

Bridge Inspection Report

Andrewsville Bridge

Road Name: *Andrewsville Main St*
 Site ID: *B40*
 Structure Type: *Truss-Through*
 Owner: *County of Lanark*
 Built: *1915*
 Length: *47.7 m*
 Width: *5.1 m*
 Spans: *1*
 Span Arrange: *38.5 (truss) 9.2 (girder)*
 Feature Under: *Water*
 Crossing: *Rideau River*
 Location: *500m west of County Rd 23*

Inspection Date: *September-05-19*

Inspector:

Assistant:

Comments:

This bridge has a 5 tonne load limit. It has a very high local value. A historical plaque was added by local residents in 2017. The bridge has outlived its normal service life. Biggest concern is the stability of the dry stone walls on the approaches. The approach railings are mangled. Need a plan to deal with partial collapse of dry stone wall. Approach barriers and bridge railings deficient to current standards. Bridge now closed seasonally from Dec 1 to March 31. Refer to 2018 wading inspection notes for additional information.

Recommended Investigations:

No Special Investigations Recommended

Recommended Capital Works:

No Capital Works Recommendations

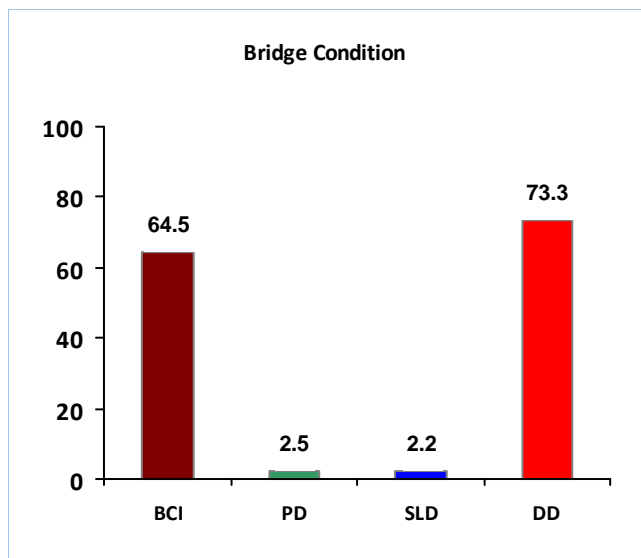
Estimated Replacement Value: \$4,765,000

Estimated replacement value is based on replacement in kind

Estimated Remaining Service Life: 15 Years



AADT: *300* Latitude: *44.95115000*
 Lanes: *1* Longitude: *-75.81913300*
 Skew: *0 °* Orientation: *N-S*
 Speed: *20 km/h* Road Width: *4.4 m*
 Trucks Load Posting: *5*



BCI = Bridge Condition Index MTO Calculation

PD = Parabolic Depreciation
% retained value

SLD = Straight Line Depreciation
% retained value

DD = Defects and Damage
% loss of retained value



Component Inspection Information

Timber-Laminated (1)	Defects 0.0%	
Approach Deck Surface	Damage 0.0%	
Length: 9.2 m	Maintenance None	
Width: 5.5 m	Capital Rec. None	
Height: 0.15 m	Replaced in 2019.	
Timber-Laminated (1)	Defects 0.0%	
Truss Deck Surface	Damage 0.0%	
Length: 38.6 m	Maintenance None	
Width: 4.22 m	Capital Rec. None	
Height: 0.15 m	Good condition. Running boards partly replaced in 2019.	
Timber-Sawn ()	Defects 20.0% Moderate UV Weathering, Moderate Checking	
Running boards	Damage 2.0% Moderate Breakage	
Length: 47.7 m	Maintenance Local repair	
Width: 4.9 m	Capital Rec. None	
Height:	Fully replaced on east approach span, and partially on truss in 2019. Corner splintering evident.	
Timber Curb (2)	Defects 0.0%	
Curbs	Damage 0.0%	
Length: 47.7 m	Maintenance Local repair	
Width: 0.13 m	Capital Rec. None	
Height: 0.13 m	Curbs replaced in 2019. Bolts require re-tightening to compensate for timber drying and shrinkage.	
Steel Pipe Ped Barrier (2)	Defects 0.0%	
Approach Barrier	Damage 40.0% Major Deformation, Moderate Impact	
Length: 100 m	Maintenance Repair Minor Damage	
Width:	Capital Rec. None	Perf Def: Weakened
Height:	Significant damage and settlement on north approach, east side. West approach railing recently damaged and in poor condition.	
Steel-Fabricated (2)	Defects 20.0% Moderate Corrosion	
I-type - Girder	Damage 5.0% Minor Section Loss	
Length: 9.2 m	Maintenance None	Partial Inspection
Width: 0.2 m	Capital Rec. None	
Height: 0.46 m	Much of coating is lost, with rust blisters on the lower flanges. Web strengthened in NE corner in 2019, see image.	



