick SI	ab	Exterior		Height 0.00 Count 1.00		
Location	Underside of D				Total Quantity 78.00		
Material	Cast-in-place c				Limited Inspection		
Element Type					Environment		
Protection System	ů				Benign		
Condition Data	Units Ex	cell. Good	Moderate				
Solution Data	sq. m	0.00 70.00	5.00	3.00	Severe		
Comments Light to moderate spal	lling rust stains n	arrow stained crack	s, wet areas.				
		_					
Performance Deficier	ncies	Maintenance Ne	eds	Priority	Comments		
None							
Rehab/Repair Recom	mendations	Priority	Cost Commer	its			
Rehab		1-5 yrs	\$5,000 Concr	ete patch rep	air		
Embankments &	Streams - Sl	ope Protection					
Element Group	Embankments	& Streams			Length 0.00 Width 0.00		
Element Name	Slope Protection				Height 0.00 Count 4.00		
Location	At Embankmer	nts			Total Quantity 4.00		
Material	Other				Limited Inspection		
Element Type					Environment		
Protection System	None				Benign		
Condition Data	Units Ex	cell. Good	Fair	Poor	✓ Moderate		
Comments	Each	0.00 4.0	0.00	0.00	Severe		
Performance Deficien	ncies	Maintenance Ne	eds	Priority	Comments		
Rehab/Repair Recom	nmendations	Priority	Cost Comme	nts			

Township of North Dumfries **Structure Number: Piper Street Bridge Municipal Structure Inspection Form** Embankments & Streams - Streams & Waterways 0.00 0.00 Width Length Embankments & Streams **Element Group** 1.00 Height 0.00 Count Streams & Waterways Element Name 1.00 **Total Quantity** Location Through Structure Limited Inspection Other Material Environment **Element Type Benign Protection System** None Moderate Excell. Good Fair Poor **Condition Data** Units 0.00 1.00 0.00 0.00 Severe Each Comments Minor build-up of debris on east pier. **Priority Comments Maintenance Needs Performance Deficiencies** None Comments **Rehab/Repair Recommendations** Priority Cost Joints - Seals/Sealants 11.80 Width 0.00 Length **Element Group** Joints 2.00 Height 0.00 Count Seals/Sealants Element Name 23.60 **Total Quantity** Location At Abutments Limited Inspection Material Environment **Element Type** Benign **Protection System** None Moderate Fair Poor **Condition Data** Excell. Good Units 23.60 0.00 0.00 0.00 Severe m Comments Joints are paved over with asphalt. Leakage at both joint locations. **Maintenance Needs** Priority Comments **Performance Deficiencies** None Priority Comments **Rehab/Repair Recommendations** Cost Replace joint seals 1-5 yrs \$41,000 Replace

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Municipal Structure Inspection Form

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Structure N	Number:
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Piper Street Bridge

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Joints - Seals/Se	alants	N. F. S.				st i pi est		
Element Group	Joints					Length	11.80 Width	0.00
Element Name	Seals/Sealar	nts				Height	0.00 Count	2.00
Location	At Piers						Total Quantity	23.60
Material	·					🗋 Limite	d Inspection	
Element Type						Environm	ent	
Protection System	None					🔲 Benigr	ı	
Condition Data	Units	Excell.	Good	Fair	Poor	🔲 Moder	ate	
Comments	m	0.00	0.00	0.00	23.60	Sever	e	
Joints are paved over.	Joints are leak	ing.						
Performance Deficien		Mainto	nance Needs		Priority	Comments		
None		wante	Hanve Needs					
Rehab/Repair Recom	mendations	Prio	rity Co					
Replace		1-5 y	/rs \$41	,000 Replac	ce joint seals			
Piers - Bearings			201 - A. A.		Start and			
Element Group	Piers					Length	0.00 Width	0.00
Element Name	Bearings					Height	0.00 Count	4.00
Location	All					-	Total Quantity	4.00
Material						🗹 Limite	d Inspection	
Element Type						Environm	ent	
Protection System	None					🔲 Benig	n	
Condition Data	Units	Excell.	Good	Fair	Poor	Mode:	rate	
Comments	Each	0.00	0.00	4.00	0.00	Sever Sever	e	
Performance Deficier	sios	Mainte	enance Needs		Priority	Comments		
None	10103							
Rehab/Repair Recom	mendations	Pric	ority Co	st Comme	nts			

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Municipal Structure Inspection Form

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Structure Number: Piper Street Bridge

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Piers - Shafts/Co	umns/Pile Bents				
Element Group	Piers		Length 0.60 Width 6.70		
Element Name	Shafts/Columns/Pile Bents		Height 4.50 Count 2.00		
Location	All		Total Quantity 157.20		
Material	Cast-in-place concrete		Limited Inspection		
Element Type	Concrete shafts, pier walls		Environment		
Protection System	None		Penign		
Condition Data	Units Excell. Good	Moderate			
Comments	sq. m 0.00 79	.20 72.00 6.00	D Severe		
Narrow to medium ver and delaminations.	ical cracks at all pier shafts at ove	rhang beam corners, rust staini	ng, light to severe scaling, wet areas, spalls		
Performance Deficie	cies Maintenance	Needs Priority	Comments		
None					
Rehab/Repair Recom	nendations Priority 1-5 yrs	Cost Comments \$10,000 Patch repair			
Rehab					
Sidewalks/curbs	Sidewalks/curbs		Length 67.20 Width 0.60		
	Curbs	1	Height 0.22 Count 1.00		
Element Name			Total Quantity 55.10		
Location	North Side		Limited Inspection		
Material	Cast-in-place concrete				
Element Type			Environment		
Protection System	None	I Fair Poor			
Condition Data	Units Excell. Good sq. m 0.00 52				
Comments					
Performance Deficient None Rehab/Repair Recorr Rehab					

