

Appendix B



MUNICIPAL STRUCTURE INSPECTION FORM

Structure ID: 050

INVENTORY DATA:

Structure Name	<u>Mill Creek Bridge</u>				
Main Highway #	<u>-</u>	On ☒ or Under ☐ Structure	Service on Structure:	Navigable Water ☐	Non- Navigable Water ☐
				Rail ☐	Road ☐
				Pedestrian ☒	Other ☐
Location Description	<u>Trail, 0.06km South of Sumac Drive</u>		Service Under	Navigable Water ☐	Non- Navigable Water ☒
				Rail ☐	Road ☐
				Pedestrian ☐	Other ☐
Owner / Custodian	<u>Town of Kingsville</u>	LHRS:	<u>-</u>	LHRS Offset:	<u>-</u>
MTO Region	<u>West</u>	Latitude	<u>42.04193423</u>	Longitude	<u>-82.73565730</u>
Regional Engineer	<u>-</u>	Heritage Designation	Not Cons. ☒	Cons./Not App. ☐	List/Not Desig. ☐
			Desig. ☐	Desig./not List ☐	Desig. & List ☐
MTO Area	<u>Windsor</u>	Hwy Class:	Freeway ☐	Arterial ☐	Collector ☐
			Local ☒		
Old County	<u>Waterloo</u>	Posted Speed	<u>N/A</u>	No. of Lanes	<u>1</u>
Township	<u>Kingsville</u>	AADT	<u>N/A</u>	% Trucks	<u>N/A</u>
Structure Type 1	<u>Pedestrian Bridge</u>	Travel Stream	<u>-</u>		
Structure Material 1	<u>Timber Deck on Steel Beams</u>	Traffic Directional Bound	<u>North / South</u>		
Structure Type 2	<u>-</u>	Inspection Route Sequence	<u>-</u>		
Structure Material 2	<u>-</u>	Inspection Frequency	<u>Biennial</u>	(years)	
Total Deck Length	<u>18.65</u>	(m)	Inspection Year	<u>2019</u>	
Overall Str. Width	<u>1.53</u>	(m)	Inspection Duration	<u>1</u>	(hrs)
Culvert Length	<u>-</u>	(m)	Interchange Number	<u>-</u>	
Total Deck Area	<u>28.54</u>	(sq. m)	Interchange Structure Number	<u>-</u>	
Roadway Width	<u>1.53</u>	(m)	Min. Vertical Clearance	<u>-</u>	(m)
Skew Angle	<u>-</u>	(Degree)	Detour Distance	<u>-</u>	(km)
No. of Spans	<u>3</u>		Fill on Structure	<u>0</u>	(m)
Span Lengths	<u>6.22, 6.21, 6.22</u> (m)				

HISTORICAL DATA

Year Built	1990	Year of Superstructure Constructed	-
Last Reg. OSIM Inspection	August 24, 2017	Year of Last Minor Rehab.	-
Last Enh. OSIM Inspection	-	Year of Last Major Rehab.	-
		Current Load Limit	(/ /) tonnes

Work History: (Date / Description)

Investigation History: (Date / Description)

SCHEDULED IMPROVEMENTS

Regional Priority Number

Programmed Work Year

Nature of Program Work

APPRAISAL INDICES

Comments

Fatigue

Seismic

Scour

Floor

Barrier

Curb

Load Capacity

FIELD INSPECTION INFORMATION

Date of Inspection: March 28, 2019 Type of Inspection: ☒ OSIM ☐ Enhanced OSIM
 Inspector: Mohamed El-Sarji, P.Eng.; AUE Structural Inc.
 Others in Party: Tova Govia, P.Eng.; AUE Structural Inc.
 Enh. Access Equipment: None
 Special Access Equipment: None
 Weather: Overcast Temperature: 12 °C

ADDITIONAL INVESTIGATION REQUIRED
Priority

None

Normal

Urgent

Estimated Cost

Rehabilitation / Replacement Study:		X		\$ 15,000.00
Material Condition Survey				
Detailed Deck Condition Survey:	X			\$ -
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X			\$ -
Concrete Substructure Condition Survey:	X			\$ -
Detailed Coating Condition Survey:	X			\$ -
Detailed Timber Investigation:	X			\$ -
Post-Tensioned Strand Investigation:	X			\$ -
Underwater Investigation:	X			\$ -
Fatigue Investigation:	X			\$ -
Seismic Investigation:	X			\$ -
Structure Evaluation:	X			\$ -
Monitoring				
Deformations, Settlement and Movements:	X			\$ -
Crack Widths:	X			\$ -
Total Cost				\$ 15,000.00

Investigation Notes:
OVERALL STRUCTURAL NOTES:

Recommended Work on Structure: ☐ None ☐ Minor Rehab. ☐ Major Rehab. ☒ Replace

Timing of Recommended Work: ☐ < 1 year ☒ 1 to 5 years ☐ 6 to 10 years

Overall Comments:

Structure is generally in fair to poor condition.

