




COMMUNICATION UPDATE

TO:	Mayor and Members City Council
DATE:	February 1, 2024
SUBJECT:	Longwood Road Bridge (Bridge 282) Upcoming Reconstruction (ENG24001) (City Wide)
WARD(S) AFFECTED:	City Wide
SUBMITTED BY:	Jackie Kennedy Director, Engineering Services Public Works Department
SIGNATURE:	

The Longwood Road Bridge, approximately 106 metres long, accommodates four lanes of traffic and one pedestrian sidewalk over Highway 403 in the City of Hamilton.

Since its original construction in 1955, the bridge has undergone numerous repairs and structural modifications, notably in 1969, 1998, 2013 and 2016. In 2020, Bridge 282 underwent significant structural evaluations due to observed deteriorations (detailed in Appendix "A" to Communication Update ENG24001). These evaluations indicated the necessity for minor rehabilitative measures, which were not limited to, but included repairs to expansion joints, concrete, asphalt, and waterproofing, as well as addressing issues with delaminated concrete that posed potential risks to traffic lanes Highway 403.

As a result, in 2022, the City carried out a minor rehabilitation of the bridge. This strategy was envisioned as a holding repair strategy aimed at maintaining the bridge's operational safety for the next 10 years. Therefore, it is anticipated that Longwood Road Bridge (Bridge 282) will require a full replacement by 2032, involving the replacement of both the Superstructure and Substructure components of the bridge.

Following the 2022 rehabilitation, the City conducted another inspection as required by the Ontario Structure Inspection Manual 2008 as outlined in Appendix "B" to Communication Update ENG24001, which re-evaluated the bridge's condition. This assessment confirmed the validity of the 10-year holding strategy, which involves replacing the bridge within the next decade.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

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Initially, the Longwood Road bridge was intended to serve as a future access point to the Light Rail Transit Operations, Maintenance and Storage Facility adjacent to the McMaster Innovation Park lands. However, with the recent update in the Light Rail Transit route, it has been determined that the Light Rail Transit will no longer utilize this route, opting instead to operate on Main Street and shifting the run-in track to Frid Street. Consequently, the City is now planning to execute a full replacement of the bridge in 2032.

In line with these revised plans, the City intends to engage a consultant in 2027 to conduct a preliminary design study. This study will encompass cost estimates and explore various options for bridge replacement. Upon completion, the finalized report will be presented to the Council as a Communication Update.

If you require further information, please contact Dipankar Sharma, Manager Infrastructure Renewal, Engineering Services at (905) 546-2424, Extension 3016.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Communication Update ENG24001: BRIDGE 282_2020_OSIM

Appendix "B" to Communication Update ENG24001: BRIDGE 282_2022_OS


**APPENDIX A -
BRIDGE 282_2020_OSIM**



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Inventory Data

Structure Name	LONGWOOD RD S				
Structure Location	Over HWY 403				
Road Number		On <input checked="" type="checkbox"/>	Under <input type="checkbox"/>		
Road Name	Longwood Road				
Watercourse Name					
Crossing Type:	Road <input checked="" type="checkbox"/>	Rail <input type="checkbox"/>	Water <input type="checkbox"/> Navigable waterway <input type="checkbox"/>		
	River <input type="checkbox"/>	Other <input type="checkbox"/>	Creek <input type="checkbox"/> Pedestrian <input type="checkbox"/>		
Hwy Direction					
Owner Category					
Maint. Dist.		Northing	43.258026		
Region	Central	Easting	-79.901932		
District	Central Region	National Highway System			
Ward		Highway Designation			
Township		Hwy Functional Classifica			
Structure Category	Bridge	AADT	22,562	No. of Lanes	4
Main Struct. Subcatg.	Beam/Girder	Trucks (%)		Posted Speed	50
Main Struct. Type	I-beams / Girders	District Bridge Engineer			
Deck Length (Total)	106.40 (m)	Road Authority			
Overall Structure Width	16.70 (m)	Bridge Plan #			
Deck Area (Total)	1,776.88 (Sq.m)	Min. Vertical Clearance		9.30 (m)	
Width (Traffic)	14.40 (m)	Detour Distance		(km)	
Skew Angle		Speed on Detour		(kph)	
Number of Spans	7	Fill Height		(m)	
Total Length / Spans (m)	Total = 105.60; (1) = 14.7; (2) = 15.24; (3) = 15.24; (4) = 15.24; (5) = 15.24; (6) = 15.24; (7) = 14.7				

Historical Data

Year Built	1969	Evaluation Year	
Last Biennial Inspection	October 01, 2020	Current Load Limit	
Last Bridge Master Inspection		Current BCI	67.47
Last Condition Survey		Current BCU	41.50
Last Underwater Inspection		Current SI	12.81

Rehab. History	
2015 - Emergency bridge scaling.	
2015 - EJ repairs.	



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Scheduled Improvements

Regional Priority Number		Programmed Work Year	
Nature of Programmed Work			

Appraisal Indices	Comments
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Load Capacity Index		
Flood Index		
Barrier Index		
Curb Index		
Seismic Index		
Fatigue Index		
Scour Index		
Structure Index		

Suspected Performance Deficiencies

- | | | |
|---|---|------------------------------|
| 00 None | 06 Bearings not uniformly loaded/unstable | 12 Slippery surface |
| 01 Load carrying capacity | 07 Jammed expansion joint | 13 Flooding/channel blockage |
| 02 Excessive deformations (deflections and rotations) | 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 |
| 05 Seized bearings | 11 Deck drainage | |

Maintenance Needs

- | | | |
|--------------------------------------|------------------------------|--|
| 01 Lift and Swing Bridge Maintenance | 07 Structural Steel Repair | 13 Erosion Control at Bridges |
| 02 Bridge Cleaning | 08 Concrete Repair | 14 Concrete Sealing |
| 03 Railing System Repair | 09 Timber Repair | 15 Rout and Seal |
| 04 Painting Steel Bridge Structures | 10 Works for Modular Bridges | 16 Bridge Deck Drainage |
| 05 Bridge Deck Joint Repair | 11 Animal/Pest Control | 17 Scaling (Loose Concrete or ACR Steel) |
| 06 Bridge Bearing Maintenance | 12 Bridge Surface Repair | 18 Other |



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Field Inspection Information

Inspection Date	October 01, 2020	Weather	Clear / Sunny	Temperature	26
Inspector	Morrison Hershfield Ltd.	Firm	Morrison Hershfield		
Others in Party	MH - Scott Quach (P.Eng), Tien Nguyen, Nerujan Sivanesan				
Equipment Used	Digital camera, hammer, measuring tape.				
Access Equipment Used	Ladder <input type="checkbox"/> Boat <input type="checkbox"/> Bucket Truck <input type="checkbox"/> Hip Waders <input type="checkbox"/> Access Key <input type="checkbox"/> Climbing Inspection <input type="checkbox"/> Under Bridge Inspection Unit <input type="checkbox"/>				

Special Notes

Bridge is in P-F condition. Numerous areas of pattern cracks on asphalt, coinciding w/ wet areas on soffit. Severe spall on South EJ @ east end. Severe spall and delam on piers, abutments & sidewalk. Local S spalls on fascia (from conc removal).

Upcoming Inspections and Investigations

Inspection Type	Due Date	Priority	Comment

Recommended Inspections and Investigations

Recommended Inspection Type	Due Date	Priority			Estimated Cost (\$)	Comments
		None	Normal	Urgent		
Material Condition Survey:						
Detailed Deck Condition Survey		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Non-destructive Delamination Survey of Asphalt-Covered Deck		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Concrete Substructure Condition Survey		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Detailed Coating Condition Survey		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Detailed Timber Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Post-Tensioned Strand Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Underwater Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Fatigue Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Seismic Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Structure Evaluation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Monitoring						
Monitoring of Deformations, Settlements and Movements		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Monitoring Crack Widths		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Overall Structure Recommendations:

Work Category	None <input type="checkbox"/>	Minor Rehab <input type="checkbox"/>	Major Rehab <input checked="" type="checkbox"/>	Replacement <input type="checkbox"/>
Timing	None <input type="checkbox"/>	Urgent <input type="checkbox"/>	< 1 year <input type="checkbox"/>	1 - 5 year <input checked="" type="checkbox"/> 6 - 10 year <input type="checkbox"/>
Est. Total Cost	\$ 3,055,080			
Comments	Patch repair on abutment, pier, soffit, approach slab, sidewalk/curbs and barrier wall. Repave approach and deck wearing surface. Construct conc overlay on deck. Recoat end girder and diaphragms. Replace barrier railings and EJ system, all within 1-5years			



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Element Data

Group	Abutments	Length	N/A (m)					
Element	Abutment walls	Width	16.30 (m)					
Span Num		Height	3.00 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	Conventional closed	Quantity	98.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	54.000	32.000	12.000			

Comments CR = 5

S delam @ W end of N abut. Multiple S spalls @ upper W section of south abutment. S delam @ central section of S abut. VS spalls @ E section of S abut. Few M-W stained vertical cracks & local wet stains on both abutments. (Ref Photos: #57-61).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO301 Rehab Concrete (sqm)	Major Rehab	1 - 5 year	12.000	650	7800

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City of Hamilton Bridge Inspection Form

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Element Data

Group	Abutments						Length	N/A (m)
Element	Ballast walls						Width	16.30 (m)
Span Num							Height	0.90 (m)
Material	Cast-in-place concrete						Count	2.00
Type	N/A						Quantity	29.000 (Sq.m)
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>						Not Inspected	<input type="checkbox"/>
Location	North & South Abutments					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	19.000	10.000	0.000			

Comments CR = 3

Local wet staining and few narrow to medium cracks on both ballast walls. Wooden form on south ballast wall behind 3rd girder from east. (Ref Photo: #62).

Performance Deficiencies
0-None

2

Group	Abutments						Length	N/A (m)
Element	Bearings						Width	N/A (m)
Span Num							Height	N/A (m)
Material	N/A						Count	16.00
Type	Rocker						Quantity	16.000 (Each)
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>						Not Inspected	<input type="checkbox"/>
Location	North & South Abutments					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	14.000	2.000	0.000			

Comments CR = 3

Light to medium surface corrosion and M-S tilting of original rocker bearings. Galvanized steel pedestals installed in front of original bearings with no defects evident. (Ref Photos: 63-65)

Performance Deficiencies
0-None

3



City of Hamilton Bridge Inspection Form

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Element Data

Group	Abutments	Length	5.90 (m)					
Element	Wingwalls	Width	N/A (m)					
Span Num		Height	1.40 (m)					
Material	Cast-in-place concrete	Count	4.00					
Type	Reinforced concrete	Quantity	33.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	All Quadrants	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	29.000	4.000	0.000			

Comments CR = 3

Local wet staining and few narrow to medium stained vertical cracks on wingwalls. (Ref Photos: #66-68).

Performance Deficiencies

0-None

4

Group	Approaches	Length	6.00 (m)					
Element	Approach slabs	Width	16.70 (m)					
Span Num		Height	(m)					
Material	Cast-in-place concrete	Count	2.00					
Type	N/A	Quantity	200.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	185.000	12.000	3.000			

Comments CR = 4

Rating is based on the condition of the asphalt wearing surface. Poor quantity assigned due to local area of severe pattern cracks on south approach @ east end of expansion joint, indicating bottom up defects.

Performance Deficiencies

0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO301 Rehab Concrete (sqm)	Major Rehab	1 - 5 year	15.000	650	9750

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Element Data

Group	Approaches	Length	6.00 (m)					
Element	Curb/gutters	Width	N/A (m)					
Span Num		Height	0.14 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	N/A	Quantity	12.000 (m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	NW & SW	Description	width is 0.4m					
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	0.000	9.000	2.000	1.000			

Comments CR = 4

Local medium to wide vertical crack on west curb at end of north approach. (Ref Photo: #33 and 34).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO302 Rehab Concrete (m)	Major Rehab	1 - 5 year	1.000	390	390

6

Group	Approaches	Length	6.00 (m)					
Element	Sidewalk/Curb	Width	1.47 (m)					
Span Num		Height	0.14 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	N/A	Quantity	19.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	NE & SE	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	13.000	4.000	2.000			

Comments CR = 4

Local asphalt patch on east sidewalk at both north and south approaches. VS spall on NE approach curb. Few medium to wide cracks on top of curb face at end of south approach (Ref Photos: #31 and 32).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO301 Rehab Concrete (sqm)	Major Rehab	1 - 5 year	2.000	650	1300

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Element Data

Group	Approaches					Length	6.00 (m)	
Element	Wearing surface					Width	14.40 (m)	
Span Num						Height	(m)	
Material	Asphalt					Count	2.00	
Type	N/A					Quantity	173.000 (Sq.m)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	North & South				Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	131.000	30.000	12.000			

Comments CR = 5

Severe pattern cracks on south approach, adjacent to east end of south expansion joint. Few medium to severe longitudinal and transverse cracks on both approaches. (Ref Photos: #71 and 72).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
AS400 Replace Asphalt w/s Approaches (sq.m)	Replacement	1 - 5 year	173.000	98	16868

8

Group	Barriers					Length	120.50 (m)	
Element	Barrier/Parapet Walls				Interior	Width	N/A (m)	
Span Num						Height	0.81 (m)	
Material	Cast-in-place concrete					Count	2.00	
Type	Parapet Wall with two rails					Quantity	195.000 (Sq.m)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	East & West				Description	includes top of parapet wall		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	159.000	24.000	12.000			

Comments CR = 5

Severe spall & delam on east wall in span 3. W crack & severe delam @ top section of E wall @ N approach. S delam & W crack on top face of W Wall behind Thrie-Beam. Local areas of L-M scaling. (Ref Photos: #31-38).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO201 Repair Concrete (sqm)	Major Rehab	1 - 5 year	12.000	780	9360

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Element Data

Group	Barriers	Length	120.50 (m)					
Element	Barrier/Parapet Walls Exterior	Width	N/A (m)					
Span Num		Height	0.62 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	Parapet Wall with two rails	Quantity	149.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	East & West	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	122.000	20.000	7.000			

Comments CR = 4

Multiple N-M vertical cracks on both barrier walls. Wide vertical cracks at bottom of light pole. Few patched areas on west wall over Hwy 403 median. (Ref Photo: #41).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO301 Rehab Concrete (sqm)	Major Rehab	1 - 5 year	7.000	650	4550

10

Group	Barriers	Length	119.30 (m)					
Element	Hand Railings	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material	Steel	Count	4.00					
Type	Double Railing	Quantity	477.000 (m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	East & West	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	0.000	474.000	3.000	0.000			

Comments CR = 4

Overall light surface corrosion and local areas of light to medium surface corrosion. (Ref Photos: #31-34).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
ST402 Replace Steel (m)	Replacement	1 - 5 year	477.000	780	372060

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Element Data

Group	Beams/MLE's					Length	(m)	
Element	Diaphragms					Width	(m)	
Span Num	End					Height	(m)	
Material	Steel					Count	14.00	
Type	I type					Quantity	14.000 (Sq.m)	
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>					Not Inspected	<input type="checkbox"/>	
Location	North & South Abutments				Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	2.000	7.000	5.000			

Comments CR = 4

Medium to severe corrosion on bottom section of diaphragms at north and south abutments. (Ref Photo: #26). Clean and coat diaphragm ends as part of rehabilitation.