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Municipal Structure Inspection Form

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Structure Number:

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Piper Street Bridge

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Sidewalks/curbs -	- Sidewalks/M	/ledians	1. 1. S. C. C.					而已是現得
Element Group	Sidewalks/curbs	3			Length	72.00	Width	1.50
Element Name	Sidewalks/Medi	ans			Height	0.22	Count	1.00
Location	South Side				Total Q	uantity	123.84	
Material	Cast-in-place co	oncrete		Limite	d Inspectio	on		
Element Type	1				Environm	ent		
Protection System	None	lone 🗌 Benign						
Condition Data	Units Exc	ell. Good	Poor	Moderate				
Comments	sq. m	0.00 110.84	8.00	5.00	🖌 Sever	e		
with cold patch. Delam	inations, narrow t	t staining. Electrical junc o medium cracks, small ating a possible trip haza	spall areas wi	th exposed r	ebars at vertic	al face alo	ng roadwa	iy. Joint
Performance Deficien	icles	Maintenance Needs		Priority	Comments			
Pedestrian/vehicular h	nazard							
Datat (Datais Datas	mendetione	Priority Cos	st Commen	te				
Rehab/Repair Recom	mendations	1-5 yrs \$10,		sidewalk				
	undations (b	elow ground level	1.1.1.1.1.1.1.1.1.1.1	118-1215				C. M. Carto
Element Group	Foundations	5			Length	0.00	Width	0.00
Element Name	Foundations (b	elow ground level)			Height	0.00	Count	0.00
Location	Abutments/Pier					Total Q	uantity	0.00
Material					🗹 Limite	d Inspecti	on	
Element Type					Environm	ient		
Protection System					🗹 Benig	n		
Condition Data	Units Exc	cell. Good	Fair	Poor	🔲 Mode	rate		
0	N/A							
Comments								
Performance Deficier	ncies	Maintenance Needs		Priority	Comments			
None								
Rehab/Repair Recom	mendations	Priority Co	st Commer	nts				

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Municipal Structure Inspection Form

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Structure Number:

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Piper Street Bridge

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Repair/Rehabilitation Required								
Element Group	Element		Repair/Rehabilitation	Priority	Cost			
Sidewalks/curbs	Curbs		Rehab	1-5 yrs	\$5,000			
Beams/MLE's	Girders	Middle	Rehab	1-5 yrs	\$5,000			
Beams/MLE's	Girders	End	Rehab	1-5 yrs	\$30,000			
Barriers	Posts		Rehab	1-5 yrs	\$70,000			
Joints	Seals/Sealants		Replace	1-5 yrs	\$41,000			
Joints	Seals/Sealants		Replace	1-5 yrs	\$41,000			
^{>} iers	Shafts/Columns/Pile Bents		Rehab	1-5 yrs	\$10,000			
Sidewalks/curbs	Sidewalks/Medians		Rehab	1-5 yrs	\$10,000			
Decks	Soffit - Thick Slab	Exterior	Rehab	1-5 yrs	\$5,000			
Accessories	Utilities	Conduit	Rehab	1-5 yrs	\$5,000			
Decks	Wearing Surface		Rehab	1-5 yrs	\$5,000			
Approaches	Wearing Surface		Rehab	1-5 yrs	\$5,000			
			Total Re	pair/Rehabilitation Cost	\$232,000			

Associated Work

	Comments			E	Estimated Cost
Approaches					\$0
Detours					\$0
Traffic Control					\$10,000
Utilities					\$0
Right-of-Way					\$0
Environmental Study					\$0
Other	Mobilization/Bonds/Access				\$25,000
Contingencies			10 %	**	\$27,000
Engineering			20 %	i#:#	\$54,000
** If based on a percenta	ge calculated values rounded-up to the	Total Associated W	ork Cost		\$116,000
nearest thousand dollars		Total Repair/Rehabilita	tion Cost		\$232,000
		1	otal Cost		\$348,000
		Township of North Dumfries Share	@ 100%		\$348,000
		·	-		
Justification					

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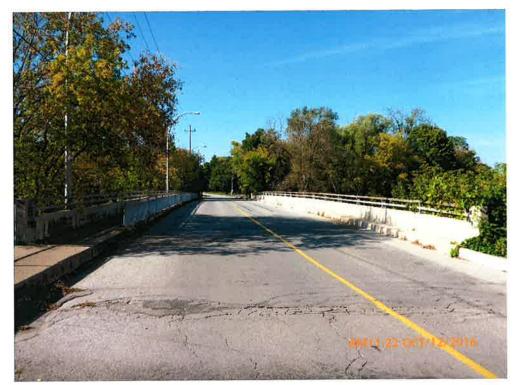
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Tuesday, December 06, 2016

