


STRUCTURE SUMMARY

Structure Name: Inkerman Bridge					
Road Name:	Queen Street				
Bridge or Culvert:	Bridge				
Site ID:	03-124				
Structure Type:	Slab on Box-Girder (Concrete)				
Owner:	The United Counties of SDG				
Location:	Intersection of McIntosh Road & Queen Street				
					
Year Built:	1964	AADT:	1200	Latitude:	45.03448346
Length:	20.5 (m)	No. of Lanes:	2	Longitude:	-75.39511146
Width:	9.5 (m)	Posted Speed:	50 km/h	Orientation:	North-South
No. of Spans/Cells:	1	% Trucks:	10	Roadway Width:	9 (m)
		Skew Angle:	0 (degrees)	Load Posting:	/ / (t)
Inspection Date:	1-Jun-2023	Inspector(s):	Grace Chang, EIT; Jacobs		
Type of Inspection:	Regular OSIM		Robert Banks; Jacobs		
Significant Findings:	Wearing surface exhibits severe pattern cracks and potholes throughout. Severe spalls with exposed corroded reinforcement and delaminations throughout girders along centreline of structure. Structure requires full replacement within 1 year. Recommended maintenance items include removal of vegetation overgrowth, cleaning of expansion joint seals and replacement of missing end cap on railing. No guide rails or hazard signs present and exposed end walls.				
Recommended Investigations:	Structure Evaluation Roadside safety study				
Recommended Work:	<u>Rehab/Replacement Work</u>		<u>Maintenance Needs</u>		
	Full Replacement		Vegetation Removal		
			Bridge Cleaning		
			Minor railing repairs		

Recommended Work Cost Estimate:	\$ -	Maintenance Needs Cost Estimate:	\$ 3,100.00
Estimated Replacement Cost:	\$ 2,898,849	Overall Condition Rating:	Fair
Estimated Remaining Service Life:	1	Bridge Condition Index (BCI):	62

INVENTORY DATA:

Structure Name	Inkerman Bridge		
Main Highway #		structure	Service(s) on structure: Road Ped.
Location Description	Intersection of McIntosh Road & Queen Street		Service(s) under structure: Non-Navig. Water
Owner/Custodian	The United Counties of SDG		LHRS: LHRS offset:
			Latitude: 45.03448346 Longitude: -75.39511146
MTO Region	Eastern		Heritage Designation:
MTO Area	Ottawa		Hwy Class
Old County	Stormont, Dundas & Glengarry		Posted Speed 50 km/h No. of Lanes 2
Township	North Dundas		AADT 1200 % Trucks 10
Structure Type 1	Slab on Box-Girder (Concrete)		Travel Stream East-West
Structure Material 1	Concrete		Traffic Directional Bound North-South
Structure Type 2			Inspection Route Sequence
Structure Material 2			Inspection Frequency 2 (years)
Total Deck Length	20.5 (m)		Inspection Year 2023
Overall Str. Width	9.5 (m)		Inspection Duration (hrs)
Culvert Length	 (m)		Interchange Number
Total Deck Area	194.75 (sq.m.)		Interchange Structure Number
Roadway Width	9 (m)		Min. Vertical Clearance (m)
Skew Angle	0 (degrees)		Detour Distance (km)
No. of Spans	1		Fill on Structure (m)
Span Lengths	19.5 (m)		
<u>For Retaining Wall:</u>			
Total Wall Length	 (m)		Max Wall Height (m)
Total Wall Area	 (sq.m.)		Ave. Wall Height (m)
			Angle of Backfill (degrees)

HISTORICAL DATA:

Year built	<input type="text" value="1964"/>	Year of Superstruct. Constructed	<input type="text"/>
Last Reg. OSIM Inspection	<input type="text" value="20-Jul-21"/>	Year of Last Minor Rehab.	<input type="text"/>
Last Enh. OSIM Inspection	<input type="text"/>	Year of Last Major Rehab.	<input type="text"/>
	<input type="text"/>	Current Load Limit	<input type="text" value="/ /"/> (tonnes)

Work History:
(Date/description)

Investigation History:
(Date/description)

SCHEDULED IMPROVEMENTS:

Regional Priority Number	<input type="text"/>	Programmed Work Year	<input type="text"/>
Nature of Program Work:			

