

	GOVERNMENT OF NEWFOUNDLAND AND LABRADOR Department of Transportation and Infrastructure	<b>BRIDGE INSPECTION REPORT</b> <b>B07142022-1</b>
<b>Date:</b> 6/16/2022	<b>Inspected By:</b> M Button	<b>Category:</b> Office - Bridge Office
<b>BRIDGE INFORMATION</b>		
<b>Site:</b>	1-115 - CNR VIADUCT - PITTS MEMORIAL DRIVE - R	
<b>SUBSTRUCTURE</b>		
<b>Condition:</b>	P3 - Poor	<b>Bearings:</b> P3 - Poor
		<b>Bearing Seat:</b> F1 - Fair
<b>Comments:</b>	- East abutment in fair condition but fully covered in graffiti. Bearing seat generally too high for inspection but it is covered in spalled concrete. Concrete likely from the deck soffit between the ballast wall and diaphragms or the diaphragms themselves. - Bearings appear in fair condition. - East abutment F1. - North abutment face has several areas with severe spalling exposing reinforcement with severe corrosion. Slope paving in good condition. Other areas have light to moderate width horizontal cracks. Wingwalls have light scaling/weathering and in fair condition. - Bearings and bearing seat in fair condition (inspection limited due to the presence of bird netting. - North abutment F1 to P3. - Southeast abutment has light cracking in isolated locations. Concrete and wingwalls covered in graffiti. Wingwalls have light/narrow map cracking leaching some light efflorescence. Bearing seat in fair condition. Some bearings have moderate width horizontal cracks. - Southeast abutment F1. - Southwest abutment generally has severe delaminations over most of its face or spalls exposing reinforcement with severe corrosion. Concrete and wingwalls covered in graffiti. Wingwall has light/narrow map cracking leaching some light efflorescence. Bearing seat in fair condition. Some bearings have moderate width horizontal cracks. - Southwest abutment P3. - Piers generally in fair to poor condition. Piers 3, 8, 9, 10, 11, 15 and ramp pier 2 have large severe delaminations with wide cracks indicating a spall is imminent or have numerous areas already spalled exposing reinforcement with severe corrosion, P3. Pier's 4, 12, and 13 have isolated areas of surface spalling exposing reinforcement with severe corrosion, F1 to P3. - Bearings on Pier 1 west are cracked, spilt and have severe deformation and need replacement, P1. Some of these bearings are currently planned for replacement. - Pier bearings and bearing seats not inspectable unless a scaffold was in place (pier 1 west & pier 3 for the current rehabilitation works). Bearings placed as P3 due to visible bearings on pier 1 west and most abutments. Bearing seats assumed to be in fair condition overall.	
<b>SUPERSTRUCTURE</b>		
<b>Condition:</b>	F1 - Fair	<b>Expansion Joints:</b> P3 - Poor
<b>Comments:</b>	- All expansion joints generally in poor condition, P3. Concrete end dams are heavily cracked with many areas of disintegration. All seals are full of gravel and likely leaking onto the piers below. All expansion joint embedded steel is exposed on the concrete surface and many have severe damage/tears. Expansion joint over pier 3 east bound has a hole daylighting through the concrete end dams with severe damage to the armoring, P. This was sent to maintenance for immediate repair. Expansion joint over the north abutment is leaking heavily on the east side causing defect acceleration to the ballast wall and girders. The end dam concrete is also spalled in the deck soffit leaving a large hole. - Diaphragms over pier 1 west have large spalls exposing reinforcement with very severe corrosion, P3. Other diaphragms inspection were limited. - All girders generally in fair condition. All other girder defects mentioned below are P3. Most girders have delaminations or spalls approximately 500mm long on the bottom flange near the bearing seat exposing reinforcement and is likely caused from low cover. The defects range from mild to severe (spans 9, 10, 11, & 16). Most girders have small surface spalls to reinforcement along the length of the bottom flange and is likely caused from low cover. The east girder on the north abutment has moderate to severe spalling exposing reinforcement due to concrete end dam spalling/leaking. Girder ends on pier 3 have extensive surface spalling exposing reinforcement with severe corrosion. This is currently being rehabilitated. Ramp span 3 girders have old repairs incomplete near the bearing area exposing reinforcement. Ramp span 4 over the east abutment have severe surface spalls on the bottom flange of the girders exposing reinforcement. - All deck soffits generally in good condition. Deck soffit over pier 3 around the expansion joint has extensive surface spalling exposing reinforcement with severe corrosion. This is currently being rehabilitated. The longitudinal joint/gap separating the east and west bound lanes is causing moderate spalling exposing reinforcement on the deck soffit along the length of the bridge. Span 8 has shallow spalls on the exterior exposing	

reinforcement. Span 9 has severe surface spalling exposing reinforcement with severe corrosion. The defects are concentrated around a leaking deck drain and along the mid-transverse point of the bridges width, below the jersey barriers on the deck above.

**DECK**

<b>Condition:</b>	F1 - Fair	<b>Curbs:</b>	I - Inapplicable
<b>Hand Rail:</b>	P3 - Poor	<b>Roadway Condition:</b>	P3 - Poor
<b>Approach Rail:</b>	F1 - Fair		
<b>Comments:</b>	- Asphalt condition ranges from fair to poor condition. In general, the asphalt has significant material loss from wear. Many potholes cover the surface and has exposed the concrete deck. The waterproofing is exposed or missing in all potholes, P3. One pothole in the concrete deck near pier 13, in the east bound lane, has exposed reinforcement. - Ramp bull nose concrete has severe map cracking throughout with isolated locations of spalling. Crash barrels need replacement. - Structure jersey barrier has numerous areas with wide severe cracks, delaminations and spalls exposing reinforcement, P3. This will be addressed as part of the road work in a coming contract. - East bound approach guiderails in good condition. - No curbs.		

**HYDROLOGY**

<b>Water Velocity:</b>	n/a m/s	<b>Ice Problem:</b>	NA - Not Applicable
<b>Water Depth:</b>	n/a m	<b>Scour Problem:</b>	NA - Not Applicable
<b>Waterway:</b>	03 - Not Applicable	<b>Debris Problem:</b>	NA - Not Applicable
<b>Comments:</b>	- Not applicable.		

**REPLACEMENT/REHABILITATION**

<b>Next Rehab. Date:</b>	2023	<b>Replacement Year:</b>	2040
<b>Antic. Rehab. Cost:</b>	\$1,000,000	<b>Replacement Cost:</b>	\$100,000,000
<b>Recommendations:</b>	- Replace all bearings on pier 1 west. - Complete concrete repairs on ramp span 3 girders. - Complete concrete repairs on piers 3, 4, 8, 9, 10, 11, 12, 13, 15 and ramp pier 2. - Complete concrete repairs on deck soffit spans 8 & 9. - Complete concrete repairs on the girders in spans 9, 10, 11, 16 and ramp span 3. - Replace deck waterproofing and repave all spans. - Replace all expansion joints. - Replace crash barrels on ramp bullnose. - Paint over all graffiti. - Repair north and southwest abutment faces.		

**OBSERVATIONS**

<b>Overall Condition:</b>	F1 - Fair	<b>Requires Further Inspection:</b>	No
<b>Additional Observations:</b>	- Bridge F1 overall with P3 areas. Inspect bridge deck during highway cleanup. Structure has numerous utilities attached to various piers. - Note: Due to the scale of this structure, if a specific area or bridge component is not mentioned, it is in good to fair condition. All sub-structure components, deck soffits, piers and girders where inspected from ground level on 16-June-2022. The deck and other superstructure components were inspected during a route 2 clean up on 29-May-2022.		