

	GOVERNMENT OF NEWFOUNDLAND AND LABRADOR Department of Transportation and Infrastructure	BRIDGE INSPECTION REPORT B10132021-1	
Date: 10/6/2021	Inspected By: Mike Button	Category: Office - Bridge Office	
BRIDGE INFORMATION			
Site:	2-072 - RANDOM ISLAND CAUSEWAY BRIDGE		
Route:	231	Overall Length:	33.5 m
Year Built:	1978	Est: No	Overall Width: 11.4 m
Year Last Rehab.:		Est: No	Roadway Width: 10.8 m
Region:	CENTRAL EAST	Sidewalk Width:	0 m
Jurisdiction:	Provincial	Clearance to R.D. or N.W.L.:	3 m
Type of Structure:	01 - AASH to Girder	Max Depth of N.W.L.:	4 m
Purpose of Structure:	03 - Over Navigable Waters	Spans:	
Type of Handrail:	01 - Aluminum Rail	<u>Span No.:</u>	<u>Length</u>
Roadway Surface:	02 - Asphalt	1	23.5
Alignment Vertical:	01 - Good	2	0
Alignment Horizontal:	01 - Good	3	0
Restrictions:	No	4	0
		5	0
		6	0
BRIDGE PHOTOS			
			
SUBSTRUCTURE			
Condition:	P3 - Poor	Bearings:	U - Uninspectable
		Bearing Seat:	P3 - Poor
Comments:	- Southeast corner of abutment, above the bearing seat has medium-severe spalling to reinforcement caused from a heavily deteriorated expansion joint above. - Southeast abutment corner, 150mm below the bearing seat, has a wide horizontal crack. Monitor area on future inspections for spalling under the girder, P3. Abutment concrete face has heavy graffiti and medium alligator cracking throughout. - West abutment has severe scour under the northwest corner of the structure. Structure supported on piles so structurally ok. Footing has wide horizontal cracks. Southwest corner of abutment has a wide vertical crack from fill level to the bearing seat. Crack splits into several smaller cracks near the bearing seat. Monitor area on future inspections for spalling under the girder, P3. Abutment concrete face has heavy graffiti and medium-severe alligator cracking throughout. - All bearings too high for inspections. - Detailed seat inspection not carried out due to height. Exterior conditions noted above, interior areas look to be in fair condition from below, F1. - All wingwalls have severe alligator cracking with mild efflorescence. Construction joints are also deteriorating along bearing seat, P3.		
SUPERSTRUCTURE			

Condition:	P3 - Poor	Expansion Joints:	P3 - Poor
Comments:	- Girder end blocks on structure corners have medium cracking with efflorescence throughout. Exterior girders, in areas of deck drains, have mild spalling, medium efflorescent build up and heavy rust staining, P3. Interior girders in fair condition with some small fist sized spalls to the bottom flange, F1. - Bottom of deck has very sporadic light cracking with efflorescence throughout. Bottom of deck between first two exterior girders, especially near the expansion joints and deck drain locations, have medium cracking with efflorescence and heavy rust staining. Interior sections of deck has some locations with small spalls. - Expansion joints leaking over both abutments. Infill concrete around steel embedment's heavily cracked or disintegrated in the curb area. Steel embed heavily corroded, especially on the southeast corner. - South curb is disintegrated around most deck drains and has long wide cracks over the west approach. - North curb has mild rust staining, cracking and efflorescent leakage, especially around the drip bead.		

DECK

Condition:	F1 - Fair	Curbs:	P3 - Poor
Hand Rail:	F2 - Fair	Roadway Condition:	P3 - Poor
Approach Rail:	F1 - Fair		
Comments:	- Approach/exit rails in fair condition, no end blocks, and hazard markers are in place. - Handrail in good condition. - Asphalt in fair condition with the exception of expansion joint areas. Expansion joints paved over, and surrounding areas are heavily cracked. Approach slabs have potholes, P3. - Most deck drains worn through, causing deck concrete cavities around them, accelerated deterioration to girders and bottom of deck, P3. - Deck concrete generally in fair condition, F1. - Curbs around several deck drains disintegrated, P3.		

HYDROLOGY

Water Velocity:	Tidal m/s	Ice Problem:	N - No Problem
Water Depth:	Tidal m	Scour Problem:	K - Known Problem
Waterway:	01 - Adequate	Debris Problem:	N - No Problem
Comments:	None		

REPLACEMENT/REHABILITATION

Next Rehab. Date:	2024	Replacement Year:	T.B.D.
Antic. Rehab. Cost:	\$500,000	Replacement Cost:	\$5,000,000
Recommendations:	- Abutments/wingwalls heavily cracked with efflorescence, can only superficially rehab this. - Many girders have deterioration around deck drains. South curb (likely the north too), all deck drains and expansion joints need replacement. Rehab at least \$500,000, could extend life to 2035-2040 as an estimate. Replacement cost likely \$5,000,000+ due to diversion and new structure. - Consider/recommend replacement of structure within 5 years over rehab.		

OBSERVATIONS

Overall Condition:	P3 - Poor	Requires Further Inspection:	No
Additional Observations:	- Bridge girders and abutments have a lot of bird feces. - Utilities for Random Island attached to north side of structure. - Hazards, bridge at crest of vertical curve, medium traffic, and steep slopes.		

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 P3, P1, P, or C
 - Any evidence of known ice, scour, debris, waterway problems

INSPECTION PHOTOS