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
ST302 Rehab Steel (m)	Major Rehab	1 - 5 year	14.000	325	4550

12

Group	Beams/MLE's					Length	(m)	
Element	Diaphragms					Width	(m)	
Span Num	Intermediate					Height	(m)	
Material	Steel					Count	55.00	
Type	I type					Quantity	55.000 (Sq.m)	
Env't	Benign <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/>					Not Inspected	<input type="checkbox"/>	
Location	All Spans				Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	55.000	0.000	0.000			

Comments CR = 2

Local areas of light flaking of patina. (Ref Photos: #12-18).

Performance Deficiencies
0-None

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Element Data

Group	Beams/MLE's					Length	4.00 (m)		
Element	Girders					End	Width	0.30 (m)	
Span Num						Height	0.56 (m)		
Material	Steel					Count	8.00		
Type	I type					Quantity	65.000 (Sq.m)		
Env't	Benign <input type="checkbox"/>		Moderate <input checked="" type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>	
Location	North & South Abutment					Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs	
	Sq.m	0.000	40.000	15.000	10.000				

Comments CR = 5

Medium to severe corrosion with delamination of patina at north and south abutment ends. Local perforation @ south end of west exterior girder. (Ref Photo: #25). Clean and coat girder ends as part of rehabilitation.

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
ST301 Rehab Steel (sqm)	Major Rehab	1 - 5 year	65.000	2600	169000

14

Group	Beams/MLE's					Length	102.40 (m)		
Element	Girders					Middle	Width	0.30 (m)	
Span Num						Height	0.56 (m)		
Material	Steel					Count	8.00		
Type	I type					Quantity	1,655.000 (Sq.m)		
Env't	Benign <input checked="" type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>	
Location	All Spans					Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs	
	Sq.m	0.000	1,638.000	17.000	0.000				

Comments CR = 2

Local areas of light patina flaking. Girders are reinforced at abutment ends. (Ref Photo: #12-18).

Performance Deficiencies
0-None

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City of Hamilton Bridge Inspection Form

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Element Data

Group	Coatings	Length	N/A (m)					
Element	Railing Systems / Hand Railings	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material	N/A	Count	N/A					
Type		Quantity	135.000 (m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	West & East Sides	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	0.000	0.000	0.000	135.000			

Comments CR = 4

Coating on the handrail has broken down. (Ref Photos: #31-34).

Performance Deficiencies
0-None

16

Group	Decks	Length	106.40 (m)					
Element	Deck top	Width	16.70 (m)					
Span Num		Height	(m)					
Material	Cast-in-place concrete	Count	N/A					
Type	Cast-in-place concrete on supports	Quantity	1,792.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	All	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	1,577.000	150.000	65.000			

Comments CR = 5

Rating is based on the condition of the asphalt wearing surface.
Poor qty assigned due to several areas of depression & severe pattern cracks on deck wearing surface. Note: Pattern crack and depression areas found coinciding w/ staining area on soffit.

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO303B NC Overlay, w/p, and pave	Major Rehab	1 - 5 year	1792.000	1040	1863680

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City of Hamilton Bridge Inspection Form

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Element Data

Group	Decks	Length	N/A (m)					
Element	Drainage	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material		Count	N/A					
Type		Quantity	2.000 (Each)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location		Description	New Added - 3/5/2021 6:23:11 PM					
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	2.000	0.000	0.000			

Comments CR = 2

Minor accumulation of debris noted in deck drains. (Ref Photo: #27).

Performance Deficiencies

0-None

18

Group	Decks	Length	4.00 (m)					
Element	Soffit - Thin Slab	Width	14.40 (m)					
Span Num		Height	N/A (m)					
Material	Cast-in-place concrete	Count	N/A					
Type	N/A	Quantity	58.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South Abutments	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	34.000	16.000	8.000			

Comments CR = 5

Light delam & spalls on on east fascia @ south abutment. Light spall @ west end of north end soffit. Local wet areas with N-M stained cracks at N&S end soffit. Local light spalling on end soffit behind diaphragms (Ref Photos: #19, 21 and 22).

Performance Deficiencies

0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO304 Rehab deck soffit	Major Rehab	1 - 5 year	8.000	650	5200

19



City of Hamilton Bridge Inspection Form

Struct. ID 282

Element Data

Group	Decks					Length	102.40 (m)	
Element	Soffit - Thin Slab			Exterior		Width	1.12 (m)	
Span Num						Height	N/A (m)	
Material	Cast-in-place concrete					Count	N/A	
Type	N/A					Quantity	115.000 (Sq.m)	
Env't	Benign <input type="checkbox"/>		Moderate <input checked="" type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	West & East Ext Soffit & Fascia				Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	83.000	24.000	8.000			

Comments CR = 5

Light delam and spalls on E fascia near south end of deck. Multiple severe spalls on E fascia in Span 2 and 3. Multiple severe spalls on W fascia in Span 2. Few N-M stained cracks on both exterior soffits (Ref Photos:19&20).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO304 Rehab deck soffit	Major Rehab	1 - 5 year	8.000	650	5200

20

Group	Decks					Length	102.40 (m)	
Element	Soffit - Thin Slab			Interior		Width	13.30 (m)	
Span Num						Height	N/A (m)	
Material	Cast-in-place concrete					Count	N/A	
Type	N/A					Quantity	1,362.000 (Sq.m)	
Env't	Benign <input checked="" type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	All Spans.				Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	1,152.000	150.000	60.000			

Comments CR = 5

Multiple local wet areas and narrow to medium efflorescence stained cracks. Severe spall in span 2 and 3 near the watermain. Light spall on soffit in span 6. (Ref Photos: #12-18, 23 and 24).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO204 Patch deck soffit	Major Rehab	1 - 5 year	3.000	910	2730

21



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Decks					Length	106.40 (m)	
Element	Wearing surface					Width	14.40 (m)	
Span Num						Height	(m)	
Material	Asphalt					Count	N/A	
Type	N/A					Quantity	1,532.000 (Sq.m)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	All Spans.					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	947.000	455.000	130.000			

Comments CR = 4

Multiple areas of M-S pattern cracks with location depression along deck. Multiple sealed trans and longitudinal cracks. Multiple M-S trans/longitudinal cracks. Severe wheel rutting & large asphalt patches in SBLs. (Ref Photos: #3-9).

Performance Deficiencies
9-Rough Riding Surface

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
AS401 Replace Asphalt w/s Approaches (sq.m)	Major Rehab	1 - 5 year	1532.000	156	238992

22

Group	Embankments & Streams					Length	N/A (m)	
Element	Embankments					Width	N/A (m)	
Span Num						Height	N/A (m)	
Material	N/A					Count	N/A	
Type	N/A					Quantity	6.000 (Each)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	All Quadrants & in front of Abut					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	6.000	0.000	0.000			

Comments CR = 2

No scour noted on side slopes. Rip-rap along southeast wingwall. (Ref Photos: #66 and 67).

Performance Deficiencies
0-None

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City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Embankments & Streams	Length	N/A (m)					
Element	Slope protection	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material	N/A	Count	N/A					
Type	Other	Quantity	6.000 (Each)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	All Quadrants & In front of Abut	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	6.000	0.000	0.000			

Comments CR = 2

Rock protection at north abutment. No defects noted. Concrete slope paving noted at south abutment, few medium cracks in concrete. (Ref Photos: #69 to 70).

Performance Deficiencies
0-None

24

Group	Foundations	Length	N/A (m)					
Element	Foundation (below ground level)	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material		Count	N/A					
Type		Quantity	1.000 (N/A)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	Abutments & Piers	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	N/A	0.000	1.000	0.000	0.000			

Comments CR = 2

No observable performance defects noted.

Performance Deficiencies
0-None

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City of Hamilton Bridge Inspection Form

Struct. ID 282

Element Data

Group	Joints					Length	16.70 (m)	
Element	Armoring/retaining devices					Width	N/A (m)	
Span Num						Height	N/A (m)	
Material	Steel					Count	4.00	
Type	N/A					Quantity	67.000 (m)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	North & South					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	0.000	31.000	32.000	4.000			

Comments CR = 5
 Severe dents and abrasion damage from plows on original steel armoring angles at both expansion joint. (Ref Photo: #28-30).

Performance Deficiencies
 0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
JA401 Replace default amouring (m.)	Replacement	1 - 5 year	67.000	1300	87100

26

Group	Joints					Length	14.40 (m)	
Element	Concrete end dams					Width	0.20 (m)	
Span Num						Height	N/A (m)	
Material	Other					Count	4.00	
Type	N/A					Quantity	12.000 (Sq.m)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	North & South					Description	Wabocrete	
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	6.000	4.000	2.000			

Comments CR = 5
 Severely spalled and fragmented concrete end dam at east end of south expansion joint. Visible movement was noted at the spalled section whenever a vehicle crossed it. (Ref Photos: #28-30).

Performance Deficiencies
 9-Rough Riding Surface

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
JE401 Replace End Dams (sq.m.)	Replacement	1 - 5 year	12.000	975	11700

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City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Joints	Length	16.70 (m)					
Element	Seals/sealants	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material	N/A	Count	2.00					
Type	Compression seal	Quantity	2.000 (m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	0.000	0.000	0.000	2.000			

Comments CR = 5

Loose expansion seal noted at the north expansion joint. Wet stains and deterioration on abutment indicates seal could be leaking. (Ref Photo: #28-30).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
JS400 Replace Default Joint Seal (m.)	Replacement	1 - 5 year	2.000	1300	2600

28

Group	Piers	Length	N/A (m)					
Element	Bearings	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material	N/A	Count	36.00					
Type	Elastomeric pad	Quantity	36.000 (Each)					
Env't	Benign <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	At Piers	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	20.000	16.000	0.000			

Comments CR = 2

Few narrow to medium cracks in grout pads. Local wide cracks in grout pad at Pier P4. (Ref Photos: #54-56).

Performance Deficiencies
0-None

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City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Piers	Length	2.00 (m)					
Element	Caps	Width	11.00 (m)					
Span Num		Height	0.80 (m)					
Material	Cast-in-place concrete	Count	6.00					
Type	N/A	Quantity	389.000 (Sq.m)					
Env't	Benign <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	at Piers	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	365.000	20.000	4.000			

Comments CR = 5

Multiple areas of medium to severe spalls concrete on pier cap at pier 2. Local medium delamination on north face of pier cap at pier 6 between west columns. (Ref Photos: #42-49)

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO301 Rehab Concrete (sqm)	Major Rehab	1 - 5 year	4.000	650	2600

30

Group	Piers	Length	2.00 (m)					
Element	Shafts/columns/Pile Bents	Width	1.20 (m)					
Span Num		Height	8.00 (m)					
Material	Cast-in-place concrete	Count	24.00					
Type	Conc rectangular columns with cap beam	Quantity	1,229.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location		Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	880.000	300.000	49.000			

Comments CR = 5

Extensive narrow stained shrinkage cracks on patch repairs at Pier 1 to 3. Multiple areas of severe to very severe delamination and spalling on Pier columns at all piers. (Ref Photos: #42-53).

Performance Deficiencies
0-None

Recommended Work	Category	Timing	Quantity	Unit Cost	Total Cost (\$)
CO301 Rehab Concrete (sqm)	Major Rehab	1 - 5 year	49.000	650	31850

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City of Hamilton Bridge Inspection Form

Struct. ID	282
Element Data	

Group	Sidewalks/curbs					Length	106.40 (m)				
Element	Curbs					Width	0.40 (m)				
Span Num						Height	0.14 (m)				
Material	Cast-in-place concrete					Count	1.00				
Type	N/A					Quantity	57.000 (Sq.m)				
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>			
Location	West side				Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs			
	Sq.m	0.000	51.000	4.000	2.000						
Comments								CR = 5			
Few light spalls and delamination on west curb in span 3, 5 and 7. Local areas of light scaling along curb face. (Ref Photo: #34).											
Performance Deficiencies											
0-None											
Recommended Work											
CO301 Rehab Concrete (sqm)		Category		Timing		Quantity		Unit Cost		Total Cost (\$)	
		Major Rehab		1 - 5 year		2.000		650		1300	
32											

Group	Sidewalks/curbs					Length	106.40 (m)				
Element	Sidewalk and medians					Width	1.47 (m)				
Span Num						Height	0.14 (m)				
Material	Cast-in-place concrete					Count	1.00				
Type	N/A					Quantity	171.000 (Sq.m)				
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>			
Location	East side				Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs			
	Sq.m	0.000	121.000	40.000	10.000						
Comments								CR = 5			
Very severe spall & delam near N end of deck. Wide longitudinal crack near south end of deck. Severe spall & delam w/ asphalt patch in span 6. Few N-M longitudinal cracks at span 3. (Ref Photos: #31,32,39,40)											
Performance Deficiencies											
0-None											
Recommended Work											
CO301 Rehab Concrete (sqm)		Category		Timing		Quantity		Unit Cost		Total Cost (\$)	
		Major Rehab		1 - 5 year		10.000		650		6500	
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City of Hamilton Bridge Inspection Form

Struct. ID 282

Recommended Work (Element Level)