APPRAISAL INDICES:		Comments
Fatigue	<input type="text"/>	
Seismic	<input type="text"/>	
Scour	<input type="text"/>	
Floor	<input type="text"/>	
Barrier	<input type="text"/>	
Curb	<input type="text"/>	
Load Capacity	<input type="text"/>	

FIELD INSPECTION INFORMATION:			
Date of Inspection:	1-Jun-2023	Type of Inspection:	Regular OSIM
Inspector; Company:	Grace Chang, EIT; Jacobs	Supervising Engineer: Michael Matthews, P.Eng.	
Others in Party:	Robert Banks; Jacobs		
Enh. Access Equipment:			
Special Access Equipment:			
Weather:	Sunny	Temperature:	25 °C

ADDITIONAL INVESTIGATIONS REQUIRED:	Priority			Estimated Cost
	None	Normal	Urgent	
Material Condition Survey				
Detailed Deck Condition Survey:				\$ -
Non-Destructive 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:				\$ -
Seismic Investigation:				\$ -
Structure Evaluation:			x	\$ 40,000.00
Monitoring				
Deformations, Settlements and Movements:				\$ -
Crack Widths:				\$ -
Total Cost				\$ 40,000.00
Investigation Notes:	Roadside safety study recommended			

OVERALL STRUCTURE NOTES	
Recommended Work on Structure:	Replace
Timing of Recommended Work:	1 to 5 Years
Overall Comments:	Wearing surface exhibits severe pattern cracks and potholes throughout. Severe spalls with exposed corroded reinforcement and delaminations throughout girders along centreline of structure. Structure requires full replacement within 1 year. Recommended maintenance items include removal of vegetation overgrowth, cleaning of expansion joint seals and replacement of missing end cap on railing. No guide rails or hazard signs present and exposed end walls.
Date of Next Inspection:	2025 (Year)

ELEMENT DATA

Element Group: Abutments		Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name: Abutment Walls		Type	Timing	Type	Timing	
Environment: MODERATE						
Limited Inspection: NO						
Protection System: None						
Units of Measure: Sq.m.						
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	60.60					
Qty. in Fair Condition:	3.59					
Qty. in Poor Condition:	3.01					
Total Quantity:	67.20					
		Comments		Element Specifications		
		Poor: Hairline to narrow vertical cracks with active wet staining (3.0 sq.m.). Light spall on north wall (0.01 sq.m.). Fair: Efflorescence staining at drain outlets (0.56 sq.m.). Rust staining (0.02 sq.m.). Area associated with poor (3.01 sq.m.). Good: Light scaling typical at waterline.		Location: North and south ends of structure Type: Material: Concrete (Cast-in-Place) Length: m. Width: 11.20 m. Height: 3.00 m. Count: 2.00 Total Qty.: 67.20 Sq.m.		

Element Group: Abutments		Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name: Ballast Walls		Type	Timing	Type	Timing	
Environment: MODERATE						
Limited Inspection: YES						
Protection System: None						
Units of Measure: Sq.m.						
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	22.40					
Qty. in Fair Condition:	0					
Qty. in Poor Condition:	0					
Total Quantity:	22.40					
		Comments		Element Specifications		
		Not visible for inspection due to structure configuration. Assumed to be in good condition.		Location: North and south ends of structure Type: Material: Concrete (Cast-in-Place) Length: m. Width: 11.20 m. Height: 1.00 m. Count: 2.00 Total Qty.: 22.40 Sq.m.		

Element Group: Abutments		Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name: Wingwalls		Type	Timing	Type	Timing	
Environment: BENIGN				13-Erosion Control at Bridges	1 YEAR	
Limited Inspection: YES						
Protection System: None						
Units of Measure: Sq.m.						
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	122.54					
Qty. in Fair Condition:	0.05					
Qty. in Poor Condition:	0.05					
Total Quantity:	122.64					
		Comments		Element Specifications		
		Poor: Light spall in southwest wall (0.05 sq.m.). Fair: Area associated with poor (0.05 sq.m.). Good: Light scaling. Limited visibility of northeast wall due to overgrowth of vegetation.		Location: All four quadrants Type: Material: Concrete (Cast-in-Place) Length: 7.30 m. Width: m. Height: 4.20 m. Count: 4.00 Total Qty.: 122.64 Sq.m.		