Overall replacement /rehabilitation options, estimate, and schedule should be determined by the rehabilitation / replacement study.

Condition Index: 60

Date of Next Inspection: By December 2021
Suspected Performance Deficiencies

- | | | |
|--|--|-----------------------------------|
| 00 None | 06 Bearing not Uniformly Loaded / Unstable | 12 Slippery Surfaces |
| 01 Load Carrying Capacity | 07 Jammed Expansion Joint | 13 Flooding / Channel Blockage |
| 02 Excessive Deformations (Deflections & Rotation) | 08 Pedestrian / Vehicular Hazard | 14 Undermining of Foundation |
| 03 Continuing Settlement | 09 Rough Riding Surface | 15 Unstable Embankments |
| 04 Continuing Movements | 10 Surface Ponding | 16 Other Performance Deficiencies |
| 05 Seized Bearings | 11 Deck / Wall Drainage | |

Maintenance Needs

- | | | |
|-----------------------------|-------------------------------|--|
| 00 None | 07 Structural Steel Repair | 14 Concrete Sealing |
| 01 N/A | 08 Concrete Repair | 15 N/A |
| 02 Bridge Cleaning | 09 Timber Repair | 16 Works for Drainage System |
| 03 Railing System Repair | 10 Works for Modular Bridges | 17 Scaling (Loose Concrete or ACR Steel) |
| 04 N/A | 11 Animal / Pest Control | 18 Other Maintenance |
| 05 Bridge Deck Joint Repair | 12 Bridge Surface Repair | |
| 06 N/A | 13 Erosion Control at Bridges | |

ELEMENT DATA					
Element Group:	Approaches		Length:	6.00 m	
Element Name:	Wearing Surface		Width:	1.53 m	
Location:	North & South of Structure		Height:	0.00 m	
Material:	Native		Count:	2	
Element Type:	Trail Path		Total Quantity:	18.36 m ²	
Environment:	Severe		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	Gravel				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	18.36	0.00	0.00
Comments: – Gravel noted over pathway at north, and native at south. – Generally in good condition.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Approaches		Length:	6.00 m	
Element Name:	Approach Slabs		Width:	1.53 m	
Location:	Below Approach Wearing Surface		Height:	0.15 m	
Material:	Cast-In-Place Concrete		Count:	2	
Element Type:	Reinforced Concrete Approach Slabs		Total Quantity:	18.36 m ²	
Environment:	Moderate		Inspected:	Yes ☐ No ☒ Limited ☐	
Protection System:	Trail Path				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	18.36	0.00	0.00
Comments: – Approach slabs rating based on condition of trail path installed overtop. – No visible evidence of approach slab performance deficiencies were noted at the time of inspection.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Barriers		Length:	6.21 m	
Element Name:	Railing Systems		Width:	-	
Location:	East & West Sides of Structure		Height:	0.90 m	
Material:	Steel		Count:	6	
Element Type:	HSS Rails on Steel Posts		Total Quantity:	37.26 m	
Environment:	Severe		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	Paint				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m	0.00	37.26	0.00	0.00
Comments: - Localized light corrosion noted on barrier. - Gaps observed between steel panels. - The existing barrier does not conform to current standards and should be replaced with a code compliant barrier within a year. A roadside safety review is recommended in order to determine barrier requirements.					
Performance Deficiencies: 08 – Pedestrian / Vehicular Hazard			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☒ Replace ☒ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Barriers		Length:	0.15 m	
Element Name:	Posts		Width:	0.15 m	
Location:	East & West Sides of Structure		Height:	0.90 m	
Material:	Steel		Count:	18	
Element Type:	HSS Steel Posts		Total Quantity:	18	
Environment:	Severe		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	Paint				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	0	18	0	0
Comments: - Localized corrosion noted on barrier posts. - The existing barrier does not conform to current standards and should be replaced with a code compliant barrier within a year. A roadside safety review is recommended in order to determine barrier requirements.					
Performance Deficiencies: 08 – Pedestrian / Vehicular Hazard			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☒ Replace ☒ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Coatings		Length:	-	
Element Name:	Barrier Systems / Hand Railings		Width:	-	
Location:	On Deck Barrier		Height:	-	
Material:	Other		Count:	-	
Element Type:	Paint		Total Quantity:	43.25 m ²	
Environment:	Severe		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	37.08	6.00	0.17
Comments: Coating loss observed on deck barrier.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Decks		Length:	18.65 m	
Element Name:	Deck Top		Width:	1.53 m	
Location:	Top of Deck		Height:	0.05 m	
Material:	Timber		Count:	-	
Element Type:	Timber Planks		Total Quantity:	28.53 m ²	
Environment:	Severe		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	26.23	2.00	0.30
Comments: – Light to medium checks, splits and splinters noted on timber deck. – Localized missing sections also observed. – Localized rot and deterioration noted on deck top. – Timber planks can be replaced as required.					
Performance Deficiencies: 00 – None			Maintenance Needs: 09 - Timber Repair		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☒ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Decks		Length:	37.30 m	
Element Name:	Soffit – Timber		Width:	0.20 m	
Location:	East & West Sides of Deck		Height:	-	
Material:	Timber		Count:	-	
Element Type:	Exterior – Fascias		Total Quantity:	7.46 m ²	
Environment:	Moderate		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	5.41	2.00	0.05
Comments: – Light to medium checks and splits noted on soffit fascias. – Localized rot / deterioration also observed. – Timber planks can be replaced as required.					
Performance Deficiencies: 00 – None			Maintenance Needs: 09 – Timber Repair		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☒ 1 Year ☐ 2 Years		