Element	Repair / Rehabilitation	Time					Estimated Cost (\$)
		None	Urgent	≤ 1 year	1 - 5 year	6 - 10 year	
Decks / Wearing surface	AS401 Replace Asphalt w/s Approaches (sq.m)				X		238,992
Decks / Deck top / Cast-in-place concrete on supports	CO303B NC Overlay, w/p, and pave				X		1,863,680
Piers / Shafts/columns/Pile Bents / Conc rectangular columns with	CO301 Rehab Concrete (sqm)				X		31,850
Abutments / Abutment walls / Conventional closed	CO301 Rehab Concrete (sqm)				X		7,800
Approaches / Curb/gutters	CO302 Rehab Concrete (m)				X		390
Approaches / Sidewalk/Curb	CO301 Rehab Concrete (sqm)				X		1,300
Barriers / Hand Railings / Double Railing	ST402 Replace Steel (m)				X		372,060
Beams/ML'E's / Diaphragms / I type	ST302 Rehab Steel (m)				X		4,550
Beams/ML'E's / Girders / I type	ST301 Rehab Steel (sqm)				X		169,000
Decks / Soffit - Thin Slab	CO304 Rehab deck soffit				X		5,200
Decks / Soffit - Thin Slab	CO304 Rehab deck soffit				X		5,200
Decks / Soffit - Thin Slab	CO204 Patch deck soffit				X		2,730
Joints / Concrete end dams	JE401 Replace End Dams (sq.m.)				X		11,700
Joints / Seals/sealants / Compression seal	JS400 Replace Default Joint Seal (m.)				X		2,600
Piers / Caps	CO301 Rehab Concrete (sqm)				X		2,600
Sidewalks/curbs / Curbs	CO301 Rehab Concrete (sqm)				X		1,300
Sidewalks/curbs / Sidewalk and medians	CO301 Rehab Concrete (sqm)				X		6,500
Approaches / Approach slabs	CO301 Rehab Concrete (sqm)				X		9,750
Barriers / Barrier/Parapet Walls / Parapet Wall with two rails	CO301 Rehab Concrete (sqm)				X		4,550
Approaches / Wearing surface	AS400 Replace Asphalt w/s Approaches (sq.m)				X		16,868
Barriers / Barrier/Parapet Walls / Parapet Wall with two rails	CO201 Repair Concrete (sqm)				X		9,360
Joints / Armoring/retaining devices	JA401 Replace default amouring (m.)				X		87,100
Total Cost							2,855,080





City of Hamilton
Bridge Inspection Form

Struct. ID 282		
Recommended Work (Structure Level)		
Associated Work	Comments	Estimated Cost (\$)
Approaches		
Detours		
Other	Access and Protection.	80,000
Traffic Control	Assume 1 lane closed at a time.	120,000
Utilities		
Total Cost		200,000
Grand Total Cost:		\$3,055,080




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description East Elevation		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	General	
File Name	01 East Elevation.JPG		

	Description West Elevation		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	General	
File Name	02 West Elevation.JPG		




City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description		
	Bridge Deck From Southeast Corner. Note: M-S unsealed longitudinal cracks and M-S pattern cracks.		
Elem Grp/Class		Decks/Wearing surface	
Elem Type			
Sub Element			
Material Type		Asphalt	
Locator		General	
Defect Descript1		Poor condition	
Defect Descript2			
Defect		Cracks	
Other			
File Name	03 Bridge Deck From Southeast Corner.JPG		

	Description		
	Bridge Deck From Southwest Corner. Note: Sealed longitudinal cracks and M-S unsealed longitudinal cracks.		
Elem Grp/Class		Decks/Wearing surface	
Elem Type			
Sub Element			
Material Type		Asphalt	
Locator		General	
Defect Descript1		Poor condition	
Defect Descript2			
Defect		Cracks	
Other			
File Name	04 Bridge Deck From Southwest Corner.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description Bridge Deck From Northeast Corner		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Wearing surface Asphalt	
File Name	05 Bridge Deck From Northeast Corner.JPG		

	Description Bridge Deck From Northwest Corner. Note: Large asphalt patches and m-s pattern cracks.		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Wearing surface Asphalt General Poor condition Cracks	
File Name	06 Bridge Deck From Northwest Corner.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description M-S Pattern Cracks on Deck Wearing Surface @ Pier P3, Looking W		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Wearing surface Asphalt General Poor condition Cracks	
File Name	07 M-S Pattern Cracks on Deck Wearing Surface @ Pier P3, Looking W.JPG		

	Description Asphalt Patches, M-S Pattern Cracks & Longit Cracks in SBL (TYP)		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Wearing surface Asphalt Typical Poor condition Cracks	
File Name	08 Asphalt Patches, M-S Pattern Cracks & Longit Cracks in SBL (TYP).JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description Sealed & Unsealed Trans&Longit Cracks @ Pier 3, Looking West		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Wearing surface Asphalt Poor condition Cracks	
File Name	09 Sealed & Unsealed Trans&Longit Cracks @ Pier 3, Looking West.JPG		

	Description West Exterior Soffit at North Abutment, Looking South		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Exterior Cast-in-place concrete General	
File Name	10 West Exterior Soffit at North Abutment, Looking South.jpg		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:02:19</p>	Description		
	East Exterior Soffit at South Abutment, Looking North. Note: Local areas of light delamination on soffit.		
	Elem Grp/Class	Decks/Soffit - Thin Slab	
	Elem Type		
	Sub Element	Exterior	
	Material Type	Cast-in-place concrete	
	Locator	General	
	Defect Descript1	Poor condition	
	Defect Descript2		
	Defect	Delamination	
	Other		
File Name	11 East Exterior Soffit at South Abutment, Looking North.JPG		

 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:35:48</p>	Description		
	Interior Soffit and Girders @ Pier 1, Looking South. Note: N-M efflorescence stained transverse cracks.		
	Elem Grp/Class	Decks/Soffit - Thin Slab	
	Elem Type		
	Sub Element	Interior	
	Material Type	Cast-in-place concrete	
	Locator	General	
	Defect Descript1	Poor condition	
	Defect Descript2		
	Defect	Cracks	
	Other		
File Name	12 Interior Soffit and Girders @ Pier 1, Looking South.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description Interior Soffit and Girders @ Pier 1, Looking North. Note: N-M efflorescence stained transverse cracks.		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Interior Cast-in-place concrete General Poor condition Transverse Cracks	
File Name	13 Interior Soffit and Girders @ Pier 1, Looking North.JPG		

	Description Interior Soffit and Girders @ Pier 3, Looking South. Note: N-M efflorescence stained transverse cracks.		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Interior Cast-in-place concrete General Poor condition Transverse Cracks	
File Name	14 Interior Soffit and Girders @ Pier 3, Looking South.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:40:14</p>	Description		
	Interior Soffit at Pier 3, Looking North. Note: N-M efflorescence stained transverse cracks.		
	Elem Grp/Class	Decks/Soffit - Thin Slab	
	Elem Type	Interior	
	Sub Element	Cast-in-place concrete	
	Material Type	General	
	Locator	Poor condition	
	Defect Descript1	Cracks	
	Defect Descript2		
	Defect		
	Other		
File Name	15 Interior Soffit at Pier 3, Looking North.JPG		

 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:28:25</p>	Description		
	Interior Soffit and Girders at Pier 4 (Span 5), Looking West. Note: N-M transverse cracks.		
	Elem Grp/Class	Decks/Soffit - Thin Slab	
	Elem Type	Interior	
	Sub Element	Cast-in-place concrete	
	Material Type	General	
	Locator	Poor condition	
	Defect Descript1	Cracks	
	Defect Descript2		
	Defect		
	Other		
File Name	16 Interior Soffit and Girders at Pier 4 (Span 5), Looking West.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description Interior Soffit and Girders at Pier 6, Looking South. Note: Local wet areas and N-M stained cracks.		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Interior Cast-in-place concrete General Poor condition Cracks	
File Name	17 Interior Soffit and Girders at Pier 6, Looking South.JPG		

	Description Interior Soffit and Girders at Pier 7, Looking North. Note: N-M stained cracks on soffit.		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Interior Cast-in-place concrete General Poor condition Cracks	
File Name	18 Interior Soffit and Girders at Pier 7, Looking North.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description Delams & Spalls on West Fascia @ South Abut, looking North		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab End Cast-in-place concrete Poor condition Delamination	
File Name	19 Delams & Spalls on West Fascia @ South Abut, looking North.JPG		

	Description Severe Spalls on East Fascia Over Hwy 403 EB		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Exterior Cast-in-place concrete Poor condition Spalling	
File Name	20 Severe Spalls on East Fascia Over Hwy 403 EB.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID	282																	
	<p>Description N-M Wet Stained Diagonal Crack @ SW Corner of Soffit</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td>End</td> </tr> <tr> <td>Sub Element</td> <td>End</td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td></td> </tr> <tr> <td>Defect Descript1</td> <td>Poor condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Cracks</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type	End	Sub Element	End	Material Type	Cast-in-place concrete	Locator		Defect Descript1	Poor condition	Defect Descript2		Defect	Cracks	Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type	End																	
Sub Element	End																	
Material Type	Cast-in-place concrete																	
Locator																		
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Cracks																	
Other																		
File Name	21 N-M Wet Stained Diagonal Crack @ SW Corner of Soffit.JPG																	

	<p>Description Light Spall & N-M Stain Crack @ NW Corner of Soffit in Span 7</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td>End</td> </tr> <tr> <td>Sub Element</td> <td>End</td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td></td> </tr> <tr> <td>Defect Descript1</td> <td>Poor condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Spalling</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type	End	Sub Element	End	Material Type	Cast-in-place concrete	Locator		Defect Descript1	Poor condition	Defect Descript2		Defect	Spalling	Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type	End																	
Sub Element	End																	
Material Type	Cast-in-place concrete																	
Locator																		
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Spalling																	
Other																		
File Name	22 Light Spall & N-M Stain Crack @ NW Corner of Soffit in Span 7.JPG																	



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description Severe Spall @ Central NW Section in Span 2 over Hwy 403EB	
Elem Grp/Class	Decks/Soffit - Thin Slab
Elem Type	Interior
Sub Element	Cast-in-place concrete
Material Type	
Locator	
Defect Descript1	Poor condition
Defect Descript2	
Defect	Spalling
Other	

File Name 23 Severe Spall @ Central NW Section in Span 2 over Hwy 403EB.JPG





Description N-M Efflorescence Stained Transverse Cracks in Span 2 (TYP)	
Elem Grp/Class	Decks/Soffit - Thin Slab
Elem Type	Interior
Sub Element	Cast-in-place concrete
Material Type	
Locator	Typical
Defect Descript1	Poor condition
Defect Descript2	Transverse
Defect	Cracks
Other	

File Name 24 N-M Efflorescence Stained Transverse Cracks in Span 2 (TYP).JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description		
	M-S Corrosion (TYP) & Local Perforation @ S End of West Girder		
	Elem Grp/Class	Beams/MLE's/Girders	
	Elem Type	I type	
	Sub Element	End	
	Material Type	Steel	
	Locator		
	Defect Descript1	Poor condition	
	Defect Descript2		
	Defect	Corrosion	
	Other		
File Name	25 M-S Corrosion (TYP) & Local Perforation @ S End of West Girder.JPG		

	Description		
	Severe Corrosion @ S Abut Diaphragm Btwn Girders 2&3 from East		
	Elem Grp/Class	Beams/MLE's/Diaphragms	
	Elem Type	I type	
	Sub Element	End	
	Material Type	Steel	
	Locator		
	Defect Descript1	Poor condition	
	Defect Descript2		
	Defect	Corrosion	
	Other		
File Name	26 Severe Corrosion @ S Abut Diaphragm Btwn Girders 2&3 from East.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282																	
	<p>Description</p> <p>Deck Drain with Basin at Deck Surface at Span 5, East Drain Shown. Note: Debris filled in deck drain.</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 2px;">Elem Grp/Class</td> <td style="padding: 2px;">Decks/Drainage</td> </tr> <tr> <td style="padding: 2px;">Elem Type</td> <td></td> </tr> <tr> <td style="padding: 2px;">Sub Element</td> <td></td> </tr> <tr> <td style="padding: 2px;">Material Type</td> <td></td> </tr> <tr> <td style="padding: 2px;">Locator</td> <td></td> </tr> <tr> <td style="padding: 2px;">Defect Descript1</td> <td style="padding: 2px;">Good condition</td> </tr> <tr> <td style="padding: 2px;">Defect Descript2</td> <td></td> </tr> <tr> <td style="padding: 2px;">Defect</td> <td></td> </tr> <tr> <td style="padding: 2px;">Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Drainage	Elem Type		Sub Element		Material Type		Locator		Defect Descript1	Good condition	Defect Descript2		Defect		Other
Elem Grp/Class	Decks/Drainage																	
Elem Type																		
Sub Element																		
Material Type																		
Locator																		
Defect Descript1	Good condition																	
Defect Descript2																		
Defect																		
Other																		
File Name	27 Deck Drain with Basin at Deck Surface at Span 5, East Drain Shown.JPG																	

	<p>Description</p> <p>South Expansion Joint, Looking West. Note: Severe spalling on end dam.</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 2px;">Elem Grp/Class</td> <td style="padding: 2px;">Joints/Concrete end dams</td> </tr> <tr> <td style="padding: 2px;">Elem Type</td> <td></td> </tr> <tr> <td style="padding: 2px;">Sub Element</td> <td></td> </tr> <tr> <td style="padding: 2px;">Material Type</td> <td style="padding: 2px;">Other</td> </tr> <tr> <td style="padding: 2px;">Locator</td> <td style="padding: 2px;">General</td> </tr> <tr> <td style="padding: 2px;">Defect Descript1</td> <td style="padding: 2px;">Poor condition</td> </tr> <tr> <td style="padding: 2px;">Defect Descript2</td> <td></td> </tr> <tr> <td style="padding: 2px;">Defect</td> <td style="padding: 2px;">Spalling</td> </tr> <tr> <td style="padding: 2px;">Other</td> <td></td> </tr> </table>	Elem Grp/Class	Joints/Concrete end dams	Elem Type		Sub Element		Material Type	Other	Locator	General	Defect Descript1	Poor condition	Defect Descript2		Defect	Spalling	Other
Elem Grp/Class	Joints/Concrete end dams																	
Elem Type																		
Sub Element																		
Material Type	Other																	
Locator	General																	
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Spalling																	
Other																		
File Name	28 South Expansion Joint, Looking West.JPG																	



City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description North Expansion Joint, Looking East. Note: Dents in steel armoring.		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Joints/Armoring/retaining device Steel Poor condition Damaged	
File Name	29 North Expansion Joint, Looking East.JPG		

	Description Loose Seal @ Central Section of North EJ and Dents in steel armoring.		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Joints/Seals/sealants Compression seal Poor condition Damaged	
File Name	30 Loose Seal @ Central Section of North EJ.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description
East Parapet Wall and Sidewalk, Looking North. Note: N-M cracks and local staining on barrier walls.

Elem Grp/Class	Barriers/Barrier/Parapet Walls
Elem Type	Parapet Wall with two rails
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	Fair condition
Defect Descript2	
Defect	Staining
Other	

File Name 31 East Parapet Wall and Sidewalk, Looking North.JPG



Description
East Parapet Wall and Sidewalk, Looking South. Note: Very severe delamination along top section of barrier wall.