Element Group:	Abutments	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Bearings	Type	Timing	Type	Timing	
Environment:	MODERATE					
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Ea.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	34.00					
Qty. in Fair Condition:	0					
Qty. in Poor Condition:	2.00					
Total Quantity:	36.00					
		Comments			Element Specifications	
		Not visible for inspection due to structure configuration. Previous report noted over-compression of bearings at south end with cracking, splitting and bulging.			Location:	Top of abutments
					Type:	Plain Rubber Bearing
					Material:	Other
					Length:	m.
					Width:	m.
					Height:	m.
					Count:	36.00
					Total Qty.:	36.00 Ea.

Element Group:	Approaches	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Wearing Surface	Type	Timing	Type	Timing	
Environment:	SEVERE	REPLACE	1-5 YEARS			
Limited Inspection:	NO					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	0					
Qty. in Fair Condition:	142.1					
Qty. in Poor Condition:	127.9					
Total Quantity:	270.00					
		Comments			Element Specifications	
		Poor: Severe map cracking typical throughout surface (110.0 sq.m.) with integrated severe longitudinal cracks (4.0 sq.m.). Severe alligator cracking and loss of patching material (13.0 sq.m). Severe potholes as a result of loss of repair patches (0.9 sq.m.). Fair: Medium ravelling along road edges (30 sq.m.). Area associated with poor (112.1 sq.m.).			Location:	Approaches
					Type:	Asphalt Wearing Surface
					Material:	Asphalt
					Length:	15.00 m.
					Width:	9.00 m.
					Height:	m.
					Count:	2.00
					Total Qty.:	270.00 Sq.m.

Element Group:	Decks	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Deck Top (with Thin Slab)	Type	Timing	Type	Timing	
Environment:	MODERATE	REPLACE	1-5 YEARS			
Limited Inspection:	YES					
Protection System:	Wearing Surface					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	0					
Qty. in Fair Condition:	37					
Qty. in Poor Condition:	153					
Total Quantity:	190.00					
		Comments			Element Specifications	
		Condition rating is based on the following bottom-up defects: Poor: Pattern cracks (152.0 sq.m.). Potholes (1.0 sq.m.). Fair: Area associated with poor (37.0 sq.m.).			Location:	
					Type:	Deck Top
					Material:	Concrete (Cast-in-Place)
					Length:	20.00 m.
					Width:	9.50 m.
					Height:	m.
					Count:	1.00
					Total Qty.:	190.00 Sq.m.

Element Group:	Decks	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Wearing Surface	Type	Timing	Type	Timing	
Environment:	SEVERE	REPLACE	1-5 YEARS			
Limited Inspection:	NO					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0	Description		Description		Description
Qty. in Good Condition:	0	Replace wearing surface.				
Qty. in Fair Condition:	34.50					
Qty. in Poor Condition:	155.5					
Total Quantity:	190.00					
		Comments			Element Specifications	
		Poor: Severe map cracking throughout (152.0 sq.m.). Very severe ravelling and loss of asphalt at northwest corner (2.5 sq.m.). Severe potholes along northbound lane (1.0 sq.m.). Fair: Area associated with poor (34.5 sq.m.). Good: Light ravelling.			Location: Above structure	
					Type: Asphalt Wearing Surface	
					Material: Asphalt	
					Length: 20.00 m.	
					Width: 9.50 m.	
					Height: m.	
					Count: 1.00	
					Total Qty.: 190.00 Sq.m.	

Element Group:	Decks	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Soffit – Thin Slab	Type	Timing	Type	Timing	
Environment:	MODERATE					
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0	Description		Description		Description
Qty. in Good Condition:	43.08					
Qty. in Fair Condition:	1.76					
Qty. in Poor Condition:	0.04					
Total Quantity:	44.88					
		Comments			Element Specifications	
		Poor: Light spall at joints in all four corners (0.04 sq.m.). Fair: Narrow vertical cracks with efflorescence staining typical throughout fascia and cantilever (1.72 sq.m.). Area associated with poor (0.04 sq.m.). Good: Hairline pattern cracks with efflorescence and wet staining (suspected light AAR) typical throughout fascia. Limited visibility due to structure configuration.			Location: End	
					Type:	
					Material: Concrete (Cast-in-Place)	
					Length: 2.00 m.	
					Width: 10.50 m.	
					Height: 0.36 m.	
					Count: 2.00	
					Total Qty.: 44.88 Sq.m.	

