



Staff Report PW2022-053

Title of Report: PW2022-053 Bridge S114 Load Evaluation and Recommended Load Posting
Department: Public Works
Branch: Transportation & Public Safety
Council Date: December 7, 2022

Recommendation:

Be it resolved that Council receive Staff Report PW2022-053 for information; and
That Council approve the recommendation to post Bridge S114 as a triple load posting of 12 Tonnes, 18 Tonnes and 23 Tonnes by by-law No. 2022-168; and
That Council approves the yield to oncoming traffic signage to be posted in the westbound and eastbound lanes on Southgate Road 04 at the approaches of Bridge S114.

Background:

A Structural Evaluation Report was prepared by R.J. Burnside & Associates for Bridge S114, which is located on Southgate Road 04 between Southgate Sideroad 57 and Southgate Sideroad 55 in March 2022. Bridge S114 is a single-lane steel pony truss bridge with concrete deck that was constructed in 1930. The 2022 Bridge Condition Index (BCI) is 59.8 condition rating, which is in the upper level of scoring rating which generally in the range of fair to poor condition, ranked 29th of Southgate's bridges for poorest rating scoring.

An emergency repair was performed in October 2018 to reinforce the severed bottom tension cord.

The Structural Evaluation Report based on the Canadian Highway Bridge Design Code identifies the bridge should be posted with a triple posting of:

12 Tonnes, 18 Tonnes and 23 Tonnes

per 3, 4 and 5 axle vehicles respectively, which has been recommended by RJ Burnside Engineering.

Staff Comments:

The Report recommends a requirement to monitor the deterioration of the bottom chord connecting to the truss on the east side until repaired.

The Report also recommended consulting with the local emergency fire responders of any load capacity concerns. The Dundalk and Wellington North Fire Departments have indicated no concerns with the bridge posting proposed weight restrictions.

Public Works staff are informed if a plow truck is required for sanding on that road section, that the truck be near empty with sand load for crossing over the bridge.

RJ Burnside has provided an estimated quote for the repairs of \$200,000.00, with a work plan including:

- Strengthen/replace Web Member 3
- Repair bottom chord Member 11 where the angles have severe section loss near abutment
- Strengthen top chord Member 9 and 10

The scope of this work above would result in the load posting increasing from 12/18/23 to 21/33/44.

If the load posting of 21/33/44 is not sufficient, additional repairs to Members 4 and 7 could be completed, however there would be additional cost associated with those repairs.

Staff recommends that the westbound and eastbound lane approaches to Bridge S114 on Southgate Road 04 have Yield to Oncoming Traffic signage installed.

Financial Implications:

The Burnside S114 load capacity evaluation report was \$9,000.00 excluding HST.

To post the triple load posting and Yield to Oncoming Traffic signage will cost approximately \$400.00.

These works are funded out of the Bridge Operational Budget.

Communications & Community Action Plan Impact:

Goal 5 - Upgrading our "Hard Services"

Action 5:

The residents and businesses of Southgate recognize our linear services - roads, bridges, water and sewer works, for example - to be a fundamental purpose of municipal government. This infrastructure needs to be serviceable and sustainable so that our businesses and communities can thrive and grow.

Concluding Comments:

Staff recommendation is that Council receive Public Works Staff Report 2022-053 for information and;

1. That Council approve the recommendation to post Bridge S114 as a triple load posting of 12 Tonnes, 18 Tonnes and 23 Tonnes by by-law No. 2022-168 and;
2. That Council approves the yield to oncoming traffic signage to be posted in the westbound and eastbound lanes on Southgate Road 04 at the approaches of Bridge S114.

Respectfully Submitted,

Dept. Head: ***Original Signed By***
Jim Ellis, Public Works Manager

CAO Approval: ***Original Signed By***
Dave Milliner, CAO

Attachments: None