Elem Grp/Class	Barriers/Barrier/Parapet Walls
Elem Type	Parapet Wall with two rails
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	Poor condition
Defect Descript2	
Defect	Delamination
Other	

File Name 32 East Parapet Wall and Sidewalk, Looking South.JPG



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description West Parapet Wall, Looking North. Note: Local areas of light to medium scaling.	
Elem Grp/Class	Barriers/Barrier/Parapet Walls
Elem Type	Parapet Wall with two rails
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	Fair condition
Defect Descript2	
Defect	Scaling
Other	

File Name 33 West Parapet Wall, Looking North.JPG



Description West Parapet Wall, Looking South. Note: Wide crack on curb face at end of approach slab.	
Elem Grp/Class	Barriers/Barrier/Parapet Walls
Elem Type	Parapet Wall with two rails
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	Poor condition
Defect Descript2	
Defect	Cracks
Other	

File Name 34 West Parapet Wall, Looking South.JPG



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description Severe Spall and Delam on East Wall in North Section of Span 3	
Elem Grp/Class	Barriers/Barrier/Parapet Walls
Elem Type	Parapet Wall with two rails
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	
Defect Descript1	Poor condition
Defect Descript2	
Defect	Spalling
Other	

File Name 35 Severe Spall and Delam on East Wall in North Section of Span 3.JPG





Description Delam on W Wall behind Thrie-Beam @ S Section of N Span 7 (TYP)	
Elem Grp/Class	Barriers/Barrier/Parapet Walls
Elem Type	Parapet Wall with two rails
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	
Defect Descript1	Poor condition
Defect Descript2	
Defect	Delamination
Other	

File Name 37 Delam on W Wall behind Thrie-Beam @ S Section of N Span 7 (TYP).JPG



City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description Wide Crack on Top Face of West Wall Over Hwy 403 WB		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Barriers/Barrier/Parapet Walls Parapet Wall with two rails Interior Cast-in-place concrete Poor condition Cracks	
File Name		38 Wide Crack on Top Face of West Wall Over Hwy 403 WB.JPG	

	Description Wide Longitudinal Crack on East Sidewalk near South End of Deck (TYP)		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Sidewalks/curbs/Sidewalk and Cast-in-place concrete Typical Poor condition Cracks	
File Name		39 Wide Longitudinal Crack on East Sidewalk near South End of Deck (TYP).JPG	



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description Very Severe Spall & Delam on East Curb @ North End of Deck	
Elem Grp/Class	Sidewalks/curbs/Sidewalk and
Elem Type	
Sub Element	
Material Type	Cast-in-place concrete
Locator	
Defect Descript1	Poor condition
Defect Descript2	
Defect	Spalling
Other	

File Name 40 Very Severe Spall & Delam on East Curb @ North End of Deck.JPG



Description Wide Vertical Cracks on Bottom of Light Pole over Hwy 403 Median	
Elem Grp/Class	Barriers/Barrier/Parapet Walls
Elem Type	Parapet Wall with two rails
Sub Element	Exterior
Material Type	Cast-in-place concrete
Locator	
Defect Descript1	Poor condition
Defect Descript2	
Defect	Cracks
Other	

File Name 41 Wide Vertical Cracks on Bottom of Light Pole over Hwy 403 Median.JPG



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description South Elevation of Pier 1. Note: Narrow stained shrinkage cracks on patch repairs.	
Elem Grp/Class	Piers/Shfts/columns/Pile Bent
Elem Type	Conc rectangular columns with
Sub Element	
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	Fair condition
Defect Descript2	
Defect	Cracks
Other	

File Name 42 South Elevation of Pier 1.JPG





Description South Elevation of Pier 2. Note: Narrow stained shrinkage cracks.	
Elem Grp/Class	Piers/Shfts/columns/Pile Bent
Elem Type	Conc rectangular columns with
Sub Element	
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	Fair condition
Defect Descript2	
Defect	Cracks
Other	

File Name 43 South Elevation of Pier 2.JPG



City of Hamilton Bridge Inspection Form

Struct. ID	282		
 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:37:02</p>		Description North Elevation of Pier 3. Note: Narrow stained shrinkage cracks on patch repairs.	
		Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Shfts/columns/Pile Bent Conc rectangular columns with Cast-in-place concrete General Fair condition Cracks
File Name	44 North Elevation of Pier 3.JPG		

 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:33:54</p>		Description North Elevation of Pier 4. Note: Very severe spalls on pier column.	
		Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Shfts/columns/Pile Bent Conc rectangular columns with Cast-in-place concrete General Poor condition Spalling
File Name	45 North Elevation of Pier 4.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description
South Elevation of Pier 5. Note: Local severe spall on 2nd column from west.

Elem Grp/Class	Piers/Shfts/columns/Pile Bent
Elem Type	Conc rectangular columns with
Sub Element	
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	Poor condition
Defect Descript2	
Defect	Spalling
Other	

File Name 46 South Elevation of Pier 5.JPG




Description
South Elevation of Pier 6. Note: Graffiti on pier columns.


Elem Grp/Class	Piers/Shfts/columns/Pile Bent
Elem Type	Conc rectangular columns with
Sub Element	
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	
Defect Descript2	
Defect	
Other	

File Name 47 South Elevation of Pier 6.JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282																	
 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:29:44</p>	<p>Description M-S Spalls on South Face of Pier 2 Columns and Cap</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Elem Grp/Class</td> <td>Piers/Caps</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td></td> </tr> <tr> <td>Defect Descript1</td> <td>Poor condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Spalling</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Piers/Caps	Elem Type		Sub Element		Material Type	Cast-in-place concrete	Locator		Defect Descript1	Poor condition	Defect Descript2		Defect	Spalling	Other
Elem Grp/Class	Piers/Caps																	
Elem Type																		
Sub Element																		
Material Type	Cast-in-place concrete																	
Locator																		
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Spalling																	
Other																		
File Name	48 M-S Spalls on South Face of Pier 2 Columns and Cap.JPG																	

 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:37:29</p>	<p>Description Severe Spalls on N Face of Pier 2 Columns and Cap</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Elem Grp/Class</td> <td>Piers/Caps</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td></td> </tr> <tr> <td>Defect Descript1</td> <td>Poor condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Spalling</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Piers/Caps	Elem Type		Sub Element		Material Type	Cast-in-place concrete	Locator		Defect Descript1	Poor condition	Defect Descript2		Defect	Spalling	Other
Elem Grp/Class	Piers/Caps																	
Elem Type																		
Sub Element																		
Material Type	Cast-in-place concrete																	
Locator																		
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Spalling																	
Other																		
File Name	49 Severe Spalls on N Face of Pier 2 Columns and Cap.JPG																	



City of Hamilton Bridge Inspection Form

Struct. ID	282		
 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:40:36</p>	Description		
	Very Severe Delam on Column 4 From West @ Pier P3 (TYP)		
Elem Grp/Class	Piers/Shfts/columns/Pile Bent	Elem Type	Conc rectangular columns with
Sub Element		Material Type	Cast-in-place concrete
Locator		Defect Descript1	Poor condition
Defect Descript2		Defect	Delamination
Other			
File Name	51 Very Severe Delam on Column 4 From West @ Pier P3 (TYP).JPG		

 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:32:47</p>	Description		
	Very Severe Spalls on South & West Face of Column @ Pier 4 (TYP).		
Elem Grp/Class	Piers/Shfts/columns/Pile Bent	Elem Type	Conc rectangular columns with
Sub Element		Material Type	Cast-in-place concrete
Locator		Defect Descript1	Poor condition
Defect Descript2		Defect	Spalling
Other			
File Name	52 Very Severe Spalls on South & West Face of Column @ Pier 4 (TYP).JPG		



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description Severe Delam on North Face of Column 2 From West @ Pier P6	
Elem Grp/Class	Piers/Shfts/columns/Pile Bent
Elem Type	Conc rectangular columns with
Sub Element	
Material Type	Cast-in-place concrete
Locator	
Defect Descript1	Poor condition
Defect Descript2	
Defect	Delamination
Other	

File Name 53 Severe Delam on North Face of Column 2 From West @ Pier P6.JPG





Description Typical Guide Assembly at Piers P1, P2, P3, P5, & P6, Pier 6 Shown	
Elem Grp/Class	Piers/Bearings
Elem Type	Elastomeric pad
Sub Element	
Material Type	
Locator	General
Defect Descript1	
Defect Descript2	
Defect	
Other	

File Name 54 Typical Guide Assembly at Piers P1, P2, P3, P5, & P6, Pier 6 Shown.JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282																	
	<p>Description Typical Expansion Bearing, Pier 6 Bearing Shown. Note: Narrow to medium cracks in grout pad.</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Piers/Bearings</td> </tr> <tr> <td>Elem Type</td> <td>Elastomeric pad</td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td></td> </tr> <tr> <td>Locator</td> <td>General</td> </tr> <tr> <td>Defect Descript1</td> <td>Fair condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Cracks</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Piers/Bearings	Elem Type	Elastomeric pad	Sub Element		Material Type		Locator	General	Defect Descript1	Fair condition	Defect Descript2		Defect	Cracks	Other
Elem Grp/Class	Piers/Bearings																	
Elem Type	Elastomeric pad																	
Sub Element																		
Material Type																		
Locator	General																	
Defect Descript1	Fair condition																	
Defect Descript2																		
Defect	Cracks																	
Other																		
File Name	55 Typical Expansion Bearing, Pier 6 Bearing Shown.JPG																	

	<p>Description Typical Fixed Bearing at Pier 4. Note: Wide cracks in grout pad.</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Piers/Bearings</td> </tr> <tr> <td>Elem Type</td> <td>Elastomeric pad</td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td></td> </tr> <tr> <td>Locator</td> <td>General</td> </tr> <tr> <td>Defect Descript1</td> <td>Fair condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Cracks</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Piers/Bearings	Elem Type	Elastomeric pad	Sub Element		Material Type		Locator	General	Defect Descript1	Fair condition	Defect Descript2		Defect	Cracks	Other
Elem Grp/Class	Piers/Bearings																	
Elem Type	Elastomeric pad																	
Sub Element																		
Material Type																		
Locator	General																	
Defect Descript1	Fair condition																	
Defect Descript2																		
Defect	Cracks																	
Other																		
File Name	56 Typical Fixed Bearing at Pier 4.JPG																	




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description		
	South Abutment, Looking East. Note: Severe spalls on top section of abutment.		
	Elem Grp/Class	Abutments/Abutment walls	
	Elem Type	Conventional closed	
	Sub Element		
	Material Type	Cast-in-place concrete	
	Locator	General	
	Defect Descript1	Poor condition	
	Defect Descript2		
	Defect	Spalling	
	Other		
File Name	57 South Abutment, Looking East.JPG		

	Description		
North Abutment, Looking West. Note: Graffiti markings.			
	Elem Grp/Class	Abutments/Abutment walls	
	Elem Type	Conventional closed	
	Sub Element		
	Material Type	Cast-in-place concrete	
	Locator	General	
	Defect Descript1		
	Defect Descript2		
	Defect		
	Other		
File Name	58 North Abutment, Looking West.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description		
	Very Severe Spall @ East Section of South Abutment		
Elem Grp/Class	Abutments/Abutment walls	Elem Type	Conventional closed
Sub Element		Material Type	Cast-in-place concrete
Locator		Defect Descript1	Poor condition
Defect Descript2		Defect	Spalling
Other			
File Name	59 Very Severe Spall @ East Section of South Abutment.JPG		

	Description		
	Severe Shallow Spalls @ West Section of South Abutment		
Elem Grp/Class	Abutments/Abutment walls	Elem Type	Conventional closed
Sub Element		Material Type	Cast-in-place concrete
Locator		Defect Descript1	Poor condition
Defect Descript2		Defect	Spalling
Other			
File Name	60 Severe Shallow Spalls @ West Section of South Abutment.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description Severe Delam @ West End of North Abutment.	
Elem Grp/Class	Abutments/Abutment walls
Elem Type	Conventional closed
Sub Element	
Material Type	Cast-in-place concrete
Locator	
Defect Descript1	Poor condition
Defect Descript2	
Defect	Delamination
Other	

File Name 61 Severe Delam @ West End of North Abutment.JPG





Description Wooden Form on South Ballast Wall & Spalls on Soffit below EJ	
Elem Grp/Class	Decks/Soffit - Thin Slab
Elem Type	
Sub Element	End
Material Type	Cast-in-place concrete
Locator	
Defect Descript1	Poor condition
Defect Descript2	
Defect	Spalling
Other	

File Name 62 Wooden Form on South Ballast Wall & Spalls on Soffit below EJ.JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282																	
 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:02:11</p>	<p>Description South Abutment Bearing (East Bearing Shown). Note: Light to medium surface corrosion on original bearing.</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Abutments/Bearings</td> </tr> <tr> <td>Elem Type</td> <td>Rocker</td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td></td> </tr> <tr> <td>Locator</td> <td>General</td> </tr> <tr> <td>Defect Descript1</td> <td>Fair condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Corrosion</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Abutments/Bearings	Elem Type	Rocker	Sub Element		Material Type		Locator	General	Defect Descript1	Fair condition	Defect Descript2		Defect	Corrosion	Other
Elem Grp/Class	Abutments/Bearings																	
Elem Type	Rocker																	
Sub Element																		
Material Type																		
Locator	General																	
Defect Descript1	Fair condition																	
Defect Descript2																		
Defect	Corrosion																	
Other																		
File Name	63 South Abutment Bearing (East Bearing Shown).JPG																	

 <p style="text-align: right; color: orange; font-size: small;">2020/10/01 13:10:35</p>	<p>Description North Abutment Bearing (West Bearing Shown). Note: L-M surface corrosion on original bearing, reinforced girder ends and graffiti markings.</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Abutments/Bearings</td> </tr> <tr> <td>Elem Type</td> <td>Rocker</td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td></td> </tr> <tr> <td>Locator</td> <td>General</td> </tr> <tr> <td>Defect Descript1</td> <td>Fair condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Corrosion</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Abutments/Bearings	Elem Type	Rocker	Sub Element		Material Type		Locator	General	Defect Descript1	Fair condition	Defect Descript2		Defect	Corrosion	Other
Elem Grp/Class	Abutments/Bearings																	
Elem Type	Rocker																	
Sub Element																		
Material Type																		
Locator	General																	
Defect Descript1	Fair condition																	
Defect Descript2																		
Defect	Corrosion																	
Other																		
File Name	64 North Abutment Bearing (West Bearing Shown).JPG																	