Structure Number: Piper Street Bridge



Looking East at Bridge



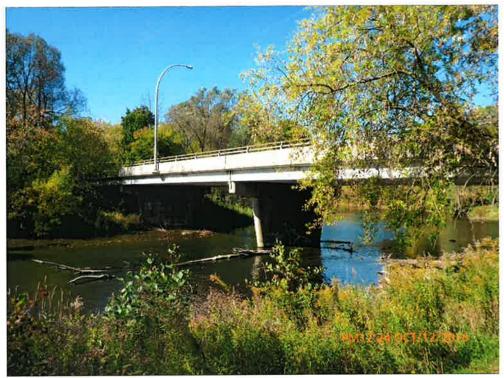
Looking West at Bridge

Structure Number:

Piper Street Bridge



North Elevation



South Elevation

Structure Number: Piper Stre





Breakdown of Protective Coating



Minor Collision Damage to Handrail

Structure Number:

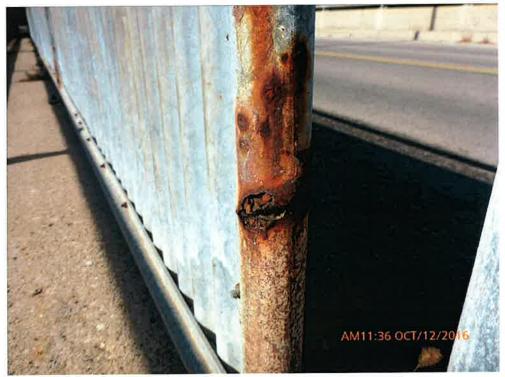
Piper Street Bridge



Delamination on Curb



Localized Wide Cracks on Deck Wearing Surface



Perforation on Pedestrian Splash Barrier



Narrow Stained Crack on Interior Parapet Wall

Structure Number: Piper Street Bridge



Narrow Stained Crack on Exterior Parapet Wall



Typical Soffit



Moderate Spall on Exterior Soffit



Wide Longitudinal Crack in Box Beam Middle



Wide Longitudinal Crack in Box Beam at End



Severe Spall on Beam at End

Structure Number: Piper S





Typical Pier



Minor Erosion Around West Pier

Structure Number:

Piper Street Bridge



Severe Spall on Pier



East Pier Joint

Municipal Structure Inspection Form

Structure Number: Piper Street Bridge



West Pier Joint



Severely Corroded Utility at Joint

Structure Number:

Piper Street Bridge



Typical Pier Bearing



East Abutment



West Abutment



Rust Stains on Abutment Wall

Municipal Structure Inspection Form

Structure Number:

Piper Street Bridge



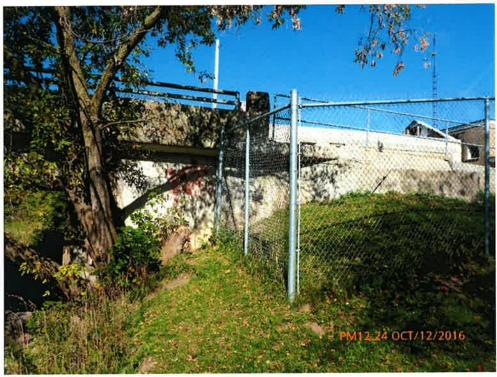
Squashed Abutment Bearing



Typical Wingwall

Structure Number:

Piper Street Bridge



Typical Southeast Wingwall



Narrow Stained Crack on Southeast Wingwall



Typical Retaining Wall



Narrow Stained Crack on Retaining Wall



Looking South Downstream



Loose Anchor Bolts on Handrail Post

Structure Number: Piper St





Wide Crack at End of Deck on Approach



Missing Junction Box Cover Plate in Sidewalk



Severe Delamination on Sidewalk



Localized Breakdown of Protective Coating on Approach Guiderail



Moderate Weathering of Guiderail Post

Summary Action Report Structure Shellard Road Bridge (MTO Site No. Shellard Road Bridge) Shellard Road Bridge (Sideroad 17) over Mill Creek

4

Inspection Date	•	10/12/2016	mm/dd/yyyy			Condition Ir	ndex Value (BC	CI) 82.43
Next Biennial In	spection	10/12/2018	mm/dd/yyyy			Current Rep	\$543,788	
Additional Inve	stigations							
Investigation			Priority	Cost	Investigation		Priority	Cost
No additional inve	estigations re	auired.						
Performance De		· · · · · · · · · · · · · · · · · · ·						
Element Group	Elen	nent		Р	erformance Deficiency			
Approaches	Wea	iring Surface		R	ough riding surface			
Maintenance No	eeds							
Element Group	Element			Mainten	ance Required	Priority	Comment	
Decks	Deck Top			Bridge C	Cleaning	2 уг	Clean deck	
Barriers	Hand Railir	ngs		Bridge H	landrail Maintenance	2 yr	Replace missing	bolts
Approaches	Wearing St	urface		Bridge S	Surface Repair	1 yr	Patch potholes/p approaches	bad
Approaches	Approach (Guiderail		Bridge H	landrail Maintenance	2 yr	Replace damage of flex beam	ed section

Repair/Rehabilitation

repairmenavin	auon					
Element Group	Element		Repair/Reha	abilitation	Priority	Cost
Decks	Deck Top		Rehab	Seal cracks	1-5 yrs	\$5,000
Joints	Armouring/Retaining Devices		Rehab	Repair broken section of armouring angle	1-5 yrs	\$5,000
Abutments	Abutment Walls		Rehab	Patch repair	6-10 yrs	\$5,000
				Total Repair/Rehabilitatior	n Cost	\$15,000
Township of North Dumfries		100 %	\$32,000.00	Total Associated W	ork Cost	\$17,000
		%			Total Cost	\$32.000

Overall Comments

1 - 5 years: Seal cracks in deck top, repair broken section of armouring angle.

