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|  | GOVERNMENT OF NEWFOUNDLAND AND LABRADOR Department of Transportation and Infrastructure | BRIDGE INSPECTION REPORT B09162021-5 | |
| Date: 9/1/2021 | Inspected By: Mike Button | Category: Office - Bridge Office | |
| BRIDGE INFORMATION | | | |
| Site: | 3-050 - BERNARD'S BROOK BRIDGE BAY D'ESPOIR | | |
| Route: | 360 | Overall Length: | 35.4 m |
| Year Built: | 1966 | Est: No | Overall Width: 9 m |
| Year Last Rehab.: | | Est: No | Roadway Width: 7.4 m |
| Region: | CENTRAL WEST | Sidewalk Width: | 0 m |
| Jurisdiction: | Provincial | Clearance to R.D. or N.W.L.: | 4 m |
| Type of Structure: | 01 - AASH to Girder | Max Depth of N.W.L.: | 0 m |
| Purpose of Structure: | 04 - Over Non-Navigable Waters | Spans: | |
| Type of Handrail: | 01 - Aluminum Rail | <u>Span No.:</u> | <u>Length</u> |
| Roadway Surface: | 02 - Asphalt | 1 | 23.8 |
| Alignment Vertical: | 02 - Adequate | 2 | 0 |
| Alignment Horizontal: | 01 - Good | 3 | 0 |
| Restrictions: | No | 6 | 0 |
| BRIDGE PHOTOS | | | |
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| SUBSTRUCTURE | | | |
| Condition: | P1 - Poor | Bearings: | U - Uninspectable |
| | | Bearing Seat: | P1 - Poor |
| Comments: | - Wingwalls have heavy spalls with exposed reinforcement, other areas on wingwalls have alligator cracking with efflorescence. - North abutment has extreme spalling, ~30% of the face is disintegrated. No visible rebar, P3 - Northeast bearing seat/pad has a severe spall to the face of the bearing pad. Upon closer inspection, concrete is solid under the bearing pad but needs to be repaired in short order, P1. From mid-span to the east side, bearing areas between girders are heavily disintegrated. However, not under the girders at this time, P3. - South abutment has a construction joint starting to opening up-2/3 of the way up. River face in fair condition with minor light cracking. - The southeast bearing area and corner of abutment has several medium sized spalls with heavy efflorescence to exposed reinforcement. Concrete in this area underway to disintegration. Bearings too high for inspection. | | |
| SUPERSTRUCTURE | | | |
| Condition: | F1 - Fair | Expansion Joints: | P3 - Poor |

Comments: - Girders in fair condition, east girder has medium spalls. Efflorescent deposits/staining visible at the deck/girder intersection indicating the deck is cracked, F1. - Underside of deck has mild cracking with efflorescence, F1. - Both expansion joints have evidence of leaking, P3.

DECK

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| Condition: | P1 - Poor | Curbs: | P1 - Poor |
| Hand Rail: | P1 - Poor | Roadway Condition: | P1 - Poor |
| Approach Rail: | P3 - Poor | | |

Comments: - Approach/exit rails have some damage and getting old, P3. Hazard markers in place. - Asphalt in fair condition F2. Curb/soffit has extreme disintegration and needs replacement. Curb and deck rebar mats totally exposed in some locations. Anchor bolts for handrail also exposed in some locations, P1 for Curbs and handrail for this reason. - Handrail itself can be salvaged and reused once curb is replaced. - Remainder of deck looks to be ok but there are some leaks/efflorescent deposits on the girders indicating deck cracking, F1 for now.

HYDROLOGY

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|------------------------|---------------|------------------------|----------------------|
| Water Velocity: | 0.8 m/s | Ice Problem: | N - No Problem |
| Water Depth: | 0.3 m | Scour Problem: | P - Possible Problem |
| Waterway: | 01 - Adequate | Debris Problem: | N - No Problem |

Comments: - River channel very wide but flows were reduced to a central channel which could easily be crossed on foot.

REPLACEMENT/REHABILITATION

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| Next Rehab. Date: | 2022 | Replacement Year: | 2024 |
| Antic. Rehab. Cost: | \$400000 | Replacement Cost: | \$1800000 |

Recommendations: - Bridge could be saved with a major rehab to abutments and a curb/partial deck replacement. However, highly recommend an evaluation for a total replacement. Replacement in 2024-2025 if no rehab is done. If rehabbed, bridge should last until 2035-2040.

OBSERVATIONS

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| Overall Condition: | P1 - Poor | Requires Further Inspection: | No |
|---------------------------|-----------|-------------------------------------|----|

Additional Observations: - Overall condition P3. Several areas need repair in 1 year so recommending a rehab in 2022. - Monitor spall and concrete condition to northeast bearing area. - Hazards, the vertical alignment places the bridge at the bottom of a blind hill creating a more dangerous traffic hazard. Good place to park off northwest approach/exit behind the guiderail. Additional hazards, steep slopes and negotiating large rocks.

LEGEND:

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|------------------------------------|------------|--------------------------------|-----------------------------|------------------------------|
| Condition Definitions: | | | Problem Definitions: | Category Definitions: |
| 1 - *Good - [discontinued code]. | F2 - Fair. | C - Unsafe (Closed to Public). | N - No Problem. | Maint. - Maintenance. |
| 2 - *Fair - [discontinued code]. | F1 - Fair. | U - Uninspectable. | P - Possible Problem. | Eng. - Engineering. |
| 3 - *Poor - [discontinued code]. | P3 - Poor. | I - Inapplicable. | K - Known Problem. | Office - Bridge Office. |
| 4 - *Unsafe - [discontinued code]. | P1 - Poor. | | NA - Not Applicable. | |
| G - Good. | P - Poor. | | | |

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