City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description	Tilting of Orig Rocker Bearing @ Girder 2 from W @ N Abut(TYP)	
	Elem Grp/Class	Abutments/Bearings	
Elem Type	Rocker		
Sub Element			
Material Type			
Locator			
Defect Descript1	Fair condition		
Defect Descript2			
Defect			
Other			
File Name	65 Tilting of Orig Rocker Bearing @ Girder 2 from W @ N Abut(TYP).JPG		

	Description	Southeast Wingwall. Note: Wet staining.	
	Elem Grp/Class	Abutments/Wingwalls	
Elem Type	Reinforced concrete		
Sub Element			
Material Type	Cast-in-place concrete		
Locator	General		
Defect Descript1	Fair condition		
Defect Descript2			
Defect	Staining		
Other			
File Name	66 Southeast Wingwall.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description Northwest Wingwall. Note: Wet staining and graffiti markings.	
Elem Grp/Class	Abutments/Wingwalls
Elem Type	Reinforced concrete
Sub Element	
Material Type	Cast-in-place concrete
Locator	General
Defect Descript1	Fair condition
Defect Descript2	
Defect	Staining
Other	

File Name 67 Northwest Wingwall.JPG





Description Narrow Wet Stained Vertical Cracks and Wet Staining on SW Wingwall	
Elem Grp/Class	Abutments/Wingwalls
Elem Type	Reinforced concrete
Sub Element	
Material Type	Cast-in-place concrete
Locator	
Defect Descript1	Fair condition
Defect Descript2	
Defect	Cracks
Other	

File Name 68 Narrow Wet Stained Cracks and Wet Staining on SW Wingwall.JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282		
 <p style="text-align: right; font-size: small; color: orange;">2020/10/01 12:59:47</p>	Description		
	Concrete Slope Paving on South Embankment. Note: Few medium cracks.		
	Elem Grp/Class	Embankments & Streams/Slop	
	Elem Type	Other	
	Sub Element		
	Material Type		
	Locator	General	
	Defect Descript1	Good condition	
	Defect Descript2		
	Defect	Cracks	
	Other		
File Name	69 Concrete Slope Paving on South Embankment.JPG		

 <p style="text-align: right; font-size: small; color: orange;">2020/10/01 12:58:59</p>	Description		
	Rock Slope Protection @ North Embankment		
	Elem Grp/Class	Embankments & Streams/Slop	
	Elem Type	Other	
	Sub Element		
	Material Type		
	Locator	General	
	Defect Descript1		
	Defect Descript2		
	Defect		
	Other		
File Name	70 Rock Slope Protection @ North Embankment.JPG		




City of Hamilton Bridge Inspection Form

Struct. ID	282																	
	<p>Description South Approach. Note: M-S Pattern and longitudinal cracks. Severe spalling of end dam.</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Approaches/Wearing surface</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td>Asphalt</td> </tr> <tr> <td>Locator</td> <td>General</td> </tr> <tr> <td>Defect Descript1</td> <td>Poor condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Cracks</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Approaches/Wearing surface	Elem Type		Sub Element		Material Type	Asphalt	Locator	General	Defect Descript1	Poor condition	Defect Descript2		Defect	Cracks	Other
Elem Grp/Class	Approaches/Wearing surface																	
Elem Type																		
Sub Element																		
Material Type	Asphalt																	
Locator	General																	
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Cracks																	
Other																		
File Name	71 South Approach.JPG																	

	<p>Description North Approach. Note: M-S longitudinal cracks on wearing surface.</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Approaches/Wearing surface</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td>Asphalt</td> </tr> <tr> <td>Locator</td> <td>General</td> </tr> <tr> <td>Defect Descript1</td> <td>Poor condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Cracks</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Approaches/Wearing surface	Elem Type		Sub Element		Material Type	Asphalt	Locator	General	Defect Descript1	Poor condition	Defect Descript2		Defect	Cracks	Other
Elem Grp/Class	Approaches/Wearing surface																	
Elem Type																		
Sub Element																		
Material Type	Asphalt																	
Locator	General																	
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Cracks																	
Other																		
File Name	72 North Approach.JPG																	



City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description L-M Scaling on East Wall Near South End of Deck		
	Elem Grp/Class	Barriers/Barrier/Parapet Walls	
Elem Type	Parapet Wall with two rails		
Sub Element	Interior		
Material Type	Cast-in-place concrete		
Locator			
Defect Descript1	Fair condition		
Defect Descript2			
Defect	Scaling		
Other			
File Name	36 L-M Scaling on East Wall Near South End of Deck.JPG		



City of Hamilton
Bridge Inspection Form

Struct. ID	282
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**APPENDIX B -
BRIDGE 282_2022_OSIM**



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Inventory Data

Structure Name	LONGWOOD RD S				
Structure Location	Over HWY 403				
Road Number		On <input type="checkbox"/>	Under <input checked="" type="checkbox"/>		
Road Name	Highway 403				
Watercourse Name					
Crossing Type:	Road <input checked="" type="checkbox"/>	Rail <input type="checkbox"/>	Water <input type="checkbox"/> Navigable waterway <input type="checkbox"/>		
	River <input type="checkbox"/>	Other <input type="checkbox"/>	Creek <input type="checkbox"/> Pedestrian <input type="checkbox"/>		
Hwy Direction	1-NORTH/SOUTH				
Owner Category					
Maint. Dist.		Northing	43.258026		
Region	Central	Easting	-79.901932		
District	Bancroft	National Highway System			
Ward	01	Highway Designation			
Township		Hwy Functional Classifica			
Structure Category	Bridge	AADT	22,562	No. of Lanes	
Main Struct. Subcatg.	Beam/Girder	Trucks (%)		Posted Speed	90
Main Struct. Type	I-beams / Girders	District Bridge Engineer			
Deck Length (Total)	106.40 (m)	Road Authority			
Overall Structure Width	16.70 (m)	Bridge Plan #			
Deck Area (Total)	1,776.88 (Sq.m)	Min. Vertical Clearance		9.30 (m)	
Width (Traffic)	14.40 (m)	Detour Distance		(km)	
Skew Angle		Speed on Detour		(kph)	
Number of Spans	7	Fill Height		(m)	
Total Length / Spans (r)	Total = 105.60; (1) = 14.7; (2) = 15.24; (3) = 15.24; (4) = 15.24; (5) = 15.24; (6) = 15.24; (7) = 14.7				

Historical Data

Year Built	1969	Evaluation Year	
Last Biennial Inspection	December 02, 2022	Current Load Limit	
Last Bridge Master Inspection		Current BCI	68.94
Last Condition Survey		Current BCU	43.30
Last Underwater Inspection		Current SI	12.56

Rehab. History

2013 - Bearing Pedestal, 2016 - Reinforce Girders, 2015 - EJ repairs,
2021 - Replace 2 Light Poles, 2022 - Deck repairs, new EJ, new asphalt



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Scheduled Improvements

Regional Priority Number		Programmed Work Year	
Nature of Programmed Work			

Appraisal Indices	Comments
--------------------------	-----------------

Load Capacity Index		
Flood Index		
Barrier Index		
Curb Index		
Seismic Index		
Fatigue Index		
Scour Index		
Structure Index		

Suspected Performance Deficiencies

- | | | |
|---|---|------------------------------|
| 00 None | 06 Bearings not uniformly loaded/unstable | 12 Slippery surface |
| 01 Load carrying capacity | 07 Jammed expansion joint | 13 Flooding/channel blockage |
| 02 Excessive deformations (deflections and rotations) | 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 |
| 05 Seized bearings | 11 Deck drainage | |

Maintenance Needs

- | | | |
|--------------------------------------|---------------------------------|-------------------------------|
| 01 Lift and Swing Bridge Maintenance | 07 Repairs to Structural Steel | 13 Erosion Control at Bridges |
| 02 Bridge Cleaning | 08 Repair of Bridge Concrete | 14 Concrete Sealing |
| 03 Bridge Handrail Maintenance | 09 Repair of Bridge Timber | 15 Rout and Seal |
| 04 Painting Steel Bridge Structures | 10 Bailey bridges - Maintenance | 16 Bridge Deck Drainage |
| 05 Bridge Deck Joint Repair | 11 Animal/Pest Control | 17 Other |
| 06 Bridge Bearing Maintenance | 12 Bridge Surface Repair | |



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Field Inspection Information

Inspection Date	December 02, 2022	Weather	Cloudy
Inspector	Morrison Hershfield Ltd.	Temperature	3
Others in Party	Paul Locham (CET), Greg Morrison		
Equipment Used	Digital camera, hammer, measuring tape.		
Access Equipment Used	Ladder <input type="checkbox"/> Boat <input type="checkbox"/> Bucket Truck <input type="checkbox"/> Hip Waders <input type="checkbox"/> Access Key <input type="checkbox"/> Climbing Inspection <input type="checkbox"/> Under Bridge Inspection Unit <input type="checkbox"/>		

Special Notes

Bridge is in Fair to Good condition. Bridge elements exhibiting severe defects include west parapet wall, abutments, and piers. Bridge repairs in 2022 included patch repairs on deck/sidewalk/curb/approach slabs, new exp joints, & new asphalt.

Upcoming Inspections and Investigations

Inspection Type	Due Date	Priority	Comment

Recommended Inspections and Investigations

Recommended Inspection Type	Due Date	Priority			Estimated Cost (\$)	Comments
		None	Normal	Urgent		
Material Condition Survey:						
Detailed Deck Condition Survey		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Non-destructive Delamination Survey of Asphalt-Covered Deck		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Concrete Substructure Condition Survey		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Detailed Coating Condition Survey		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Detailed Timber Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Post-Tensioned Strand Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Underwater Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Fatigue Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Seismic Investigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Structure Evaluation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Monitoring						
Monitoring of Deformations, Settlements and Movements		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Monitoring Crack Widths		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Overall Structure Recommendations:

Work Category	None <input type="checkbox"/>	Minor Rehab <input type="checkbox"/>	Major Rehab <input type="checkbox"/>	Replacement <input checked="" type="checkbox"/>
Timing	None <input type="checkbox"/>	Urgent <input type="checkbox"/>	< 1 year <input type="checkbox"/>	1 - 5 year <input type="checkbox"/> 6 - 10 year <input checked="" type="checkbox"/>
Est. Total Cost	\$ 10,000,000			
Comments	Bridge planned for replacement in 5-10 yrs.			



City of Hamilton Bridge Inspection Form

Struct. ID	282
Element Data	

Group	Abutments	Length	N/A (m)					
Element	Abutment walls	Width	16.30 (m)					
Span Num		Height	3.00 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	Conventional closed	Quantity	98.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	50.000	36.000	12.000			

Comments CR = 6

Typically wet and graffiti. Several severe delamination and spalls on both walls (Ref Photos 49-53). No immediate recommendation as bridge planned to be replaced.

Performance Deficiencies
0-None

1

Group	Abutments	Length	N/A (m)					
Element	Ballast walls	Width	16.30 (m)					
Span Num		Height	0.90 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	N/A	Quantity	29.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South Abutments	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	16.000	12.000	1.000			

Comments CR = 4

Typical heavy wet stained, several severe delamination and spalls (Ref Photo 54). No immediate recommendation as bridge planned to be replaced.

Performance Deficiencies
0-None

2



City of Hamilton Bridge Inspection Form

Struct. ID	282
Element Data	

Group	Abutments	Length	N/A (m)					
Element	Bearings	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material	N/A	Count	16.00					
Type	Rocker	Quantity	16.000 (Each)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South Abutments	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	14.000	2.000	0.000			

Comments CR = 3

Typical light to medium corrosion, severe tilting on western bearings at north abutment. Galvanized steel pedestals installed secondary bearing in front of all original rocker bearings showed significant defects (Ref Photos 50, 54-56)

Performance Deficiencies

0-None

3

Group	Abutments	Length	5.90 (m)					
Element	Wingwalls	Width	N/A (m)					
Span Num		Height	1.40 (m)					
Material	Cast-in-place concrete	Count	4.00					
Type	Reinforced concrete	Quantity	33.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	All Quadrants	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	27.000	6.000	0.000			

Comments CR = 3

Few narrow to medium cracks, wet area on SW wall (Ref Photos 57-60).

Performance Deficiencies

0-None

4



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Approaches	Length	6.00 (m)					
Element	Approach slabs	Width	16.70 (m)					
Span Num		Height	(m)					
Material	Cast-in-place concrete	Count	2.00					
Type	N/A	Quantity	200.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	200.000	0.000	0.000			

Comments CR = 4

Approach slabs repaired in 2022.

Performance Deficiencies
0-None

5

Group	Approaches	Length	6.00 (m)					
Element	Curb/gutters	Width	N/A (m)					
Span Num		Height	0.14 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	N/A	Quantity	12.000 (m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	West Side	Description	width is 0.4m					
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	0.000	10.000	2.000	0.000			

Comments CR = 2

Several narrow-medium cracks and few isolated small spalls (Ref Photo 33).

Performance Deficiencies
0-None

6



City of Hamilton Bridge Inspection Form

Struct. ID	282
Element Data	

Group	Approaches	Length	6.00 (m)					
Element	Sidewalk/Curb	Width	1.47 (m)					
Span Num		Height	0.14 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	N/A	Quantity	19.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	East Side	Description	Pedestrian Sidewalk					
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	17.000	2.000	0.000			
Comments								CR = 2
Few medium cracks, large concrete patches on sidewalk at both approaches (Ref Photos 32, 35).								
Performance Deficiencies								
0-None								
7								

Group	Approaches	Length	6.00 (m)					
Element	Wearing surface	Width	14.40 (m)					
Span Num		Height	(m)					
Material	Asphalt	Count	2.00					
Type	N/A	Quantity	173.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	173.000	0.000	0.000	0.000			
Comments								CR = 1
New asphalt pavements on both approaches (Ref Photos 63, 64).								
Performance Deficiencies								
0-None								
8								



City of Hamilton Bridge Inspection Form

Struct. ID 282

Element Data

Group	Attachments, Signs, and Utilities						Length	N/A (m)
Element	Electrical						Width	N/A (m)
Span Num							Height	N/A (m)
Material	N/A						Count	N/A
Type	N/A						Quantity	4.000 (Each)
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	West Side					Description	Light Poles	
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	2.000	2.000	0.000	0.000			

Comments CR = 1

4 Light Poles on West parapet wall. Few narrow-medium cracks at bottom of original concrete light poles at North Pier and SW Wingwall locations; new aluminum poles at Pier 2 and 4 locations.