Component Inspection Information

Top Chord (2)	Defects 20.0% Minor Corrosion	
Top chords	Damage 0.0%	
Length: 38.5 m	Maintenance None	
Width: 0.33 m	Capital Rec. None	
Height:	<i>Relatively benign environment means minimal section loss despite loss of coating.</i>	
Bottom Chord (2)	Defects 30.0% Minor Corrosion	
Bottom Chords	Damage 5.0% Minor Section Loss	
Length: 38.5 m	Maintenance None	
Width: 0.33 m	Capital Rec. None	
Height:	<i>Significant coating failure. Bottom chord in NW corner strengthened in 2013. Wading inspection in 2016 and 2018..</i>	
Diagonal/Post/Hanger (30)	Defects 20.0% Minor Corrosion	
Verticals/diagonals	Damage 0.0%	
Length: 4 m	Maintenance None	
Width: 0.15 m	Capital Rec. None	
Height: 0.15 m	<i>Tie plates added to many of the diagonals in 2013.</i>	
Steel Floor Beam (6)	Defects 5.0% Minor Corrosion, Moderate Corrosion	
I-type - Floor Beams	Damage 0.0%	
Length: 5 m	Maintenance None	Partial Inspection
Width: 0.2 m	Capital Rec. None	
Height: 0.5 m	<i>See wading inspection report of 2016, 2018. Little change observed in 2019.</i>	
Stringers (5)	Defects 50.0% Moderate Corrosion	
I-type - Stringers	Damage 10.0% Moderate Section Loss	
Length: 47.7 m	Maintenance None	Partial Inspection
Width: 0.2 m	Capital Rec. None	
Height: 0.3 m	<i>Some stringer ends have been repaired with bolted extensions. Stringers at the west abutment replaced in 2016. Stringers of east approach span replaced in 2019.</i>	
RC Abutment Wall (1)	Defects 30.0% Moderate Leaching/Seepage, Moderate Scaling, Moderate AAR Cracking	
Abutment Stem	Damage 10.0% Major Disintegration	
Length:	Maintenance None	
Width: 7 m	Capital Rec. None	
Height: 2.2 m	<i>AAR related disintegration with leach staining and scaling.</i>	



Component Inspection Information

RC Ballast Wall (1) Ballast Walls Length: Width: 7 m Height: 0.6 m	Defects	0.0%	
	Damage	0.0%	
	Maintenance	None	Partial Inspection
	Capital Rec.	None	
	No concerns noted.		
RC Wing Walls (2) RC wingwall Length: 2.5 m Width: Height: 1.25 m	Defects	50.0%	Moderate Leaching Cracks, Moderate AAR Cracking
	Damage	0.0%	
	Maintenance	None	Partial Inspection
	Capital Rec.	None	
	Serviceable.		
Entire Pier (1) River Pier Length: 2 m Width: 8 m Height: 2.2 m	Defects	20.0%	Major AAR Cracking, Moderate Efflorescence, Moderate Scaling
	Damage	7.0%	Major Disintegration
	Maintenance	None	Partial Inspection
	Capital Rec.	None	
	Not possible to inspect most surfaces. Top is experiencing severe disintegration especially at nosing.		
Steel Sliding Plate (2) Bearings Length: Width: Height:	Defects	0.0%	
	Damage	20.0%	Moderate Section Loss
	Maintenance	None	Partial Inspection
	Capital Rec.	None	
	Historically corroded.		
Rocker or Roller Bearing (4) Roller bearing Length: Width: Height:	Defects	80.0%	Moderate Corrosion, Checking
	Damage	20.0%	Moderate Seizing
	Maintenance	Power Wash	
	Capital Rec.	Replace in 1 year	Perf Def: Seizing
	Bearings are covered in debris at pier and should be power washed. Nested roller bearings at north abutment are heavily rusted.		
Headwall (2) Dry Stone Walls Length: 100 m Width: Height: 2.5 m	Defects	0.0%	
	Damage	20.0%	
	Maintenance	None	
	Capital Rec.	Repair in 5 years	Perf Def: Bulging
	See embankment comments.		



Component Inspection Information

Water Channel (1)	Defects 0.0%	
Streams and Waterways	Damage 5.0% Major Bank/Channel Scour	
Length:	Maintenance None	
Width:	Capital Rec. None	
Height:	<i>Rapid current under bridge. Dam upstream. Bouldery bottom that has some localized scour. Very significant scour hole developed at upstream side of west abutment since 2018. Abutment does not appear to be undercut.</i>	
Embankment (1)	Defects 0.0%	
Embankments	Damage 15.0% Critical Local Instability	
	Maintenance Slope revetment	
	Capital Rec. Repair in 1 year	Perf Def: Unstable
	<i>There is significant flow penetrating through the causeway on the south approach. The dry stone walls on the sides of the embankment have bulged on the east side. Frost action has loosened and disintegrated some of the stonework to a depth of 0.3 m. There is a strong possibility of partial collapse of in particular the east side of the causeway. This collapse could occur with little or no warning. Severe bulging of dry stone wall at NE quadrant, and is in serious condition. Water has partly undercut portions of wall on south approach. Clearance portal at west approach missing in 2019.</i>	
Load Posting (4)	Defects 0.0%	
Signs	Damage 0.0%	
Length:	Maintenance None	
Width:	Capital Rec. None	
Height:	<i>Posting signs of 5 tonnes on both approaches. In 2013 clearance portals were installed at both approaches to restrict vehicles with a height more than 2.4 m from driving onto the bridge. The portal at the west end has already been struck several times. West portal missing in 2019.</i>	



Image 57



West elevation

Image 39



North approach

Image 40



South approach

Image 41



End of south approach span

Image 42



SW end of pier

Image 43



South abutment west corner disintegration



Image 44



Curb splice typ

Image 45



West channel

Image 46



East channel

Image 47



Deck surface

Image 48



SE girder end web strengthening (2019)

Image 49



East abutment wall



Image 50



West end of deck

Image 51



NE bearing

Image 52



West end ballast wall & stringer

Image 53



NW corner bearing

Image 54



NE corner detail

Image 56



Soffit