6 - 10 years: Patch abutment.

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Municipal Structure Inspection Form

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Structure Number: Shellard Road Bridge

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Inventory Data			1.11					
Structure Name	Shellard Road Brid	lge (Sideroad 17	') over Mil	ll Cree	k Hwy No.	Shellard Key	Photo	
Cross. Type Over	🗌 Road 🔲 Rail	🗆 Ped 🗹	Nav. Wate	er 🗌	Non-Nav. Wat	Other	K	
Cross. Type Under	🖌 Road 🔲 Rail	Ped	Nav. Wate	er 🗌	Non-Nav. Wat] Other	Main some	
Road Name	Shellard Sideroad	(Sideroad 17)						100
Structure Location	Approximately 50n	n South of Gore	Road					
Latitude	43.38787 Lon	gitude -80.26	037 C	Cur. R	ep.Value \$5	543,788	There	
Owner(s)/	Township of North	Dumfries	100) %		**		mean condition
% Share				%	Heritage Status	Not Considered	d for Designatio	n
MTO Region	Southwestern			-1	Road Side Env.	Rural		
MTO District	London/Stratford		Ĩ		Road Class	Local		1
Old County	Waterloo				Lane Type	Regular		
Geographic Twp.	North Dumfries				Posted Speed	80	No. of Lanes	2
Structure Type	I-Beam or Girders				AADT	0	Pct. Trucks	0
Structure Material	Structural Steel				Inspection Route	Sequence		
Articulation	Fixed				Interchange Num	ber		
Total Deck Length	8.53 m	Road Width	6.	8	3 Interchange Structure Number			
Overall Width	7.42 m	Vert. Clear.		0	Detour Length	0 km	Skew Angle	0 *
Total Deck Area	63.29 m ²	No. of Spans		1	Fill on Structure	0 m	Struct. Dir.	North/South
Special Routes	🗌 Transit 🔽 Sch	ool 🔲 Truck	Bicyc	cle	Insp. Duration	1 hr		
Spans	** Current Replaceme	nt Value is based o planning should c	on in kind re onsider site	eplacer e specif	ment of the existing st fic cost factors and re	ructure and calcula quirements for wide	ated using benchm ening or lengtheni	nark costs. Capital ng of the structure.
Span Name		Span Length	Span	Nam	e	S	pan Length	
1		7.3 m						
Historical Data						2		
Year Built	194	0 уууу	Year	r of La	ast Major Rehab	200	09 уууу	
Last OSIM Inspectio	n 06/04/201	6 mm/dd/yyyy	Cont	tract I	No. When Built]
Last Enhanced OSIN	1	mm/dd/yyyy	Last	t Eval	uation		mm/dd/yyyy	
Last Enhanced Acce	55	mm/dd/yyyy	Curr	rent L	oad Limit	t	t 🗌 t	
Last Underwater Ins	p.	mm/dd/yyyy	Loa	d Lim	it By-Law No.		mm/dd/yyyy	
Last Condition Surv	ey	mm/dd/yyyy	By-L	.aw E	xpiry Date		mm/dd/yyyy	
Rehab History								
	ehab Description							
1 /1 /2009 C	omplete deck repla arrier system and a	cement and wide pproach works.	ening inclu	uding	replacement of ste	el girders, conc	rete	

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Municipal Structure Inspection Form

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Road Bridge

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Field Inspect	ion Information:	
Inspection Date	10/12/2016 mm/dd/yyyy Multi Day Inspection	☑ OSIM ☐ Enhanced OSIM
Inspector	D. L. Baxter, P. Eng. Eng. Responsible	D, L. Baxter, P. Eng.
Others in Party	C. Harper J. Parkinson	
Access Equip.	🗌 Lift 🗹 Ladder 🔲 Boat 🔲 Bridge Master Othe	er
Other Equip.	Camera, Hammer, Other Hand Tools	
Weather	Sunny Tem	perature 20 °C

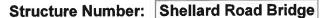
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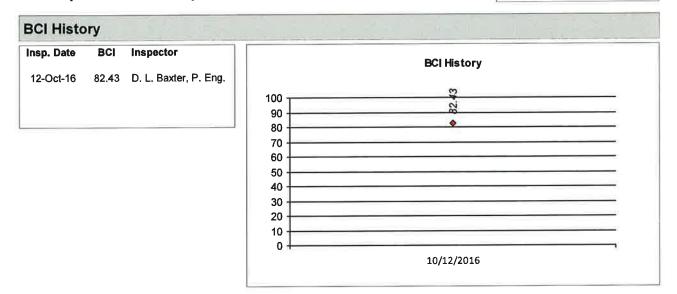
Investigation		Priority			Estimated Cos
-	None	Normal	Urgent		
Detailed Deck Condition Survey		000		1	\$0
Delamination Survey of Asphalt-Covered Deck					\$0
Concrete Substructure Condition Survey		翻加		1	\$0
Detailed Coating Condition Survey]	\$0
Detailed Timber Investigation					\$0
Post-Tensioned Strand Investigation		100			\$0
Underwater Investigation			100	1	\$0
Fatigue Investigation		192			\$0
Seismic Investigation					\$0
Structure Evaluation	ഞ		10		\$0
Monitoring of Deformations, Movements and Settlements		100			\$0
Monitoring of Crack Widths	021				\$0
Investigation Notes				Total Cost	\$0