Element Group:	Decks	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Soffit – Thin Slab	Type	Timing	Type	Timing	
Environment:	BENIGN	REPLACE	1-5 YEARS			
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0	Description		Description		Description
Qty. in Good Condition:	72.80	Replace deck.				
Qty. in Fair Condition:	39.6					
Qty. in Poor Condition:	39.6					
Total Quantity:	152.00					
		Comments			Element Specifications	
		Not visible for inspection due to structure configuration. Rated based on condition of girders: Poor: Severe spalls with exposed corroded reinforcement and delaminated areas along entire length of two girders at centreline of structure (39.6 sq.m.). Fair: Area associated with poor (39.6 sq.m.).			Location: Interior	
					Type:	
					Material: Concrete (Cast-in-Place)	
					Length: 16.00 m.	
					Width: 9.50 m.	
					Height: m.	
					Count: 1.00	
					Total Qty.: 152.00 Sq.m.	

Element Group:	Decks	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Soffit – Thin Slab	Type	Timing	Type	Timing	
Environment:	MODERATE					
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	18.06					
Qty. in Fair Condition:	9.46					
Qty. in Poor Condition:	0					
Total Quantity:	27.52					
		Comments		Element Specifications		
		Fair: Narrow vertical cracks with efflorescence staining typical throughout fascia and cantilever (9.46 sq.m.). Good: Hairline pattern cracks with efflorescence and wet staining (suspected light AAR) typical throughout fascia.		Location:	Exterior	
				Type:		
				Material:	Concrete (Cast-in-Place)	
				Length:	16.00 m.	
				Width:	0.50 m.	
				Height:	0.36 m.	
				Count:	2.00	
				Total Qty.:	27.52 Sq.m.	

Element Group:	Beams and Main Longitudinal Elements	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Girders	Type	Timing	Type	Timing	
Environment:	MODERATE	REPLACE	1-5 YEARS			
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	63.60					
Qty. in Fair Condition:	9.6					
Qty. in Poor Condition:	9.6					
Total Quantity:	82.80					
		Comments		Element Specifications		
		Poor: Severe spalls with exposed corroded reinforcement and delaminated areas along entire length of two girders at centreline of structure (9.6 sq.m.). Fair: Area associated with poor (9.6 sq.m.). Previous patch repairs to bottom girder are delaminating or completely spalled off. Top of girders not visible. Only sides of exterior girders are visible.		Location:	End	
				Type:	Prestressed Box Girder	
				Material:	Concrete (Cast-in-Place)	
				Length:	2.00 m.	
				Width:	1.20 m.	
				Height:	0.55 m.	
				Count:	18.00	
				Total Qty.:	82.80 Sq.m.	

Element Group:	Beams and Main Longitudinal Elements	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Girders	Type	Timing	Type	Timing	
Environment:	MODERATE	REPLACE	1-5 YEARS			
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	223.03					
Qty. in Fair Condition:	78.76					
Qty. in Poor Condition:	39.76					
Total Quantity:	341.55					
		Comments		Element Specifications		
		Poor: Severe spalls with exposed corroded reinforcement and delaminated areas along entire length of two girders at centreline of structure (39.6 sq.m.). Localized spalling, some with exposed corroded reinforcement (0.16 sq.m.). Fair: Efflorescent staining along bottom of girders on east and west sides (39.0 sq.m.). Good: Localized hairline cracks, some with efflorescence staining along sides of girders. Top of girders not visible. Only sides of exterior girders are visible.		Location:	Middle	
				Type:	Prestressed Box Girder	
				Material:	Concrete (Cast-in-Place)	
				Length:	16.50 m.	
				Width:	1.20 m.	
				Height:	0.55 m.	
				Count:	9.00	
				Total Qty.:	341.55 Sq.m.	

