



TOWN OF MINTO

DATE: March 9, 2018

REPORT TO: Mayor and Council

FROM: Mike McIsaac, Road Foreman

SUBJECT: Bridge and Culvert Biennial Inspection Report

STRATEGIC PLAN:

11.3 Develop a transportation plan that includes a roads and bridges inventory and capital replacement program keeping in mind sustainable funding sources, impact on tax rate, and minimum construction and maintenance standards.

BACKGROUND

The Town is obligated to complete biennial inspections of any structure which is greater than or equal to 3m in span whether it being a bridge or culvert. Burgess Engineering Inc completed the latest inspection in March of 2017 and has since completed the individual reports. The full report is available upon request and attached is the recommended replacement priority list.

General repair and maintenance is completed as required on these structures throughout the year and a visual inspection is completed annually during spring sweeping and washing of all bridge and culvert decks by staff.

Over the past eight months all structures were exposed to extreme flows caused by the June 23, 2017 rainfall and the February 20, 2018 “flash melt and rain” event. In addition to checking and assessing roadways, staff visually inspected key structures to see if there were visible signs of failure that would require Burgess Engineering to re-evaluate the condition.

Following February 20 event, staff noticed areas of erosion that might impact the integrity of the structure and embankments on the Brunswick St Culvert in Palmerston. Burgess Engineering was called in to complete a structural inspection on this culvert compared to the 2017 inspection. The attached updated report and recommendation from Burgess Engineering Inc. confirms there is no immediate threat but the structure should be inspected every six months.

During the 2017 inspection this Brunswick St Structure received a Bridge Condition Index (BCI) of 52.9 leaving approximately four years remaining. This Structure was included in the \$2.5 million SCF funding application in 2015 along with water and sewer servicing improvements in the neighbourhood. The application was eventually denied funding. The replacement value of this culvert was \$575,000 at that time.



**COMMENTS:**

If there is a failure, which results in the closure of this culvert there is still the box culvert on Whites Road (Wellington Road 5) which is used as the primary route. If both culverts were compromised during the same time period, emergency services would be severely delayed in response times without a direct access to and from the local Hospital.

FINANCIAL CONSIDERATIONS:

This project could be partially funded through a future grant application. The culvert was not identified in the Five Year Project Plan presented at the 2018 budget.

RECOMMENDATION:

That Council of the Town of Minto receives the Road Foreman's report dated March 12, 2018 Bridge and Culvert Biennial Inspection and directs staff to have the Brunswick St culvert in Palmerston inspected every six months to monitor the rate of deterioration and that \$600,000 for the culvert replacement be identified in the five year project plan for 2022.

Mike McIsaac
Road Foreman



March 8, 2018

Mike McIsaac
Public Works,
Road Foreman & Drainage Superintendant
Town of Minto

Re: Bridge N, Brunswick St. Drain, Sub-structure Flood Review

Dear Mike,

Based on our field review of the above captioned site on Wednesday March 7th we offer the following summary.

This concrete box culvert (non-rigid) is in poor condition. The top slab has advanced concrete deterioration (break-down) at both the inlet and outlet. This deterioration is advancing inward and starting to affect the inner barrel. In addition the walls are rotating inward due to soil pressure and insufficient rigidity of the connection to the top slab.

This structure is exposed to fast water flows. The existing embankment protection is comprised of various concrete sections and is slightly undermined at the inlet.

Currently there is no sign of critical structural distress. However due to the advanced state of deterioration, wall inward movement, and fast water flows, we recommend this culvert be inspected every 6 months until replaced or closed.

Let me know if you require any clarifications.

Yours truly,

A handwritten signature in blue ink, appearing to read "ADB", is written over the printed name of Andrew D. Burgess.

Andrew D. Burgess, P.Eng
President
ADB/mb

Burgess Engineering Inc., Consulting Engineers
137 Lake Street, Grimsby, ON, L3M-4M6 (905) 741-5427
Email: bei@mailburgesseng.com