Performance Deficiencies
0-None

9

Group	Attachments, Signs, and Utilities						Length	N/A (m)
Element	Signs						Width	N/A (m)
Span Num							Height	N/A (m)
Material	N/A						Count	N/A
Type	N/A						Quantity	2.000 (Each)
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	NW & SW					Description	Hazard marker signs	
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	2.000	0.000	0.000			

Comments CR = 2

Hazard marker signs at north & south ends of West parapet wall (Ref. Photos 2, 33).

Performance Deficiencies
0-None

10



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Attachments, Signs, and Utilities					Length	N/A (m)	
Element	Utilities					Width	N/A (m)	
Span Num						Height	N/A (m)	
Material	N/A					Count	N/A	
Type	N/A					Quantity	1.000 (Each)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	Below Deck					Description	Insulated Watermain	
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	1.000	0.000	0.000			

Comments CR = 3

Insulated watermain under deck. Typical local light surface rust on steel hangers supports and local areas of light rust on corrugated steel wrapping (Ref. Photos 10-165, 31).

Performance Deficiencies

0-None

11



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Barriers	Length	120.50 (m)					
Element	Barrier/Parapet Walls Interior	Width	N/A (m)					
Span Num		Height	0.81 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	Parapet Wall with two rails	Quantity	195.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	East & West	Description	includes top of parapet wall					
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	170.000	15.000	10.000			

Comments CR = 4

Few narrow-medium cracks and local patch repaired areas on east wall. Severe delamination & spalls on west wall behind steel thrie-beam (no defects) on west wall (Ref Photos 32-36). No immediate recommendation as bridge planned to be replaced.

Performance Deficiencies

0-None

12



City of Hamilton Bridge Inspection Form

Struct. ID	282
Element Data	

Group	Barriers	Length	120.50 (m)					
Element	Barrier/Parapet Walls Exterior	Width	N/A (m)					
Span Num		Height	0.62 (m)					
Material	Cast-in-place concrete	Count	2.00					
Type	Parapet Wall with two rails	Quantity	149.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	East & West	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	120.000	21.000	8.000			

Comments CR = 5

Isolated N-M cracks, local repaired areas, and spalls from removal of loose concrete operation over Hwy 403 (Ref Photo 37). No immediate recommendation as bridge planned to be replaced.

Performance Deficiencies

0-None

13

Group	Barriers	Length	119.30 (m)					
Element	Hand Railings	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material	Steel	Count	4.00					
Type	Double Railing	Quantity	477.000 (m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	East & West	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	0.000	465.000	12.000	0.000			

Comments CR = 4

Overall light surface corrosion and local areas of light to medium surface corrosion (Ref Photos 32-36).

Performance Deficiencies

0-None

14



City of Hamilton Bridge Inspection Form

Struct. ID 282

Element Data

Group	Beams/MLE's					Length	(m)	
Element	Diaphragms					Width	(m)	
Span Num	End					Height	(m)	
Material	Weathering steel					Count	14.00	
Type	I type					Quantity	14.000 (Sq.m)	
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>					Not Inspected	<input type="checkbox"/>	
Location	North & South Abutments				Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	1.000	8.000	5.000			

Comments CR = 6

Typical medium-severe corrosion on bottom section, severe corrosion noted on back side of diaphragms facing ballast wall (Ref Photos 17, 19, 23). No immediate recommendation as bridge planned to be replaced.

Performance Deficiencies
0-None

15

Group	Beams/MLE's					Length	(m)	
Element	Diaphragms					Width	(m)	
Span Num	Intermediate					Height	(m)	
Material	Weathering steel					Count	55.00	
Type	I type					Quantity	55.000 (Sq.m)	
Env't	Benign <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/>					Not Inspected	<input type="checkbox"/>	
Location	All Spans				Description			
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	55.000	0.000	0.000			

Comments CR = 2

Local areas of light flaking of patina (Ref Photos 10-16).

Performance Deficiencies
0-None

16



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Beams/MLE's					Length	4.00 (m)	
Element	Girders					End	Width	0.30 (m)
Span Num						Height	0.56 (m)	
Material	Weathering steel					Count	8.00	
Type	I type					Quantity	65.000 (Sq.m)	
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>					Not Inspected	<input type="checkbox"/>	
Location	North & South Abutment					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	38.000	16.000	11.000			

Comments CR = 5

Typical medium to severe corrosion on bottom section of girders, severe corrosion with small perforation holes noted behind end-stiffener. Additional steel T-Section for reinforcement noted on all girders (Ref Photos 17, 19, 23, 54-56).

Performance Deficiencies

0-None

17

Group	Beams/MLE's					Length	102.40 (m)	
Element	Girders					Middle	Width	0.30 (m)
Span Num						Height	0.56 (m)	
Material	Weathering steel					Count	8.00	
Type	I type					Quantity	1,655.000 (Sq.m)	
Env't	Benign <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/>					Not Inspected	<input type="checkbox"/>	
Location	All Spans					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	1,655.000	0.000	0.000			

Comments CR = 2

Light patina flaking on bottom flange surface (Ref Photo 6-16).

Performance Deficiencies

0-None

18



City of Hamilton Bridge Inspection Form

Struct. ID 282

Element Data

Group	Coatings	Length	N/A (m)					
Element	Railing Systems / Hand Railings	Width	N/A (m)					
Span Num		Height	N/A (m)					
Material	N/A	Count	N/A					
Type	Hot dip galvanizing	Quantity	135.000 (m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	West & East Sides	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	0.000	0.000	35.000	100.000			

Comments CR = 4

Overall fading and break-down of galvanize coating (Ref Photos 32-35). No immediate recommendation as bridge planned to be replaced.

Performance Deficiencies
0-None

19

Group	Decks	Length	106.40 (m)					
Element	Deck top	Width	16.70 (m)					
Span Num		Height	(m)					
Material	Cast-in-place concrete	Count	N/A					
Type	Cast-in-place concrete on supports	Quantity	1,792.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	All	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	1,792.000	0.000	0.000			

Comments CR = 1

Local repairs completed on decktop in 2022.

Performance Deficiencies
0-None

20



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Decks	Length	N/A (m)					
Element	Drainage	Width	N/A (m)					
Span Num	5	Height	N/A (m)					
Material	Steel	Count	N/A					
Type	Drain pipes with basins	Quantity	2.000 (Each)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	Span 5, East & West Side	Description	Deck Drains					
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	2.000	0.000	0.000			

Comments CR = 2

Accumulation of debris on deck surface clogging drains, no defects on drain downspout (Ref Photos 29, 30).

Maintenance Needs	Need Timing
2-Bridge Cleaning	1 Year
Performance Deficiencies	
0-None	



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Decks	Length	4.00 (m)					
Element	Soffit - Thin Slab	Width	14.40 (m)					
Span Num		Height	N/A (m)					
Material	Cast-in-place concrete	Count	N/A					
Type	N/A	Quantity	58.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	North & South Abutments	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	40.000	15.000	3.000			

Comments CR = 5

Local light spalls at NW exterior corner, few severe delamination on NW & NE interior sections, stained crack with wet area at SW interior section of soffit at north and south spans (Ref Photos 17, 20, 21-23). No recommendation as bridge to be replaced.

Performance Deficiencies

0-None

22



City of Hamilton Bridge Inspection Form

Struct. ID	282
Element Data	

Group	Decks	Length	102.40 (m)					
Element	Soffit - Thin Slab	Width	1.12 (m)					
	Exterior	Height	N/A (m)					
Span Num		Count	N/A					
Material	Cast-in-place concrete	Quantity	115.000 (Sq.m)					
Type	N/A	Not Inspected	<input type="checkbox"/>					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>							
Location	West & East Ext Soffit & Fascia	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	82.000	25.000	8.000			

Comments CR = 5

Numerous isolated areas of light-medium delamination and spall on east & west sides. Spall from loose concrete removal operation noted in Span 2 & 3 over Hwy 403 traffic lanes (Ref Photos 5-9). No immediate recommendation as bridge planned to be replace

Performance Deficiencies

0-None

23



City of Hamilton Bridge Inspection Form

Struct. ID 282

Element Data

Group	Decks					Length	102.40 (m)	
Element	Soffit - Thin Slab			Interior		Width	13.30 (m)	
Span Num						Height	N/A (m)	
Material	Cast-in-place concrete					Count	N/A	
Type	N/A					Quantity	1,362.000 (Sq.m)	
Env't	Benign <input checked="" type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	All Spans.					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	1,152.000	160.000	50.000			

Comments CR = 5

Typical narrow to medium efflorescence stained cracks. Several small spalled areas from loose concrete removal operation Span 2 and 3 over Hwy 403, light spall in span 6 (Ref Photos 10-16). No immediate recommendation as bridge planned to be replaced.

Performance Deficiencies
0-None

24

Group	Decks					Length	106.40 (m)	
Element	Wearing surface					Width	14.40 (m)	
Span Num						Height	(m)	
Material	Asphalt					Count	N/A	
Type	N/A					Quantity	1,532.000 (Sq.m)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	All Spans.					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	1,532.000	0.000	0.000	0.000			

Comments CR = 1

New asphalt pavement on deck (Ref Photos 3, 4)

Performance Deficiencies
0-None

25



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Embankments & Streams					Length	N/A (m)	
Element	Embankments					Width	N/A (m)	
Span Num						Height	N/A (m)	
Material	N/A					Count	N/A	
Type	N/A					Quantity	6.000 (Each)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	All Quadrants & in front of Abut					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	6.000	0.000	0.000			
Comments								CR = 2
No scour noted (Ref Photos 57-62).								
Performance Deficiencies								
0-None								
								26

Group	Embankments & Streams					Length	N/A (m)	
Element	Slope protection					Width	N/A (m)	
Span Num						Height	N/A (m)	
Material	N/A					Count	N/A	
Type	Concrete					Quantity	6.000 (Each)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	North and South Abutments					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Each	0.000	6.000	0.000	0.000			
Comments								CR = 2
Rock protection at north abutment. No defects noted. Concrete slope paving noted at south abutment, few medium cracks in concrete. (Ref Photos 61, 62).								
Performance Deficiencies								
0-None								
								27



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Foundations					Length	N/A (m)	
Element	Foundation (below ground level)					Width	N/A (m)	
Span Num						Height	N/A (m)	
Material	Cast-in-place concrete					Count	N/A	
Type	Combination					Quantity	1.000 (N/A)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	Abutments & Piers					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	N/A	0.000	1.000	0.000	0.000			
Comments								CR = 2
No observable performance defects noted.								
Performance Deficiencies								
0-None								
28								

Group	Joints					Length	16.70 (m)	
Element	Armoring/retaining devices					Width	N/A (m)	
Span Num						Height	N/A (m)	
Material	Steel					Count	4.00	
Type	N/A					Quantity	67.000 (m)	
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	North & South					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	67.000	0.000	0.000	0.000			
Comments								CR = 1
Expansion joints replaced in 2022 (Ref. Photos 26, 27)								
Performance Deficiencies								
0-None								
29								



City of Hamilton Bridge Inspection Form

Struct. ID 282

Element Data

Group	Joints						Length	14.40 (m)
Element	Concrete end dams						Width	0.23 (m)
Span Num							Height	N/A (m)
Material	Cast-in-place concrete						Count	4.00
Type	N/A						Quantity	12.000 (Sq.m)
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	North & South					Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	12.000	0.000	0.000	0.000			

Comments CR = 5
 New concrete end-dams installed in 2022 (Ref Photos 26, 27).

Performance Deficiencies
 0-None

30

Group	Joints						Length	16.70 (m)
Element	Seals/sealants						Width	N/A (m)
Span Num							Height	N/A (m)
Material	N/A						Count	2.00
Type	Other						Quantity	2.000 (m)
Env't	Benign <input type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input checked="" type="checkbox"/>		Not Inspected	<input type="checkbox"/>
Location	North & South					Description	Silicoflex Seals	
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	m	2.000	0.000	0.000	0.000			

Comments CR = 2
 New expansion joint seals installed as part of bridge repairs in 2022. Gaps noted between the caulking atop of seals (Silicoflex) and the steel armour angles (Ref Photo 28).

Performance Deficiencies
 0-None

31



City of Hamilton Bridge Inspection Form

Struct. ID 282

Element Data

Group	Piers						Length	N/A	(m)
Element	Bearings						Width	N/A	(m)
Span Num							Height	N/A	(m)
Material	N/A						Count	36.00	
Type	Elastomeric pad						Quantity	36.000 (Each)	
Env't	Benign <input checked="" type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>	
Location	All Piers						Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs	
	Each	0.000	20.000	16.000	0.000				

Comments CR = 2

No significant defects noted on bearing pads except for some cracking on the grout pads (Ref Photo 48).

Performance Deficiencies
0-None

32

Group	Piers						Length	2.00	(m)
Element	Caps						Width	11.00	(m)
Span Num							Height	0.80	(m)
Material	Cast-in-place concrete						Count	6.00	
Type	N/A						Quantity	389.000 (Sq.m)	
Env't	Benign <input checked="" type="checkbox"/>		Moderate <input type="checkbox"/>		Severe <input type="checkbox"/>		Not Inspected	<input type="checkbox"/>	
Location	All Piers						Description		
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs	
	Sq.m	0.000	363.000	22.000	4.000				

Comments CR = 5

Spalls from loose concrete removal operation on Hwy 403 noted at Piers 1 to 3. Local delamination on cap beams at Piers 4- 6 (Ref Photos 38-44). No immediate recommendation as bridge planned to be replaced.

Performance Deficiencies
0-None

33



City of Hamilton Bridge Inspection Form

Struct. ID	282
Element Data	

Group	Piers	Length	2.00 (m)					
Element	Shafts/columns/Pile Bents	Width	1.20 (m)					
Span Num		Height	8.00 (m)					
Material	Cast-in-place concrete	Count	24.00					
Type	Conc rectangular columns with cap beam	Quantity	1,229.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe <input type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	All 6 Piers	Description	4 Columns per Pier					
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	869.000	310.000	50.000			

Comments CR = 6

Spalls from loose concrete removal operation on Hwy 403 noted at Piers 1 to 3. Extensive severe delamination & spall at Pier 4, several local severe delam & spalls at Pier 5 and 6 (Ref Photos 38-47). No immediate recommendation as bridge to be replaced.

Performance Deficiencies
0-None

34

Group	Sidewalks/curbs	Length	106.40 (m)					
Element	Curbs	Width	0.40 (m)					
Span Num		Height	0.14 (m)					
Material	Cast-in-place concrete	Count	1.00					
Type	N/A	Quantity	57.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	West side	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	55.000	2.000	0.000			

Comments CR = 3

Few narrow-medium cracks, light scaling, and several local patch-repaired areas (Ref Photos 4, 33).