Overall St	ucture Notes:				
Recommende	d Work on Structure	None	🗹 Rehab	Replace	Remove
Timing of Rec	ommended Work	None	Now	✓ 1 to 5 years	6 to 10 years
Overall Comments	1 - 5 years: Seal cracks	in deck top, repair	broken section o	f armouring angle.	
Comments	6 - 10 years: Patch abut	ment.			
BCI Change Justification					
Justification	1				
Next Inspectio	n 10/12/2018 r	nm/dd/yyyy	E	stimated Load Limit	

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Municipal Structure Inspection Form





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All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

Standard Codes

Suspected Performance Deficiencies

- 00 None
- 01 Load carrying capacity
- Excessive deformations (deflections/rotations) 02
- 03 Continuing settlement
- 04 Continuing movements
- 05 Seized bearings

Maintenance Needs

- 01 Lift and Swing Bridge Maintenance
- Bridge Cleaning 02
- 03 Bridge Handrail Maintenance
- 04 Painting Steel Bridge Structures
- 05 Bridge Deck Joint Repair
- 06 Bridge Bearing Maintenance

- Bearing not uniformly loaded/unstable 06
- 07 Jammed expansion joint
- Pedestrian/vehicular hazard 08
- 09 Rough riding surface
- 10 Surface ponding
- 11 Deck drainage
- Repair to Structural Steel 07
- Repair of Bridge Concrete Repair of Bridge Timber 08
- 09
- Bailey Bridges Maintenance Animal/Pest Control 10
- 11
- Bridge Surface Repair 12

- Slippery surfaces
- 13 Flooding/channel blockage
- Undermining of foundation 14
- 15 Unstable embankments
- 16 Other

12

- Erosion Control at Bridges 13
- **Concrete Sealing** 14
- 15 Rout and Seal
- Bridge deck Drainage 16
- Scaling (Loose Concrete or ACR Steel) 17
- 18 Other

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Municipal Structure Inspection Form

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Structure Number: Shellard Road Bridge

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Decks - Deck To	p		Stores.		
Element Group	Decks				Length 8.53 Width 7
Element Name	Deck Top				Height 0.00 Count 1
ocation	Wearing Surfa	се			Total Quantity 63
laterial	Cast-in-place of	oncrete			Limited Inspection
lement Type			Environment		
rotection System	None		🔲 Benign		
Condition Data	Units Ex	cell. Good	Fair	Poor	Moderate
omments	m2	0.00 46.29	Severe		
at locations between p	precast units (2 fu	II width cracks at ends, (alls. Narrow to wide crac	3 spread out thr	ough centre)	ts. Narrow transverse cracking of overla . Small area of pattern cracking at
Performance Deficie	ncies	Maintenance Needs	;	Priority	Comments
None		Bridge Cleaning		2 yr	Clean deck
				4	
Rehab/Repair Recom	mendations		5,000 Seal cr		
Rehab		1-5 yrs \$5		acks	
Decks - Soffit - 1		r a fut saves, PS	2	1.21.250	Length 7.30 Width 1
lement Group	Decks		7 . 4		
lement Name	Soffit - Thin Sl		Exterior		Height 0.00 Count 1 Total Quantity 12
ocation	Underside of D				Limited Inspection
laterial	Cast-in-place of	oncrete			
Element Type					Environment
					Benign
Protection System	Units Excell. Good Fair Poor				✓ Moderate
Condition Data	m2	Good 9.41 1.00	1.00	1.00	
Protection System Condition Data Comments Narrow stained cracks	m2				
Condition Data	m2		1.00	1.00	
Condition Data	m2	9.41 1.00	1.00	1.00	 ☐ Severe

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Decks - Soffit - T	hin Slab						Chinese and
Element Group	Decks				Length	7.30 Width	5.20
Element Name	Soffit - Thin SI	ab	Interior		Height	0.00 Count	1.00
Location	Underside of [Deck				Total Quantity	37.96
Material	Precast concre	ete			Limited	Inspection	
Element Type	-				Environme	ent	
Protection System	None				🗹 Benign		
Condition Data	Units Ex	cell. Good	d Fair	Modera	ate		
Comments	m2	34.96 1	1.00 1.00	1.00	Severe	•	
Soffit consists of botton	ms of pre-cast d	eck units. Narrow	stained crack, efflo	escence.			
Performance Deficien	icies	Maintenance	Needs	Priority	Comments		
None							
Rehab/Repair Recom	mendations	Priority	Cost Comm	ents			
Joints - Armouri	ng/Retaining	Devices					e l'ille a wa
Element Group	Joints				Length	6.80 Width	0.08
Element Name	Armouring/Re	taining Devices			Height	0.00 Count	2.00
Location	Armouring An	gle				Total Quantity	13.60
Material					Limited	d Inspection	
Element Type					Environm	ent	
Protection System	-				🔲 Benigr	ı	
Condition Data	Units E	ccell. Goo	d Fair	Poor	Moder	ate	
Comments	m	0.00 10	0.00	3.00	Severe	e	
Minor abrasions, broke	en at south end.						
Performance Deficier	ncies	Maintenance	Needs	Priority	Comments		
None							
Rehab/Repair Recom	mendations	Priority	Cost Comm	ents			
Rehab		1-5 yrs	\$5,000 Rep	air broken sect	tion of armouri	ng angle	

