

	GOVERNMENT OF NEWFOUNDLAND AND LABRADOR Department of Transportation and Infrastructure	BRIDGE INSPECTION REPORT B12082021-2	
Date: 10/29/2021	Inspected By: Mike Button	Category: Office - Bridge Office	
BRIDGE INFORMATION			
Site:	5-019 - GOOSE RIVER BRIDGE		
Route:	520	Overall Length:	182.2 m
Year Built:	1965	Est: No	Overall Width: 8.8 m
Year Last Rehab.:	1996	Est: No	Roadway Width: 7.7 m
Region:	LABRADOR	Sidewalk Width:	0 m
Jurisdiction:	Provincial	Clearance to R.D. or N.W.L.:	7.5 m
Type of Structure:	10 - Callender-Hamilton or Other Stress Truss Bridge		Max Depth of N.W.L.: 2 m
Purpose of Structure:	04 - Over Non-Navigable Waters		Spans:
Type of Handrail:	04 - Steel Rail		<u>Span No.:</u> <u>Length</u> <u>Span No.:</u> <u>Length</u>
Roadway Surface:	04 - Steel	1	16.5 4 16.5
Alignment Vertical:	01 - Good	2	76.2 5 0
Alignment Horizontal:	01 - Good	3	76.2 6 0
Restrictions:	No		
BRIDGE PHOTOS			
			
SUBSTRUCTURE			
Condition:	P1 - Poor	Bearings:	P1 - Poor
		Bearing Seat:	P3 - Poor
Comments:	- Pier 1 (west) has surface delamination in random locations. South nose previously patched and has moderate map cracking. Nose armor plate has a visible gap behind it. Both bearing grout pads have moderate cracks on the sides. Bearing plate and rocker bearings have moderate corrosion but otherwise in fair condition, F1. - Pier 2 (middle) has no access but upon visual inspection from a distance both creep blocks have moderate efflorescent leakage along the bearing seat joint. Bearing seat appears to have heavy road sand buildup. Bearings un-inspectable. - Pier 3 (east) has moderate disintegration to the nose area with spalling under and around the north bearing towards the south. North bearing extending over pier concrete, P1. Pier concrete otherwise in fair condition. Bearing seat/bearings too high for inspection. - West abutment bearing seat has moderate road gravel coverage. Northwest grout pad is cracked from the exterior to one of the bolts. Bearings/plates have moderate corrosion but otherwise in fair condition. Abutment face and wingwall concrete in fair condition. - East abutment bearing seat has moderate road gravel coverage. Both the north and south anchor bolts bent. Bearing grout pads heavily disintegrated with voids under the plates. Bearings/plates have moderate corrosion, P3. Abutment face and wingwall concrete in fair condition. - Overall, substructure placed as P1 due to pier 3 nose concrete. F1		

remainder. Bearings placed as P1 due to pier 3 north bearing overhang. Bearing seats/grout pads placed as P3 due to eastern abutment grout pads.

SUPERSTRUCTURE

Condition:	P1 - Poor	Expansion Joints:	I - Inapplicable
Comments:	- No expansion joints, just gaps to abutment back walls. - Southwest exterior stringer to girder connection over the west abutment has a tear in the connective angle passing around 3 bolts on the south side of the connection. - Northeast exterior stringer to girder connection over the east abutment has a tear in the connective angle passing around/through ~2 bolts on both the north and south sides of the connection. - Two channel braces between pier 3 and the east abutment are twisted and have light tearing near the top flange. - Various bolts missing/loose on the eastern half of the bridge in the top chord bracing/transverse truss at the middle bottom node. - Inspected all visible elements of the "through truss" bridge walking across the deck looking up at the truss members and top chord, looking below through the decking at the girder/stringer connections, looking over the handrails at the bottom chords and by using binoculars from below at the abutment levels and in the river bed. All gusset plates/batten plates/splice plates/bolts/nuts/rivets, stringer to girder connections, and the various types of members used had moderate to severe corrosion but otherwise in fair condition. Corrosion is especially heavy over the initial spans to the first pier from each approach. In these areas various members have extreme corrosion and have steel delamination. Overall, superstructure placed as P1 due to tears in connections described above. F1 remainder with moderate corrosion.		

DECK

Condition:	F2 - Fair	Curbs:	F1 - Fair
Hand Rail:	F2 - Fair	Roadway Condition:	P3 - Poor
Approach Rail:	P3 - Poor		
Comments:	- Approach/exit guiderail has lost corrugation on the west side, damaged on all ends, has overgrown vegetation, has several split posts throughout, are not connected to end blocks, do not have collision dampening posts prior to end blocks, and are complete with hazard markers but damaged on the west side. - End blocks have small spalls near their tops. - Structure guiderail in fair condition, many posts have missing bolts at the custom connection to the exterior girders but posts are welded/bolted in other locations and are secure. Posts have moderate corrosion. - Steel deck grating has isolated locations of damage. - Curbs are a HSS section with moderate corrosion. - Approach asphalt has moderate rutting and heavy cracking on both sides, P3.		

HYDROLOGY

Water Velocity:	0.5 m/s	Ice Problem:	N - No Problem
Water Depth:	Deep m	Scour Problem:	N - No Problem
Waterway:	01 - Adequate	Debris Problem:	N - No Problem
Comments:	- Water level highly variable.		

REPLACEMENT/REHABILITATION

Next Rehab. Date:	2022	Replacement Year:	2030
Antic. Rehab. Cost:	\$150,000	Replacement Cost:	\$5,000,000
Recommendations:	- Replace connections on southwest and northeast corners. - Replace twisted channel stringer braces and other channels with severe corrosion. - Potentially replace middle 3 stringers just to the west of pier 3, look heavily corroded from below. - Replace/tighten missing bolts in the top chord bracing/transverse truss at the middle bottom node. - Repair concrete defects on piers especially the north side of pier 3 under the bearing seat. - Clean abutment bearing seats and grout under the bearing plates. - Potentially sandblast connections for detailed inspections and repaint. - Clear brush on approaches. - Replace sections of approach guiderail. - Consider full structural replacement of bridge.		

OBSERVATIONS

Overall Condition:	P3 - Poor	Requires Further Inspection:	No
Additional Observations:	- Hazards, heavy traffic, slopes and traversing rip-rap. Inspection limited below structure with use of binoculars. Traffic control needed for inspection. - Paint peeling severely in many locations limited a detailed inspection of		

connections.

LEGEND:

Condition Definitions:

1 - *Good - [discontinued code].
 2 - *Fair - [discontinued code].
 3 - *Poor - [discontinued code].
 4 - *Unsafe - [discontinued code].
 G - Good.

F2 - Fair.
 F1 - Fair.
 P3 - Poor.
 P1 - Poor.
 P - Poor.

C - Unsafe (Closed to Public).
 U - Uninspectable.
 I - Inapplicable.

Problem Definitions:

N - No Problem.
 P - Possible Problem.
 K - Known Problem.
 NA - Not Applicable.

Category Definitions:

Maint. - Maintenance.
 Eng. - Engineering.
 Office - Bridge Office.

PHOTO GUIDELINES:

Inspection Photos:

- Please provide photos using guidelines below:
- Any item which inspector feels should be documented by photograph
 - All items noted above as being F3, P1, P, or C
 - Any evidence of known ice, scour, debris, waterway problems

INSPECTION PHOTOS

Department of Transportation and Infrastructure, Government of Newfoundland and Labrador 2021.