Performance Deficiencies
0-None

35



City of Hamilton Bridge Inspection Form

Struct. ID	282
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Element Data

Group	Sidewalks/curbs	Length	106.40 (m)					
Element	Sidewalk and medians	Width	1.47 (m)					
Span Num		Height	0.14 (m)					
Material	Cast-in-place concrete	Count	1.00					
Type	N/A	Quantity	171.000 (Sq.m)					
Env't	Benign <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/>	Not Inspected	<input type="checkbox"/>					
Location	East side	Description						
Condition Data	Unit	Excellent	Good	Fair	Poor	V. Poor	Perform. Deficiencies	Maintenance Needs
	Sq.m	0.000	131.000	40.000	0.000			

Comments CR = 3

Several narrow-medium transverse cracks and few medium-wide longitudinal cracks (near curb face), and several local patch-repaired areas (Ref Photos 3, 32, 34, 35).

Performance Deficiencies

0-None

36



City of Hamilton Bridge Inspection Form


Struct. ID 282


Recommended Work (Element Level)						
<u>Element</u>	<u>Repair / Rehabilitation</u>	<u>Time</u>				<u>Estimated Cost (\$)</u>
		<u>None</u>	<u>Urgent</u>	<u>< 1 year</u>	<u>1 - 5 year</u>	
Total Cost						

Recommended Work (Structure Level)		
<u>Associated Work</u>	<u>Comments</u>	<u>Estimated Cost (\$)</u>
Approaches		
Detours		
Other		
Traffic Control		
Utilities		
Total Cost		
Grand Total Cost:		\$0




City of Hamilton Bridge Inspection Form


Struct. ID	282	
 <p style="text-align: right; font-size: small; color: orange;">2022/12/02 12:01:56</p>	Description East Elevation	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 2px;"> Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other </td> <td style="width: 30%; padding: 2px; vertical-align: top;"> General </td> </tr> </table>	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other
Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	General	
File Name 01 East Elevation.JPG		

 <p style="text-align: right; font-size: small; color: orange;">2022/12/02 11:46:01</p>	Description General View of Bridge Deck from South Approach	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 2px;"> Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other </td> <td style="width: 30%; padding: 2px; vertical-align: top;"> General </td> </tr> </table>	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other
Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	General	
File Name 02 General View of Bridge Deck from South Approach.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
 <p style="text-align: right; font-size: small; color: red;">2022/12/02 12:11:13</p>	Description		
	Bridge Deck from Southeast Corner		
		Elem Grp/Class	Decks/Wearing surface
		Elem Type	
		Sub Element	
		Material Type	Asphalt
		Locator	South
		Defect Descript1	Excellent condition
		Defect Descript2	
		Defect	
		Other	
File Name	03 Bridge Deck from Southeast Corner.JPG		

 <p style="text-align: right; font-size: small; color: red;">2022/12/02 11:38:44</p>	Description		
	Bridge Deck from Northwest Corner		
		Elem Grp/Class	Decks/Wearing surface
		Elem Type	
		Sub Element	
		Material Type	Asphalt
		Locator	North
		Defect Descript1	Excellent condition
		Defect Descript2	
		Defect	
		Other	
File Name	04 Bridge Deck from Northwest Corner.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282																	
	<p>Description General View of Deck Underside at Hwy 403 from SW Corner</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td>Exterior</td> </tr> <tr> <td>Sub Element</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Material Type</td> <td>General</td> </tr> <tr> <td>Locator</td> <td></td> </tr> <tr> <td>Defect Descript1</td> <td></td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type	Exterior	Sub Element	Cast-in-place concrete	Material Type	General	Locator		Defect Descript1		Defect Descript2		Defect		Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type	Exterior																	
Sub Element	Cast-in-place concrete																	
Material Type	General																	
Locator																		
Defect Descript1																		
Defect Descript2																		
Defect																		
Other																		
File Name	05 General View of Deck Underside at Hwy 403 from SW Corner.JPG																	

	<p>Description East Exterior Soffit from South</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td>Exterior</td> </tr> <tr> <td>Sub Element</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Material Type</td> <td>East</td> </tr> <tr> <td>Locator</td> <td>Fair condition</td> </tr> <tr> <td>Defect Descript1</td> <td></td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type	Exterior	Sub Element	Cast-in-place concrete	Material Type	East	Locator	Fair condition	Defect Descript1		Defect Descript2		Defect		Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type	Exterior																	
Sub Element	Cast-in-place concrete																	
Material Type	East																	
Locator	Fair condition																	
Defect Descript1																		
Defect Descript2																		
Defect																		
Other																		
File Name	06 East Exterior Soffit from South.JPG																	




City of Hamilton Bridge Inspection Form


Struct. ID	282																	
	Description West Exterior Soffit from North																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td>Exterior</td> </tr> <tr> <td>Sub Element</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Material Type</td> <td>West</td> </tr> <tr> <td>Locator</td> <td>Good condition</td> </tr> <tr> <td>Defect Descript1</td> <td></td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type	Exterior	Sub Element	Cast-in-place concrete	Material Type	West	Locator	Good condition	Defect Descript1		Defect Descript2		Defect		Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type	Exterior																	
Sub Element	Cast-in-place concrete																	
Material Type	West																	
Locator	Good condition																	
Defect Descript1																		
Defect Descript2																		
Defect																		
Other																		
File Name 07 West Exterior Soffit from North.JPG																		

	Description Local Delamination & Spalls on South Section of East Fascia																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td>Exterior</td> </tr> <tr> <td>Sub Element</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Material Type</td> <td>East</td> </tr> <tr> <td>Locator</td> <td>Fair condition</td> </tr> <tr> <td>Defect Descript1</td> <td>Spalling</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type	Exterior	Sub Element	Cast-in-place concrete	Material Type	East	Locator	Fair condition	Defect Descript1	Spalling	Defect Descript2		Defect		Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type	Exterior																	
Sub Element	Cast-in-place concrete																	
Material Type	East																	
Locator	Fair condition																	
Defect Descript1	Spalling																	
Defect Descript2																		
Defect																		
Other																		
File Name 08 Local Delamination & Spalls on South Section of East Fascia.JPG																		



City of Hamilton Bridge Inspection Form

Struct. ID	282																	
	<p>Description Removed Loose Concrete Areas over Hwy 403, East Edge at Span 2 Shown</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td>Exterior</td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td>East</td> </tr> <tr> <td>Defect Descript1</td> <td>Poor condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Spalling</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type		Sub Element	Exterior	Material Type	Cast-in-place concrete	Locator	East	Defect Descript1	Poor condition	Defect Descript2		Defect	Spalling	Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type																		
Sub Element	Exterior																	
Material Type	Cast-in-place concrete																	
Locator	East																	
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Spalling																	
Other																		
File Name	09 Removed Loose Concrete Areas over Hwy 403, East Edge at Span 2 Shown.JPG																	

	<p>Description South Span (Span 1), Interior Soffit, looking South</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td>Interior</td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td>Interior</td> </tr> <tr> <td>Defect Descript1</td> <td>Good condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type		Sub Element	Interior	Material Type	Cast-in-place concrete	Locator	Interior	Defect Descript1	Good condition	Defect Descript2		Defect		Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type																		
Sub Element	Interior																	
Material Type	Cast-in-place concrete																	
Locator	Interior																	
Defect Descript1	Good condition																	
Defect Descript2																		
Defect																		
Other																		
File Name	10 South Span (Span 1), Interior Soffit, looking South.JPG																	



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description South Intermediate Span (Span 2), Interior Soffit over 403EB, looking North	
Elem Grp/Class	Decks/Soffit - Thin Slab
Elem Type	
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	Interior
Defect Descript1	Good condition
Defect Descript2	
Defect	
Other	

File Name 11 South Intermediate Span (Span 2), Interior Soffit over 403EB, looking North.JPG





Description Span 3, Interior Soffit over 403WB, looking South	
Elem Grp/Class	Decks/Soffit - Thin Slab
Elem Type	
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	Interior
Defect Descript1	Good condition
Defect Descript2	
Defect	
Other	

File Name 12 Span 3, Interior Soffit over 403WB, looking South.JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282																	
	Description Span 4, Interior Soffit, looking South																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td>Interior</td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td>Interior</td> </tr> <tr> <td>Defect Descript1</td> <td>Good condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type		Sub Element	Interior	Material Type	Cast-in-place concrete	Locator	Interior	Defect Descript1	Good condition	Defect Descript2		Defect		Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type																		
Sub Element	Interior																	
Material Type	Cast-in-place concrete																	
Locator	Interior																	
Defect Descript1	Good condition																	
Defect Descript2																		
Defect																		
Other																		
File Name	13 Span 4, Interior Soffit, looking South.JPG																	

	Description Span 5, Interior Soffit, looking North																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td>Interior</td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td>Interior</td> </tr> <tr> <td>Defect Descript1</td> <td>Good condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type		Sub Element	Interior	Material Type	Cast-in-place concrete	Locator	Interior	Defect Descript1	Good condition	Defect Descript2		Defect		Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type																		
Sub Element	Interior																	
Material Type	Cast-in-place concrete																	
Locator	Interior																	
Defect Descript1	Good condition																	
Defect Descript2																		
Defect																		
Other																		
File Name	14 Span 5, Interior Soffit, looking North.JPG																	



City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description North Intermediate Span (Span 6), Interior Soffit, looking North		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Interior Cast-in-place concrete Interior Good condition Stained	
File Name	15 North Intermediate Span (Span 6), Interior Soffit, looking North.JPG		

	Description North Span (Span 7), Interior Soffit, looking North		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Interior Cast-in-place concrete Interior Good condition	
File Name	16 North Span (Span 7), Interior Soffit, looking North.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description Local Small Delam and Heavy Corrosion below South Expansion Joint, looking West	
Elem Grp/Class	Decks/Soffit - Thin Slab
Elem Type	End
Sub Element	End
Material Type	Cast-in-place concrete
Locator	South
Defect Descript1	Fair condition
Defect Descript2	
Defect	Stained
Other	

File Name 17 Local Small Delam and Heavy Corrosion below South Expansion Joint, looking West.JPG





Description Severe Spall on East Exterior Soffit between Pier 1 and 2	
Elem Grp/Class	Decks/Soffit - Thin Slab
Elem Type	
Sub Element	Exterior
Material Type	Cast-in-place concrete
Locator	Exterior
Defect Descript1	Poor condition
Defect Descript2	
Defect	Spalling
Other	

File Name 18 Severe Spall on East Exterior Soffit between Pier 1 and 2.JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282																	
	<p>Description</p> <p>Heavy Corrosion on End-Diaphragm & Bottom of Girders at SE Corner of South Span Soffit</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Beams/MLE's/Girders</td> </tr> <tr> <td>Elem Type</td> <td>I type</td> </tr> <tr> <td>Sub Element</td> <td>End</td> </tr> <tr> <td>Material Type</td> <td>Weathering steel</td> </tr> <tr> <td>Locator</td> <td>South</td> </tr> <tr> <td>Defect Descript1</td> <td>Poor condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Corrosion</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Beams/MLE's/Girders	Elem Type	I type	Sub Element	End	Material Type	Weathering steel	Locator	South	Defect Descript1	Poor condition	Defect Descript2		Defect	Corrosion	Other
Elem Grp/Class	Beams/MLE's/Girders																	
Elem Type	I type																	
Sub Element	End																	
Material Type	Weathering steel																	
Locator	South																	
Defect Descript1	Poor condition																	
Defect Descript2																		
Defect	Corrosion																	
Other																		
File Name	19 Heavy Corrosion on End-Diaphragm & Bottom of Giders at SE Corner of South Span Soffit.JPG																	

	<p>Description</p> <p>Stained Crack with Wet Area at SW Corner of South Span Soffit</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td>End</td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td>South</td> </tr> <tr> <td>Defect Descript1</td> <td>Fair condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Crack</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type		Sub Element	End	Material Type	Cast-in-place concrete	Locator	South	Defect Descript1	Fair condition	Defect Descript2		Defect	Crack	Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type																		
Sub Element	End																	
Material Type	Cast-in-place concrete																	
Locator	South																	
Defect Descript1	Fair condition																	
Defect Descript2																		
Defect	Crack																	
Other																		
File Name	20 Stained Crack with Wet Area at SW Corner of South Span Soffit.JPG																	




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description		
	Local Spalls at NW Corner of North Span Soffit		
Elem Grp/Class		Decks/Soffit - Thin Slab	
Elem Type		End	
Sub Element		Cast-in-place concrete	
Material Type		Cast-in-place concrete	
Locator		North	
Defect Descript1		Poor condition	
Defect Descript2			
Defect		Spalling	
Other			
File Name	21 Local Spalls at NW Corner of North Span Soffit.JPG		

	Description		
	Local Delam, Spalls, and Narrow-Medium Stained Cracks on NW Section of North Span Soffit		
Elem Grp/Class		Decks/Soffit - Thin Slab	
Elem Type		End	
Sub Element		Cast-in-place concrete	
Material Type		Cast-in-place concrete	
Locator		North	
Defect Descript1		Fair condition	
Defect Descript2			
Defect		Crack	
Other			
File Name	22 Local Delam, Spalls, and Narrow-Medium Stained Cracks on NW Section of North Span Soffit.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description Severe Delam on Soffit & Heavy Corrosion on End-Diaphragm at NE Corner of North Span Soffit		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab End Cast-in-place concrete North Poor condition Delamination	
File Name		23 Severe Dalam on Soffit & Heavy Corrosion on End-Diaphragm at NE Corner of North Span Soffit	

	Description Wet Areas with Local Spalls on NE Seciton of Soffit at Span 6		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Decks/Soffit - Thin Slab Interior Cast-in-place concrete Interior Fair condition Staining	
File Name		24 Wet Areas with Local Spalls on NE Seciton of Soffit at Span 6.JPG	



City of Hamilton Bridge Inspection Form

Struct. ID	282																	
 <p style="text-align: right; font-size: small; color: orange;">2022/12/02 11:33:16</p>	<p>Description Typical Narrow Stained Cracks on Interior Soffit, Span 4 Shown</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Decks/Soffit - Thin Slab</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td>Interior</td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td>Interior</td> </tr> <tr> <td>Defect Descript1</td> <td>Good condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td>Crack</td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Decks/Soffit - Thin Slab	Elem Type		Sub Element	Interior	Material Type	Cast-in-place concrete	Locator	Interior	Defect Descript1	Good condition	Defect Descript2		Defect	Crack	Other
Elem Grp/Class	Decks/Soffit - Thin Slab																	
Elem Type																		
Sub Element	Interior																	
Material Type	Cast-in-place concrete																	
Locator	Interior																	
Defect Descript1	Good condition																	
Defect Descript2																		
Defect	Crack																	
Other																		
File Name	25 Typical Narrow Stained Cracks on Interior Soffit, Span 4 Shown.JPG																	