Element Group:	Barriers	Recommended Work	Maintenance Needs	Suspected Performance Deficiencies
Element Name:	Barrier/ Parapet Walls	Type	Timing	Type
Environment:	SEVERE	Type	Timing	Type
Limited Inspection:	NO	Type	Timing	Type
Protection System:	None	Type	Timing	Type
Units of Measure:	Sq.m.	Description	Description	Description
Qty. in Excellent Condition:	0			
Qty. in Good Condition:	68.38			
Qty. in Fair Condition:	12.96			
Qty. in Poor Condition:	0.06			
Total Quantity:	81.40			
		Comments	Element Specifications	
		Poor: Small localized spalls along east and west walls (0.06 sq.m.). Fair: Localized abrasion due to snow plough (0.4 sq.m.). Narrow cracking with efflorescence staining typical along both walls (12.5 sq.m.). Area associated with poor (0.06 sq.m.). Good: Hairline pattern cracks with wet staining (suspected light AAR) along both east and west walls. Light scaling along base of east and west walls.	Location:	Interior
			Type:	
			Material:	Concrete (Cast-in-Place)
			Length:	37.00 m.
			Width:	0.25 m.
			Height:	0.85 m.
			Count:	2.00
		Total Qty.:	81.40 Sq.m.	

Element Group:	Barriers	Recommended Work	Maintenance Needs	Suspected Performance Deficiencies
Element Name:	Barrier/ Parapet Walls	Type	Timing	Type
Environment:	SEVERE	Type	Timing	Type
Limited Inspection:	NO	Type	Timing	Type
Protection System:	None	Type	Timing	Type
Units of Measure:	Sq.m.	Description	Description	Description
Qty. in Excellent Condition:	0			
Qty. in Good Condition:	54.20			
Qty. in Fair Condition:	8.6			
Qty. in Poor Condition:	0.1			
Total Quantity:	62.90			
		Comments	Element Specifications	
		Poor: Severe delamination along east wall in northeast corner (0.1 sq.m.). Fair: Hairline to narrow cracks with efflorescence staining typical (8.5 sq.m.). Area associated with poor (0.1 sq.m.). Good: Hairline pattern cracks with wet staining (suspected light AAR) along surface of east wall.	Location:	Exterior
			Type:	
			Material:	Concrete (Cast-in-Place)
			Length:	37.00 m.
			Width:	0.25 m.
			Height:	0.85 m.
			Count:	2.00
		Total Qty.:	62.90 Sq.m.	

Element Group:	Barriers	Recommended Work	Maintenance Needs	Suspected Performance Deficiencies
Element Name:	Hand Railings	Type	Timing	Type
Environment:	SEVERE	Type	Timing	Type
Limited Inspection:	NO	Type	Timing	Type
Protection System:	Galvanizing	Type	Timing	Type
Units of Measure:	m.	Description	Description	Description
Qty. in Excellent Condition:	0			
Qty. in Good Condition:	70.80			
Qty. in Fair Condition:	0			
Qty. in Poor Condition:	0			
Total Quantity:	70.80			
		Comments	Element Specifications	
		Missing end cap at northeast end.	Location:	Above parapet walls
			Type:	Single Pipe Hand Rail
			Material:	Steel
			Length:	35.40 m.
			Width:	m.
			Height:	m.
			Count:	2.00
		Total Qty.:	70.80 m.	

Element Group:	Joints	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Armouring/ Retaining Devices	Type	Timing	Type	Timing	
Environment:	SEVERE					
Limited Inspection:	NO					
Protection System:	Galvanizing					
Units of Measure:	m.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	75.00					
Qty. in Fair Condition:	0					
Qty. in Poor Condition:	1					
Total Quantity:	76.00					
		Comments		Element Specifications		
		Poor: Gouging with material loss in south most armouring (1.0 m). Good: Light corrosion typical.		Location:	Expansion joints	
				Type:	Armouring Angle	
				Material:	Steel	
				Length:	9.50 m.	
				Width:	m.	
				Height:	m.	
				Count:	8.00	
				Total Qty.:	76.00 m.	