Element Group:	Decks		Length:	18.65 m	
Element Name:	Soffit – Timber		Width:	1.29 m	
Location:	Underside of Deck		Height:	-	
Material:	Timber		Count:	-	
Element Type:	Timber Planks		Total Quantity:	24.06 m ²	
Environment:	Benign		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	24.06	0.00	0.00
Comments: Generally in good condition.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Beams / Main Longitudinal Elements (MLEs)		Length:	6.20 m	
Element Name:	Stringers		Width:	0.06 m	
Location:	Underside of Structure		Height:	0.20 m	
Material:	Steel		Count:	12	
Element Type:	Steel Channel Beams		Total Quantity:	43.15 m ²	
Environment:	Benign		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	Paint				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	6.47	25.89	10.79
Comments: Medium to severe corrosion with flaking and section loss noted at stringers.					
Performance Deficiencies: 01 – Load Carrying Capacity			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☒ Replace ☒ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Beams / Main Longitudinal Elements (MLEs)		Length:	0.15 m	
Element Name:	Floor Beams		Width:	1.53 m	
Location:	Below Stringers		Height:	0.16 m	
Material:	Steel		Count:	2	
Element Type:	Steel I-Beams		Total Quantity:	2.36 m ²	
Environment:	Benign		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	Paint				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	0.00	1.18	1.18
Comments: Medium to severe corrosion with flaking and section loss noted at floor beams.					
Performance Deficiencies: 01 – Load Carrying Capacity			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☒ Replace ☒ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Beams / Main Longitudinal Elements (MLEs)		Length:	0.43 m	
Element Name:	Diaphragms		Width:	0.05 m	
Location:	Between Stringers		Height:	0.11 m	
Material:	Steel		Count:	16	
Element Type:	HSS Diaphragms		Total Quantity:	16	
Environment:	Benign		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	Paint				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	0	0	10	6
Comments: Medium to severe corrosion noted on diaphragms.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☒ Replace ☒ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Coatings		Length:	-	
Element Name:	Structural Steel		Width:	-	
Location:	On Beams		Height:	-	
Material:	Other		Count:	-	
Element Type:	Paint		Total Quantity:	47.71 m ²	
Environment:	Benign		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	0.00	0.00	47.71
Comments: Severe coating loss noted on structural steel.					
Performance Deficiencies: 16 – Coating Failure			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☒ Replace ☒ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Abutments		Length:	-	
Element Name:	Ballast Walls		Width:	1.53 m	
Location:	North & South Underside of Structure		Height:	0.20 m	
Material:	Cast-In-Place Concrete		Count:	2	
Element Type:	Conventional Closed		Total Quantity:	0.61 m ²	
Environment:	Benign		Inspected:	Yes ☐ No ☒ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	0.00	0.61	0.00
Comments: – Abutment elements were not visible at the time of inspection. – No visible evidence of ballast wall performance deficiencies was noted at the time of inspection.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Abutments		Length:	-	
Element Name:	Abutment Walls		Width:	1.53 m	
Location:	North & South Underside of Structure		Height:	1.00 m	
Material:	Cast-In-Place Concrete		Count:	2	
Element Type:	Conventional Closed		Total Quantity:	1.53 m ²	
Environment:	Benign		Inspected:	Yes ☐ No ☒ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	0.00	1.53	0.00
Comments: – Abutment elements were not visible at the time of inspection. – No visible evidence of abutment wall performance deficiencies was noted at the time of inspection. – It has been assumed that the stringers bear directly onto the bearing seat (i.e. there are no abutment bearings) since the floor beams bear direction onto the pier columns.					
Performance Deficiencies: 00 - None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Abutments		Length:	1.00 m	
Element Name:	Wingwalls		Width:	-	
Location:	NE, NW, SE & SW of Structure		Height:	1.00 m	
Material:	Cast-In-Place Concrete		Count:	4	
Element Type:	Reinforced Concrete Wall		Total Quantity:	4.00 m ²	
Environment:	Moderate		Inspected:	Yes ☐ No ☒ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	0.00	4.00	0.00
Comments: – Abutment elements were not visible at the time of inspection. – No visible evidence of wingwall performance deficiencies was noted at the time of inspection.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Piers		Length:	0.50 m	
Element Name:	Shafts / Columns / Pile Bents		Width:	0.50 m	
Location:	Underside of Structure		Height:	0.40 m	
Material:	Cast-In-Place Concrete		Count:	4	
Element Type:	Pier Column		Total Quantity:	2.51 m ²	
Environment:	Benign		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	m ²	0.00	2.39	0.12	0.00
Comments: Light to medium honeycombing noted at pier columns.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Foundations		Length:	-	
Element Name:	Foundation (Below Ground Level)		Width:	-	
Location:	Below Abutments and Piers		Height:	-	
Material:	Unknown		Count:	-	
Element Type:	Unknown		Total Quantity:	-	
Environment:	Benign		Inspected:	Yes ☐ No ☒ Limited ☐	
Protection System:	Unknown				
Condition Data:	Units	Excellent	Good	Fair	Poor
	N/A	0	0	0	0
Comments: No visible evidence of foundation instability was noted during the inspection.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Embankments and Streams		Length:	-	
Element Name:	Embankments		Width:	-	
Location:	NE, NW, SE, SW of Structure & at Abutment Walls		Height:	-	
Material:	Native Soil		Count:	-	
Element Type:	Embankment		Total Quantity:	6	
Environment:	Moderate		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	Vegetation				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	0	6	0	0
Comments: – No approach barriers were noted at the time of inspection. Code compliant barrier should be installed within a year. A roadside safety review is recommended in order to determine barrier requirements. – Embankments generally in good condition.					
Performance Deficiencies: 08 – Pedestrian / Vehicular Hazard			Maintenance Needs: 00 – None		
Recommended Work: ☒ Rehab. ☐ Replace ☒ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