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Barriers - Barrier	/Parapet Wall	S				Sand La Strength		
Element Group	Barriers				Length	13.90 Width	0.26	
Element Name	Barrier/Parapet	Walls	Exterior		Height	0.80 Count	2.00	
Location	East and West	Sides				Total Quantity	22.24	
Material	Cast-in-place c	oncrete			Limite			
Element Type	Parapet Wall w	ith single railing			Environment			
Protection System					🔲 Benigr	ı		
Condition Data	Units Ex	cell. Good	Fair	Poor	V Moder	ate		
Comments	m2	22.24 0.00	0.00	0.00	Severe	e		
Performance Deficier None Rehab/Repair Recom		Maintenance Nee Priority	eds Cost Commen		Comments			
Barriers - Barrier	/Parapet Wal	S		TICK.				
Element Group	Barriers				Length	13.90 Width	0.00	
Element Name	Barrier/Parapet	Walls	Interior		Height	1.06 Count	2.00	
Location	East and West	Sides				Total Quantity	29.47	
Material	Cast-in-place c	oncrete			Limited Inspection			
Element Type	Parapet Wall w	ith single railing			Environm	ent		
Protection System	None				🔲 Benig	n		
Condition Data	Units Ex	cell. Good	Fair	Poor	Moder	rate		
Comments	m2	0.00 27.47	2.00	0.00	V Sever	e		
Concrete barrier syste	m new in 2009. H	airline stained map o	cracking, narrow st	ained and u	nstained crack	κ.		
Performance Deficien	ncies	Maintenance Nee	eds	Priority	Comments			
None Rehab/Repair Recom	mendations	Priority	Cost Commen	ts				

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Barriers - Posts				1, zhin			
Element Group	Barriers				Length	0.10 Width	0.15
Element Name	Posts				Height	0.82 Count	60.00
Location	All Quadrants					Total Quantity	60.00
Material	Steel				Limite	d Inspection	
Element Type					Environm	ent	
Protection System	Hot dip galvaniz	zing			🔲 Benigr	1	
Condition Data	Units Exc	cell. Good l	air Poo	or	🔲 Moder	ate	
Comments	Each	0.00 60.00	0.00	0.00	Severe)	
Performance Deficier	ncies	Maintenance Needs	Pric	ority (Comments		
	icles	Maintenance Needs	FIL	nity (comments		
None							
Rehab/Repair Recom	mendations	Priority Cost	Comments				
Barriers - Hand F	Railings			n tra dat			dis-
Element Group	Barriers				Length	12.90 Width	0.00
Element Name	Hand Railings				Height	0.00 Coun	2.00
Location	East and West	Sides				Total Quantity	25.80
Material	Aluminum				Limited Inspection		
Element Type	Single Railing				Environm	ent	
Protection System					🔲 Benigi	ı	
Condition Data	Units Ex	cell. Good l	Fair Poo	or	Moder	ate	
Comments	m	0.00 19.80	6.00	0.00	Sever	e	
3 J-bolts missing west	side, 1 missing o	n east side.					
Performance Deficier	ncies	Maintenance Needs			Comments	ing holts	
None		Bridge Handrail Maintena	ance 2	yr	Replace mis	sing dolts	
Rehab/Repair Recom	mendations	Priority Cost	Comments				

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Structure Number: Shellard Road Bridge

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Beams/MLE's - G	lirders				「「「「「「」」」	그날카그로
Element Group	Beams/MLE's			Length	8.00 Width	0.20
Element Name	Girders			Height	0.31 Count	5.00
Location	All				Total Quantity	48.40
Material	Steel			Limited	Inspection	
Element Type	I-type			Environment		
Protection System	Red lead prime	r/alkyd		🖌 Benign		
Condition Data	Units Exc	cell. Good F	air Poor	Modera Modera	te	
Comments	m2	47.40 1.00	0.00 0.00	Severe Severe		
Light corrosion						
Performance Deficien	cies	Maintenance Needs	Priority	Comments		
Rehab/Repair Recom	mendations	Priority Cost	Comments			
	1		116 N. S. S. S. M. S.	R DALS IT A. W.		
Beams/MLE's - D Element Group	Beams/MLE's		ng tanin intera	Length	1.50 Width	0.00
Element Name	Diaphragms	1		Height	0.00 Count	4.00
Location	All				Total Quantity	4.00
Material	Steel			Limited Inspection		
Element Type	I-type			Environment		
	Red lead prime	rialkyd		Benign		
Protection System Condition Data			air Poor	Moderate		
Condition Data	Each	3.00 1.00	0.00 0.00			
Comments						
Light corrosion.						
Performance Deficien	ncies	Maintenance Needs	Priority	Comments		
None						
Rehab/Repair Recommendations Priority Cost Comments						