 <p style="text-align: right; font-size: small; color: orange;">2022/12/02 11:44:25</p>	<p>Description South Expansion Joint, looking East</p>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Elem Grp/Class</td> <td>Joints/Concrete end dams</td> </tr> <tr> <td>Elem Type</td> <td></td> </tr> <tr> <td>Sub Element</td> <td></td> </tr> <tr> <td>Material Type</td> <td>Cast-in-place concrete</td> </tr> <tr> <td>Locator</td> <td>South</td> </tr> <tr> <td>Defect Descript1</td> <td>Excellent condition</td> </tr> <tr> <td>Defect Descript2</td> <td></td> </tr> <tr> <td>Defect</td> <td></td> </tr> <tr> <td>Other</td> <td></td> </tr> </table>	Elem Grp/Class	Joints/Concrete end dams	Elem Type		Sub Element		Material Type	Cast-in-place concrete	Locator	South	Defect Descript1	Excellent condition	Defect Descript2		Defect		Other
Elem Grp/Class	Joints/Concrete end dams																	
Elem Type																		
Sub Element																		
Material Type	Cast-in-place concrete																	
Locator	South																	
Defect Descript1	Excellent condition																	
Defect Descript2																		
Defect																		
Other																		
File Name	26 South Expansion Joint, looking East.JPG																	



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description
North Expansion Joint, looking West

Elem Grp/Class	Joints/Armoring/retaining device
Elem Type	
Sub Element	
Material Type	Steel
Locator	North
Defect Descript1	Excellent condition
Defect Descript2	
Defect	
Other	

File Name 27 North Expansion Joint, looking West.JPG




Description
South Expansion Joint, Gaps from Debonded Caulking atop Joint Seal (TYP)


Elem Grp/Class	Joints/Seals/sealants
Elem Type	Other
Sub Element	
Material Type	
Locator	South
Defect Descript1	Good condition
Defect Descript2	
Defect	
Other	

File Name 28 South Expansion Joint, Gaps from Debonded Caulking atop Joint Seal (TYP).JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description	Typical Debris CLogging Deck Drain, West Drain Shown	
	Elem Grp/Class	Decks/Drainage	
Elem Type	Drain pipes with basins		
Sub Element			
Material Type	Steel		
Locator	West		
Defect Descript1	Good condition		
Defect Descript2			
Defect			
Other			
File Name	29 Typical Debris CLogging Deck Drain, West Drain Shown.JPG		

	Description	Typical Drain Downspout, East Drain in Span 5 Shown	
	Elem Grp/Class	Decks/Drainage	
Elem Type	Drain pipes with basins		
Sub Element			
Material Type	Steel		
Locator	East		
Defect Descript1	Good condition		
Defect Descript2			
Defect			
Other			
File Name	30 Typical Drain Downspout, East Drain in Span 5 Shown.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
		Description	
		Insulated Watermain below Bridge deck, looking North	
		Elem Grp/Class	Attachments, Signs, and Utilities
		Elem Type	
		Sub Element	
		Material Type	
		Locator	South
		Defect Descript1	Good condition
		Defect Descript2	
		Defect	
		Other	
File Name		31 Insulated Watermain below Bridge deck, looking North.JPG	

		Description	
		East Sidewalk & Parapet Wall from South	
		Elem Grp/Class	Sidewalks/curbs/Curbs
		Elem Type	
		Sub Element	
		Material Type	Cast-in-place concrete
		Locator	East
		Defect Descript1	Good condition
		Defect Descript2	
		Defect	
		Other	
File Name		32 East Sidewalk & Parapet Wall from South.JPG	



City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description		
	West Curb & Parapet Wall from North		
Elem Grp/Class	Sidewalks/curbs/Curbs		
Elem Type			
Sub Element			
Material Type	Cast-in-place concrete		
Locator	West		
Defect Descript1	Good condition		
Defect Descript2			
Defect			
Other			
File Name	33 West Curb & Parapet Wall from North.JPG		

	Description		
	Wide Longitudinal Crack on South Section of East Sidewalk, looking North		
Elem Grp/Class	Sidewalks/curbs/Curbs		
Elem Type			
Sub Element			
Material Type	Cast-in-place concrete		
Locator	East		
Defect Descript1	Fair condition		
Defect Descript2			
Defect	Crack		
Other			
File Name	34 Wide Longitudinal Crack on South Section of East Sidewalk, looking North.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID 282



Description Large Patched Area on East Sidewalk at North Expansion Joint (TYP)	
Elem Grp/Class	Sidewalks/curbs/Curbs
Elem Type	
Sub Element	
Material Type	Cast-in-place concrete
Locator	North
Defect Descript1	Good condition
Defect Descript2	
Defect	
Other	

File Name 35 Large Patched Area on East Sidewalk at North Expansion Joint (TYP).JPG





Description West Parapet Wall, Severe Delamination on Wall behind Thrie-Beam Guardrail	
Elem Grp/Class	Barriers/Barrier/Parapet Walls
Elem Type	Parapet Wall with two rails
Sub Element	Interior
Material Type	Cast-in-place concrete
Locator	West
Defect Descript1	Poor condition
Defect Descript2	
Defect	Delamination
Other	

File Name 36 West Parapet Wall, Severe Delamination on Wall behind Thrie-Beam Guardrail.JPG




City of Hamilton Bridge Inspection Form


Struct. ID	282		
 <p style="text-align: right; font-size: small; color: red;">2022/12/02 12:43:49</p>	Description Scaled Exterior Face of West Parapet Wall over 403WB		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Attachments, Signs, and Utilities West Fair condition	
File Name		37 Scaled Exterior Face of West Parapet Wall over 403WB.JPG	

 <p style="text-align: right; font-size: small; color: red;">2022/12/02 11:51:17</p>	Description South Pier (Pier 1), South Elevation		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Shfts/columns/Pile Bent Conc rectangular columns with Cast-in-place concrete South Good condition	
File Name		38 South Pier (Pier 1), South Elevation.JPG	




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description South Intermediate Pier (Pier 2), South Elevation		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Shfts/columns/Pile Bent Conc rectangular columns with Cast-in-place concrete Intermediate Fair condition	
File Name	39 South Intermediate Pier (Pier 2), South Elevation.JPG		

	Description Pier 3, North Elevation		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Shfts/columns/Pile Bent Conc rectangular columns with Cast-in-place concrete Intermediate Fair condition	
File Name	40 Pier 3, North Elevation.JPG		




City of Hamilton Bridge Inspection Form


Struct. ID	282		
	Description Pier 4, South Elevation		
	Elem Grp/Class	Piers/Shfts/columns/Pile Bent	
Elem Type	Conc rectangular columns with		
Sub Element			
Material Type	Cast-in-place concrete		
Locator	Intermediate		
Defect Descript1	Poor condition		
Defect Descript2			
Defect	Spalling		
Other			
File Name	41 Pier 4, South Elevation.JPG		

	Description North Intermediate Pier (Pier 5), North Elevation		
	Elem Grp/Class	Piers/Caps	
Elem Type			
Sub Element			
Material Type	Cast-in-place concrete		
Locator	Intermediate		
Defect Descript1	Good condition		
Defect Descript2			
Defect			
Other			
File Name	42 North Intermediate Pier (Pier 5), North Elevation.JPG		



City of Hamilton Bridge Inspection Form

Struct. ID	282		
	Description North Pier (Pier 7), South Elevation		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Caps Cast-in-place concrete North Good condition	
File Name	43 North Pier (Pier 7), South Elevation.JPG		

	Description Pier 2, Spalls from Concrete Removal Operation in areas adjacent to Hwy 403 Traffic Lanes (TYP)		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Shfts/columns/Pile Bent Conc rectangular columns with Cast-in-place concrete Intermediate Fair condition	
File Name	44 Pier 2, Spalls from Concrete Removal Operation in areas adjacent to Hwy 403 Traffic Lanes (TYI		



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Description Pier 4, Severe Delam & Spalls on Columns at Pier, looking East	
Elem Grp/Class	Piers/Shfts/columns/Pile Bent
Elem Type	Conc rectangular columns with
Sub Element	
Material Type	Cast-in-place concrete
Locator	Bottom
Defect Descript1	Poor condition
Defect Descript2	
Defect	Spalling
Other	

File Name 45 Pier 4, Severe Delam & Spalls on Columns at Pier, looking East.JPG





Description Pier 5, Severe Delamination & Spalls on Bottom Section of East Column	
Elem Grp/Class	Piers/Shfts/columns/Pile Bent
Elem Type	Conc rectangular columns with
Sub Element	
Material Type	Cast-in-place concrete
Locator	Bottom
Defect Descript1	Poor condition
Defect Descript2	
Defect	Delamination
Other	

File Name 46 Pier 5, Severe Delamination & Spalls on Bottom Section of East Column.JPG




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Struct. ID	282		
	Description Pier 6, Severe Delam on Bottom Section of East Column, looking East		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Shfts/columns/Pile Bent Conc rectangular columns with Cast-in-place concrete Bottom Poor condition Delamination	
File Name	47 Pier 6, Severe Delam on Bottom Section of East Column, looking East.JPG		

	Description Typical Bearing at Sout Piers, South Pier Shown		
Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Piers/Bearings Elastomeric pad South Good condition		
File Name	48 Typical Bearing at Sout Piers, South Pier Shown.JPG		




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Struct. ID	282		
	Description		
	South Abutment		
Elem Grp/Class	Abutments/Abutment walls		
Elem Type	Conventional closed		
Sub Element			
Material Type	Cast-in-place concrete		
Locator	South		
Defect Descript1	Fair condition		
Defect Descript2			
Defect			
Other			
File Name	49 South Abutment.JPG		

	Description		
	North Abutment, looking West		
Elem Grp/Class	Abutments/Abutment walls		
Elem Type	Conventional closed		
Sub Element			
Material Type	Cast-in-place concrete		
Locator	North		
Defect Descript1	Fair condition		
Defect Descript2			
Defect			
Other			
File Name	50 North Abutment, looking West.JPG		




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Struct. ID	282		
	Description South Abutment, Local Severe Delamination & Spalls at Top West Section		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Abutments/Ballast walls Cast-in-place concrete South Poor condition Spalling	
File Name	51 South Abutment, Local Severe Delamination & Spalls at Top West Section.JPG		

	Description South Abutment, Severe Spalls on East Section, looking East		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Abutments/Ballast walls Cast-in-place concrete South Poor condition Spalling	
File Name	52 South Abutment, Severe Spalls on East Section, looking East.JPG		



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Struct. ID	282		
	Description North Abutment, Severe Delam on West Section		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Abutments/Ballast walls Cast-in-place concrete North Poor condition Delamination	
File Name	53 North Abutment, Severe Delam on West Section.JPG		

	Description Local Severe Spalls on North Ballast Wall at Central Section of North Abutment		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Abutments/Ballast walls Cast-in-place concrete North Poor condition Spalling	
File Name	54 Local Severe Spalls on North Ballast Wall at Central Section of North Abutment.JPG		



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Description Typical Bearings at Abutments, West Bearing at South Abutment Shown	
Elem Grp/Class	Abutments/Bearings
Elem Type	Rocker
Sub Element	
Material Type	
Locator	South
Defect Descript1	Fair condition
Defect Descript2	
Defect	
Other	

File Name	55 Typical Bearings at Abutments, West Bearing at South Abutment Shown.JPG
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Description Typical Bearings Abutments, West Bearing at North Abutment Shown	
Elem Grp/Class	Abutments/Bearings
Elem Type	Rocker
Sub Element	
Material Type	
Locator	North
Defect Descript1	Fair condition
Defect Descript2	
Defect	
Other	

File Name	56 Typical Bearings Abutments, West Bearing at North Abutment Shown.JPG
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Struct. ID	282		
	Description		
	Southeast Wingwall		
	Elem Grp/Class	Abutments/Wingwalls	
	Elem Type	Reinforced concrete	
	Sub Element		
	Material Type	Cast-in-place concrete	
	Locator	South	
	Defect Descript1	Good condition	
	Defect Descript2		
	Defect		
	Other		
File Name	57 Southeast Wingwall.JPG		

	Description		
	Southwest Wingwall		
	Elem Grp/Class	Abutments/Wingwalls	
	Elem Type	Reinforced concrete	
	Sub Element		
	Material Type	Cast-in-place concrete	
	Locator	South	
	Defect Descript1	Good condition	
	Defect Descript2		
	Defect		
	Other		
File Name	58 Southwest Wingwall.JPG		




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Struct. ID	282		
	Description		
	Northwest Wingwall		
	Elem Grp/Class	Abutments/Wingwalls	
	Elem Type	Reinforced concrete	
	Sub Element		
	Material Type	Cast-in-place concrete	
	Locator	North	
	Defect Descript1	Good condition	
	Defect Descript2		
	Defect		
	Other		
File Name	59 Northwest Wingwall.JPG		

	Description		
	Northeast Wingwall		
	Elem Grp/Class	Abutments/Wingwalls	
	Elem Type	Reinforced concrete	
	Sub Element		
	Material Type	Cast-in-place concrete	
	Locator	North	
	Defect Descript1	Good condition	
	Defect Descript2		
	Defect		
	Other		
File Name	60 Northeast Wingwall.JPG		




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Struct. ID	282		
	Description		
			South Embankment Slope Protection
		Elem Grp/Class	Embankments & Streams/Slop
		Elem Type	Concrete
		Sub Element	
		Material Type	
		Locator	South
		Defect Descript1	Good condition
		Defect Descript2	
		Defect	
		Other	
File Name		61 South Embankment Slope Protection.JPG	

	Description		
			Rock Protection at North Embankment Slope, looking North
		Elem Grp/Class	Embankments & Streams/Slop
		Elem Type	Concrete
		Sub Element	
		Material Type	
		Locator	North
		Defect Descript1	Good condition
		Defect Descript2	
		Defect	
		Other	
File Name		62 North Slope Protection, looking North.JPG	



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Struct. ID	282		
	Description South Approach, looking South		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Approaches/Wearing surface Asphalt South Excellent condition	
File Name		63 South Approach, looking South.JPG	

	Description North Approach, looking North		
	Elem Grp/Class Elem Type Sub Element Material Type Locator Defect Descript1 Defect Descript2 Defect Other	Approaches/Wearing surface Asphalt North Excellent condition	
File Name		64 North Approach, looking North.JPG	



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