ELEMENT DATA					
Element Group:	Embankments and Streams		Length:	-	
Element Name:	Slope Protection		Width:	-	
Location:	NE, NW, SE & SW of Structure		Height:	-	
Material:	Organic		Count:	-	
Element Type:	Vegetation		Total Quantity:	4	
Environment:	Moderate		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	Each	0	4	0	0
Comments: Generally in good condition.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

Element Group:	Embankments and Streams		Length:	-	
Element Name:	Streams and Waterways		Width:	-	
Location:	Below Structure		Height:	-	
Material:	Native		Count:	-	
Element Type:	Scratch Wigle Drain		Total Quantity:	All	
Environment:	Benign		Inspected:	Yes ☒ No ☐ Limited ☐	
Protection System:	None				
Condition Data:	Units	Excellent	Good	Fair	Poor
	All	0	All	0	0
Comments: Low volume, medium flow from east to west with scour observed upstream and downstream at the time of inspection.					
Performance Deficiencies: 00 – None			Maintenance Needs: 00 – None		
Recommended Work: ☐ Rehab. ☐ Replace ☐ 1 – 5 Years ☐ 6 – 10 Years			Maintenance Needs: ☐ Urgent ☐ 1 Year ☐ 2 Years		

REPAIR AND REHABILITATION REQUIRED			Priority			Estimated Cost
Element Group	Element Name	Type of Work	6 - 10 Years	1 - 5 Years	< 1 Year	
Replace Structure				X		\$ 185,500.00
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
						\$ -
Total Cost						\$ 185,500.00

ASSOCIATED WORK	Comments	Estimated Cost
Approaches		\$ -
Detours		\$ 15,000.00
Traffic Control		\$ -
Utilities		\$ -
Right of Way		\$ -
Environmental Study		\$ 7,000.00
Engineering Design		\$ -
Other		\$ -
Contingencies		\$ -
Total Cost		\$ 22,000.00

JUSTIFICATION



Photo 1: Structure from north approach



Photo 2: Structure from south approach



Photo 3: North approach from structure



Photo 4: South approach from structure



Photo 5: East elevation



Photo 6: West elevation



Photo 7: Typical underside



Photo 8: Typical pier



Photo 9: Gap between barrier panels



Photo 10: Missing piece and checks at timber deck



Photo 11: Underside of structure



Photo 12: Typical beam arrangement



Photo 13: Typical diaphragm



Photo 14: Corrosion at girder



Photo 15: Corrosion at floor beam



Photo 16: Corrosion at floor beam



Photo 17: Honeycombing at pier column



Photo 18: Stream facing east



Photo 19: Stream facing west