Municipal Structure Inspection Form

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Structure Number: Shellard Road Bridge

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Coatings - Struct	ural Steel							
Element Group	Coatings			Length 0.00 Width 0.00				
Element Name	Structural Steel			Height 0.00 Count 0.00				
Location	Girders/Diaphra	igms		Total Quantity 48.40				
Material	Other			Limited Inspection				
Element Type	Red lead prime	r/alkyd		Environment				
Protection System	Red lead prime	r/alkyd		🗹 Benign				
Condition Data	Units Exc	cell. Good Fair	Poor	Moderate				
Commonte	m2 47.40 1.00 0.00 0.00			Severe				
Comments Minor breakdown of protective coating.								
Performance Deficien	cies	Maintenance Needs	Priority	Comments				
None								
Pohah/Ponais Poaces	mondations	Priority Cost Comme	nts					
Rehab/Repair Recom	menuations	Frioncy Cost Comme						
Coatings - Railin	a Systems/H:	and Railings	11. M M					
Element Group	Coatings			Length 0.00 Width 0.00				
Element Name		s/Hand Railings	1	Height 0.00 Count 0.00				
Location	Guiderail & Pos			Total Quantity 90.72				
Material	Hot Dip Galvan	izina		Limited Inspection				
Element Type				Environment				
Protection System				Benign				
Condition Data	Units Ex	cell. Good Fair	Poor	Moderate				
	sq. m	0.00 90.72 0.00	0.00	Severe				
Comments								
Performance Deficier	ncios	Maintenance Needs	Priority	Comments				
None								
Rehab/Repair Recom	mendations	Priority Cost Comme	ents					

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Abutments - Abu	tment Walls		20.021.24	125 11 21 12	e si hisi ili		
Element Group	Abutments			Length	0.00 Width	6.62	
Element Name	Abutment Walls	s		Height	1.10 Count	2.00	
Location	North and Sout	h Sides			Total Quantity	14.56	
Material	Cast-in-place c	oncrete		🗹 Limited	Inspection		
Element Type	Conventional C	losed		Environm	Environment		
Protection System	None			🔲 Benigr	I		
Condition Data	Units Ex	cell. Good Fair	Poor	Moder	ate		
Comments	m2	2.00 10.56 1.00	1.00	Severe)		
Light scaling, concrete	patches, narrow	stained cracks, spalls.					
Performance Deficie	ncies	Maintenance Needs	Priority	Comments			
None Rehab/Repair Recom	mendations	Priority Cost Comn	ients				
Rehab		6-10 yrs \$5,000 Pat	ch repair				
Abutments - Wir	igwalls						
Element Group	Abutments			Length	3.30 Width	0.00	
Element Name	Wingwalls			Height	1.60 Count	4.00	
Location	Corners of Stru	ucture		_	Total Quantity	21.12	
Material	Cast-in-place of	concrete		Limited Inspection			
Element Type	Reinforced cor	ncrete		Environm	ent		
Protection System	None			Benign			
Condition Data	Units Ex	cell. Good Fair	Poor	Moder			
Comments	m2	13.20 5.92 2.00	0.00	00 Severe			
Narrow to medium cra	acks with effloreso	cence staining, rust stains, narrow s	ained cracks.				
Performance Deficie	ncies	Maintenance Needs	Priority	Comments			
None							
Debeb/Denei- Dee	mondations	Priority Cost Com	nents				
Rehab/Repair Recon	menuations	Thoney Cost Com					

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Structure Number: Shellard Road Bridge

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Approaches - We	aring Surface			12123	N. N. L.		
Element Group	Approaches				Length	6.00 Width	6.80
Element Name	Wearing Surface				Height	0.00 Count	2.00
Location	North and South	า				Total Quantity	81.60
Material	Asphalt				Limited	Inspection	
Element Type					Environme	ent	
Protection System	None				🗌 Benign		
Condition Data	Units Exc	ell. Good	Fair	Poor	Modera	ite	
Comments	sq. m	0.00 80.60	0.00	1.00	Severe Severe		
New approach asphalt settlement adjacent to		n 2009. Approach aspha	alt has settled a	t both ends	s of bridge, mind	or potholes, narrow	cracks,
Performance Deficien	cies	Maintenance Needs		Priority	Comments		
Rough riding surface		Bridge Surface Repai	r	1 yr	Patch pothole	s/pad approaches	
Rehab/Repair Recom	mendations	Priority Co	st Comments	5			
Approaches - Ap	proach Guide	erail					
Element Group	Approaches				Length	0.00 Width	0.00
Element Name	Approach Guid	erail	xtruder		Height	0.00 Count	4.00
Location	All Quadrants					Total Quantity	4.00
Material	Steel				Limited Inspection		
Element Type					Environme	ənt	
Protection System	Hot dip galvani	zing			🔲 Benign		
Condition Data	Units Ex	cell. Good	Fair	Poor	Modera	ate	
Comments	sq. m	0.00 4.00	0.00	0.00	Severe Severe	•	
Performance Deficiencies Maintenance Needs Priority Comments None Rehab/Repair Recommendations Priority Cost Comments							