Element Group:	Joints	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Concrete End Dams	Type	Timing	Type	Timing	
Environment:	SEVERE					
Limited Inspection:	NO					
Protection System:	None					
Units of Measure:	Sq.m					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	15.56					
Qty. in Fair Condition:	0.01					
Qty. in Poor Condition:	0.01					
Total Quantity:	15.58					
		Comments		Element Specifications		
		Poor: Localized light spalls (0.01 sq.m.). Fair: Area associated with poor (0.01 sq.m.). Good: Light scaling typical.		Location:	Expansion joints	
				Type:	End Dam	
				Material:	Concrete (Cast-in-Place)	
				Length:	9.50 m.	
				Width:	0.41 m.	
				Height:	m.	
				Count:	4.00	
				Total Qty.:	15.58 Sq.m	

Element Group:	Joints	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Seals/ Sealants	Type	Timing	Type	Timing	
Environment:	MODERATE					
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Ea.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	2					
Qty. in Fair Condition:	0					
Qty. in Poor Condition:	0					
Total Quantity:	2.00					
		Comments		Element Specifications		
		Joints not visible for inspection due to debris. Assumed to be in good condition.		Location:	Expansion joints	
				Type:	Seal	
				Material:	Other	
				Length:	9.50 m.	
				Width:	m.	
				Height:	m.	
				Count:	2.00	
				Total Qty.:	2.00 Ea.	

Element Group:	Decks	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Drainage System	Type	Timing	Type	Timing	
Environment:	SEVERE	REPLACE	1-5 YEARS			
Limited Inspection:	NO					
Protection System:						
Units of Measure:	Ea.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	0					
Qty. in Fair Condition:	0					
Qty. in Poor Condition:	6					
Total Quantity:	6.00					
		Comments		Element Specifications		
		Poor: Severe to very severe corrosion with perforations and section loss at outlets of all deck drains (6 ea.).		Location:		
				Type:	Scupper and Pipe	
				Material:	Steel	
				Length:		m.
				Width:		m.
				Height:		m.
				Count:		6.00
				Total Qty.:		6.00 Ea.

Element Group:	Sidewalks and Curbs	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Curbs	Type	Timing	Type	Timing	
Environment:	SEVERE					
Limited Inspection:	NO					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	27.75					
Qty. in Fair Condition:	2.87					
Qty. in Poor Condition:	0.09					
Total Quantity:	30.71					
		Comments		Element Specifications		
		Poor: Light spall at north end (0.06 sq.m.) and south end (0.03 sq.m.). Fair: Abrasion due to snow plough along vertical face of curb (2.78 sq.m.). Area associated with poor (0.09 sq.m.). Good: Light scaling.		Location:	East side of structure	
				Type:	Deck Curb	
				Material:	Concrete (Cast-in-Place)	
				Length:		37.00 m.
				Width:		0.68 m.
				Height:		0.15 m.
				Count:		1.00
				Total Qty.:		30.71 Sq.m.

Element Group:	Sidewalks and Curbs	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Sidewalks and Medians	Type	Timing	Type	Timing	
Environment:	SEVERE					
Limited Inspection:	NO					
Protection System:	None					
Units of Measure:	Sq.m.					
Qty. in Excellent Condition:	0					
Qty. in Good Condition:	56.85					
Qty. in Fair Condition:	9.5					
Qty. in Poor Condition:	0.25					
Total Quantity:	66.60					
		Comments		Element Specifications		
		Poor: Severe scaling with one light spall (0.25 sq.m.). Fair: Abrasion due to snow plough along vertical face of curb (5.55 sq.m.). Medium scaling along edge (3.7 sq.m.). Area associated with poor (0.25 sq.m.). Good: Light scaling. Narrow transverse cracks typical.		Location:	West side of structure	
				Type:	Deck Sidewalk	
				Material:	Concrete (Cast-in-Place)	
				Length:		37.00 m.
				Width:		1.65 m.
				Height:		0.15 m.
				Count:		1.00
				Total Qty.:		66.60 Sq.m.

Element Group:	Foundations	Recommended Work	Maintenance Needs	Suspected Performance Deficiencies
Element Name:	Foundation (Below Ground Level)	Type	Type	
Environment:	BENIGN	Timing	Timing	
Limited Inspection:	NO			
Protection System:	None			
Units of Measure:	N/A			
Qty. in Excellent Condition:				
Qty. in Good Condition:				
Qty. in Fair Condition:				
Qty. in Poor Condition:				
Total Quantity:				
		Comments		Element Specifications
		Top footing partially visible at south end. Light scaling typical throughout.		Location: Beneath structure Type: Spread Footing Material: Concrete (Cast-in-Place) Length: m. Width: m. Height: m. Count: 2.00 Total Qty.: N/A
		Description	Description	Description