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Structure Number: Shellard Road Bridge

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Foundations - Fo	oundations (be	olow ground leve	I)			AL:S.		12 200
Element Group	Foundations				Length	0.00	Width	0.00
Element Name	Foundations (below ground level)				Height	0.00 Co	Count	0.00
Location	At Abutments					Total Q	uantity	0.00
Material					Limited Inspection			
Element Type					Environment			
Protection System	1				🔳 Benign			
Condition Data	Units Exc	ell. Good	Fair	Poor	Moderate			
Comments	N/A				Severe			
Limited inspection,								
Performance Deficier	ncies	Maintenance Needs	3	Priority	Comments			
None								
Rehab/Repair Recom			ost Commer	nts		1755,22		
Approaches - Ap	(rail	selle kard "		Length	19.05	Width	0.00
Element Group	Approaches	una li			Height		Count	4.00
Element Name	Approach Guide	i all			noight [uantity	76.20
Location	At Approaches					d Inspecti	_	
Material	Steel Beam on	Steel Deste			Environment			
Element Type								
Protection System	Hot dip galvaniz		Fair	Poor				
Condition Data		11.20 63.00	1.00	1.00	Severe			
Comments		i i						
Severe collision dama	ige in Southwest q	uadrant.						
Performance Deficie	ncies	Maintenance Need	s	Priority	Comments			
None		Bridge Handrail Mai	ntenance	2 yr	Replace dam	aged sect	ion of flex h	beam
Rehab/Repair Recom	nmendations	Priority C	ost Comme	nts				

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Structure Number: Shellard Road Bridge

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Repair/Rehabilitation Required					
Element Group	Element	Repair/Rehabilitation	Priority	Cost	
Abutments	Abutment Walls	Rehab	6-10 yrs	\$5,000	
Joints	Armouring/Retaining Devices	Rehab	1-5 yrs	\$5,000	
Decks	Deck Top	Rehab	1-5 yrs	\$5,000	
			Total Repair/Rehabilitation Cost	\$15,000	

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Associated Work

	Comments			E	Estimated Cost
Approaches					\$0
Detours					\$0
Traffic Control					\$5,000
Utilities					\$0
Right-of-Way					\$0
Environmental Study					\$0
Other	Mobilization/Bonds				\$1,000
Contingencies			10%	**	\$3,000
Engineering			%	**	\$8,000
	ge calculated values rounded-up to the	Total Associated Work Cost			\$17,000
nearest thousand dollars		Total Repair/Rehabilitat	ion Cost		\$15,000
		т	otal Cost		\$32,000
		Township of North Dumfries Share	@ 100%		\$32,000
Justification					

Structure Number: Shellard Road Bridge



Looking North at Bridge

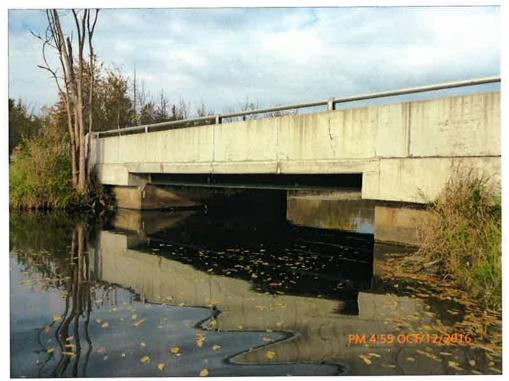


Looking South at Bridge

Structure Number: Shellard Road Bridge



East Elevation



West Elevation

Municipal Structure Inspection Form



Severe Collision Damage to Guiderail



Narrow Stained Cracks on Interior Parapet Wall



Narrow Stained Cracks on Exterior Parapet Wall



Build-up of Debris on Deck



Wide Crack on Exposed Concrete Deck



Missing Section of Armoring Angle



North Armouring Angle



Typical Soffit



Narrow Stained Crack on Interior Soffit



Narrow Stained Cracks on Exterior Soffit

Structure Number: Shellard Road Bridge



Light Corrosion on Girder



Typical Diaphragm



Light Corrosion on Diaphragm



Breakdown of Protective Coating

Municipal Structure Inspection Form

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North Abutment



South Abutment

Municipal Structure Inspection Form



Light Spall on Abutment Below Girders



Typical Wingwall

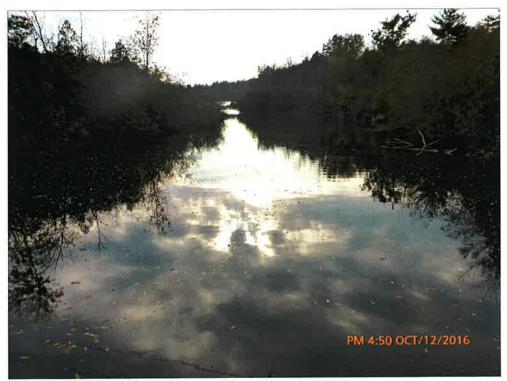
Structure Number: Shellard Road Bridge



Narrow Stained Crack on Wingwall



Looking East Upstream



Looking West Downstream



Pothole on Approach Wearing Surface

Structure Number: Shellard Road Bridge



Settlement on Approach