Element Group:	Embankments and Streams	Recommended Work	Maintenance Needs	Suspected Performance Deficiencies
Element Name:	Embankments	Type	Type	
Environment:	BENIGN	Timing	Timing	
Limited Inspection:	NO			
Protection System:	Vegetation			
Units of Measure:	Ea.			
Qty. in Excellent Condition:	0			
Qty. in Good Condition:	4			
Qty. in Fair Condition:	0			
Qty. in Poor Condition:	0			
Total Quantity:	4.00			
		Comments		Element Specifications
		13-Erosion Control at Bridges		Location: All four quadrants Type: Native Material: Retained Soil Length: m. Width: m. Height: m. Count: 4.00 Total Qty.: 4.00 Ea.
		Remove excess vegetation.		
		Description	Description	Description

Element Group:	Embankments and Streams	Recommended Work	Maintenance Needs	Suspected Performance Deficiencies
Element Name:	Streams and Waterways	Type	Type	
Environment:	BENIGN	Timing	Timing	
Limited Inspection:	NO			
Protection System:	None			
Units of Measure:	All			
Qty. in Excellent Condition:	0			
Qty. in Good Condition:	1.00			
Qty. in Fair Condition:	0			
Qty. in Poor Condition:	0			
Total Quantity:	1.00			
		Comments		Element Specifications
		Flow from west to east. Previous inspection form from 2021 noted shallow stream with small riffle, and cobble lined channel.		Location: Beneath structure Type: Material: Length: m. Width: m. Height: m. Count: 1.00 Total Qty.: 1.00 All
		Description	Description	Description

Element Group:	Accessories incl. Attachments and Signs	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Utilities	Type	Timing	Type	Timing	
Environment:	BENIGN			13-Erosion Control at Bridges	1 YEAR	
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Ea.					
Qty. in Excellent Condition:	0	Description		Description		Description
Qty. in Good Condition:	1			Remove excess vegetation.		
Qty. in Fair Condition:	0					
Qty. in Poor Condition:	0					
Total Quantity:	1.00					
		Comments			Element Specifications	
		Good: Coating loss and light corrosion typical throughout. Vegetation growing over conduit at northeast corner.			Location:	Along east side of bridge
					Type:	Utility conduit
					Material:	Other
					Length:	m.
					Width:	m.
					Height:	m.
					Count:	1.00
					Total Qty.:	1.00 Ea.

Element Group:	Accessories incl. Attachments and Signs	Recommended Work		Maintenance Needs		Suspected Performance Deficiencies
Element Name:	Utilities	Type	Timing	Type	Timing	
Environment:	BENIGN					
Limited Inspection:	YES					
Protection System:	None					
Units of Measure:	Ea.					
Qty. in Excellent Condition:	0	Description		Description		Description
Qty. in Good Condition:	1					
Qty. in Fair Condition:	0					
Qty. in Poor Condition:	0					
Total Quantity:	1.00					
		Comments			Element Specifications	
		Twin conduit pipes embedded in west exterior soffit. Limited inspection due to structure configuration. No significant defects observed.			Location:	
					Type:	Utility conduit
					Material:	Other
					Length:	m.
					Width:	m.
					Height:	m.
					Count:	1.00
					Total Qty.:	1.00 Ea.

REHABILITATION / REPLACEMENT WORK					Priority		
Recommended Work	Units	Quantity	Unit Price	Estimated Cost	Urgent	1-5 Years	6-10 Years
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
Other:			\$ -	\$ -			
Total Cost^{1,2}				\$ -			

MAINTENANCE NEEDS					Priority		
Maintenance Need	Units	Quantity	Unit Price	Estimated Cost	Urgent	1 Year	2 Years
Vegetation Removal	LS	1	\$ 1,000.00	\$ 1,000.00		x	
Bridge Cleaning	LS	1	\$ 1,500.00	\$ 1,500.00		x	
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
	-		\$ -	\$ -			
Other:	Minor railing repairs	LS	1	\$ 600.00	\$ 600.00		x
Total Cost^{1,2}				\$ 3,100.00			

Notes:

1 Excludes excludes grading, paving, electrical work, traffic control, protection system, dewatering, or flow control costs

2 Excludes HST, mobilization and administration costs

Element Group	Element Name	Units of Measure	Total Element Qty.	Unit Replacement Cost	Total Replacement Value (TRV)	Qty. in Excellent (1.0)	Qty. in Good (0.75)	Qty. in Fair (0.4)	Qty. in Poor (0)	Current Element Value (CEV)
Abutments	Abutment Walls	Sq.m.	67.20	\$ 900.00	\$ 60,480.00	0	60.60	3.59	3.01	\$ 42,197.40
Abutments	Ballast Walls	Sq.m.	22.40	\$ 350.00	\$ 7,840.00	0	22.40	0	0	\$ 5,880.00
Abutments	Wingwalls	Sq.m.	122.64	\$ 350.00	\$ 42,924.00	0	122.54	0.05	0.05	\$ 32,173.75
Abutments	Bearings	Ea.	36.00	\$ 1,000.00	\$ 36,000.00	0	34.00	0	2.00	\$ 25,500.00
Approaches	Wearing Surface	Sq.m.	270	\$ 6.00	\$ 1,620.00	0	0	142.1	127.9	\$ 341.04
Decks	Deck Top (with Thin Slab)	Sq.m.	190.00	\$ 120.00	\$ 22,800.00	0	0	37	153	\$ 1,776.00
Decks	Wearing Surface	Sq.m.	190.00	\$ 25.00	\$ 4,750.00	0	0	34.50	155.5	\$ 345.00
Decks	Soffit – Thin Slab	Sq.m.	224.40	\$ 120.00	\$ 26,928.00	0	133.94	50.82	39.64	\$ 14,493.96
Beams and Main Longitudinal Elements	Girders	Sq.m.	424.35	\$ 200.00	\$ 84,870.00	0	286.63	88.36	49.36	\$ 50,063.30
Barriers	Barrier/ Parapet Walls	Sq.m.	144.30	\$ 100.00	\$ 14,430.00	0	122.58	21.56	0.16	\$ 10,055.90
Barriers	Hand Railings	m.	70.80	\$ 100.00	\$ 7,080.00	0	70.80	0	0	\$ 5,310.00
Joints	Armouring/ Retaining Devices	m.	76.00	\$ 1.00	\$ 76.00	0	75.00	0	1	\$ 56.25
Joints	Concrete End Dams	Sq.m	15.58	\$ 2,100.00	\$ 32,718.00	0	15.56	0.01	0.01	\$ 24,515.40
Sidewalks and Curbs	Curbs	Sq.m.	30.71	\$ 40.00	\$ 1,228.40	0	27.75	2.87	0.09	\$ 878.42
Sidewalks and Curbs	Sidewalks and Medians	Sq.m.	66.60	\$ 150.00	\$ 9,990.00	0	56.85	9.5	0.25	\$ 6,965.63
		-			\$ -					\$ -
		-			\$ -					\$ -
		-			\$ -					\$ -
		-			\$ -					\$ -
		-			\$ -					\$ -
Total					\$ 353,734.40					Total \$ 220,552.05
Bridge Condition Index (BCI)										62
Overall Condition Rating										Fair



Photo 1 – Deck cross-section from south approach looking north.



Photo 2 – East elevation of structure.



Photo 3 – Soffit of structure looking south.



Photo 4 – Severe alligator cracking and loss of patching material in approach wearing surface resulting in severe potholes.



Photo 5 – Severe map cracking typical in approach wearing surface.



Photo 6 – Severe map cracking throughout deck wearing surface. Severe potholes in northbound lane.



Photo 7 – Very severe raveling and loss of asphalt in northwest corner of deck wearing surface.



Photo 8 – Small localized spalls typical along east and west parapet wall interior.



Photo 9 – Severe delamination along east parapet wall exterior.



Photo 10 – Missing end cap at northeast end of hand railing.



Photo 11 – Spall at north end of east curb.



Photo 12 – Severe scaling and spall along west sidewalk.



Photo 13 – Severe spalls with exposed corroded reinforcement and delaminated areas along entire length of two girders at centerline of structure.



Photo 14 – Hairline to narrow vertical cracks with wet staining on south abutment wall.



Photo 15 – Severe corrosion with perforations and section loss typical in deck drains.



Photo 16 – Excess vegetation encroaching on wingwall and conduit at northeast quadrant.