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Date December 5, 2023 **Report No.** 2023-682

To Chair and Members
Committee of the Whole - Operations

From Inderjit Hans, P. Eng., PMP
Commissioner, Public Works Commission

1.0 Type of Report

Consent Item	[ ]
Item For Consideration	[X]

2.0 Topic Clarence Street Rail Line Update [Financial Impact – None]

3.0 Recommendation

A. THAT Report No. 2023-682 Clarence Street Rail Line Update BE RECIEVED; and
B. THAT Staff BE DIRECTED to proceed with negotiations with Ingenia to agree to a reasonable cost sharing agreement for the construction of Option 1 as detailed.

4.0 Executive Summary

The Burford Spur within the City of Brantford travels adjacent to Clarence Street and Clarence Street South. This rail line solely supports product shipments to Ingenia Polymers Corp. The railway track alignment within the Clarence Street South roadway has been claimed as the cause of accidents in this location over the years.

The City retained the engineering services of Stantec Consulting Ltd. for the Colborne and Clarence Street Rail Realignment Feasibility Study in June 2023. Various options were explored which have been detailed further in this report.

Option #1 adjusts the rail line to better align the crossing of the Colborne Street intersection to an approximately 90 degree angle and achieves the goal of moving the rail line from within the northbound travel lanes to the boulevard. The alignment of this option has minimal impact on the surrounding neighbourhood and is anticipated to reduce vehicular accidents/incidents compared to existing conditions. It is recommended that the City proceed with realignment Option #1. In 2024 staff will proceed with pre-design investigations and the remaining required funds will be identified within the annual Multi-Year Budgeting process.

5.0 Purpose and Overview

The purpose of this report is to update Council on the results of the Clarence and Colborne Street Rail Realignment Feasibility Study that was undertaken this year.

6.0 Background

In 2014 Canadian National Railway (CNR) sold two portions of railway lines to 2427811 Ontario Inc. for continued railway operations. The lines consisted of:

- Part of Burford Spur within the Corporate City Limits of Brantford, Ontario extending from MP 0.40 to MP 1.14; and
- Part of the TH&B Spur at Brantford, Ontario extending from MP 61.00 to MP 62.40, and all connecting branch lines and spurs.

The Burford Spur travels directly adjacent to the northbound travel lanes and within the municipal right-of-way of Clarence Street (from Nelson Street to Colborne Street) including Clarence Street South (from Colborne Street to Greenwich Street). When the rail line crosses into the Colborne Street right-of-way it enters into the Clarence Street South right turn travel lane before returning to the boulevard approximately 70m south of Colborne Street (see Figure 1).

Figure 1 – Clarence Street – Southbound View

This rail line solely supports the product shipments to Ingenia Polymers Corp. (Ingenia). Ingenia "is one of the most trusted thermoplastics providers in the world today, and the preferred supplier to some of the most trusted household brands."[1] Ingenia was founded in Brantford in 1986 and has expanded worldwide. The rail line is operated twice per week by slow moving shuttle wagon railcars.

The alignment of the railway tracks within the travel portion of the roadway have been claimed as the cause of accidents in this location over the years. Two wheeled motor-powered and active transportation based trips have struggled when crossing the rail tracks.

In July 2019 the City, through its Consultant CIMA+, received the final Railway Grade Crossings Safety Review – Ingenia Polymers Crossings Report. This report reviewed each grade crossing on this rail line and identified various surface and warning sign findings and countermeasures. Operational Services completed all safety related countermeasure recommendations.

In July 2022 the City, through its Consultant True North Safety Group, received the In-Service Road Safety Review – Final Report that reviewed the Clarence/Colborne intersection concerns from a traffic perspective. This report utilized video data and vehicle data to identify pedestrian and cyclist hazards (including other collision types) and provided short, medium and long term

[1] Ingenia Polymers Corp. website https://www.ingeniapolymers.com/about-us/

remedial measures and was discussed in Council Report 2023-618[2] from the Vision Zero Road Safety Committee. Operational Services completed the short term measures with the medium and long term measure to be address in future infrastructure capital projects.

Following meetings and discussions with Ingenia in 2022-2023 it was understood that the potential for realignment of the rail line would require a Feasibility Study to be initiated by the City with Ingenia being highly involved stakeholders. The City initiated the process in Q2 2023.

7.0 Corporate Policy Context

This work aligns with the following Corporate Policy:

- City of Brantford Strategic Priorities 2023-2026: Strategic Theme 3 Move People More Effectively.

8.0 Input From Other Sources

Input for this report has been provided by various City of Brantford departments, including, Finance, Legal Services and Operational Services. Additional input for the Feasibility Study was received by Ingenia Polymers Corp. and Stantec Consulting Ltd.

9.0 Analysis

In June 2023, the City retained the engineering services of Stantec Consulting Ltd. (Stantec) through the public procurement process (RFP 2023-66) for the Colborne and Clarence Street Rail Realignment Feasibility Study. The contract was executed on July 13, 2023 at which time Stantec began background review and investigations.

The project's hybrid Kick-off Meeting was held on August 2, 2023 and was attended in-person by City and Ingenia staff, and virtually by Stantec. Staff reviewed the current road/rail alignment as well as the scope of the assignment, deliverables (see Appendix 1) and initial limitations. The City supplied Stantec with all historical studies, assessments, Master Plans, etc. and Stantec immediately began preliminary design of potential alternatives for realignment.

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2 https://brantford.escribemeetings.com/_layouts/escribe/pages/landing.aspx?action=report&Id=3788

To assist in their work, Stantec utilized numerous standards and documents in addition to the few named below:

- Transport Canada's Grade Crossing Standards, Jan 2019;
- Transport Canada's Grade Crossing Regulations, SOR/2014-275, Mar 2019;
- Transport Canada's Standards Respecting Railway Clearances, May 1992;
- City of Brantford-2020 Brantford Transportation Master Plan Update-2051 Addendum, Sept 2021;
- Railway Grade Crossing Safety Review (CIMA), July 2019.

Stantec explored various options which have been detailed in their final report.

9.1 Option 1 – Preferred Realignment

Option 1 proposes to shift the rail line towards the east of the right-of-way (see Figure 2). This shift will better align the crossing of the Colborne Street intersection from its existing 60 degree angle to an approximately 90 degree angle. The realignment consists of three separate horizontal curves of track geometry where some curves are tighter (higher, more compressed) than existing. One curve is higher than CN requirements for new track construction, however, the City has been advised that the existing track geometry, current restricted train speed and rail line volume justify the proposed track realignment.

Figure 2 – Option 1

This option will require additional modifications to the existing traffic signals, streetlight poles, hydro pole, sidewalk and curbing. Despite the current flangeway gap and depths meeting Transport Canada's regulatory requirements, it has been recommended to include a Safety Railseal product called Shallow Flangeway (see Figure 3) in the design and construction of the realignment. This will result in a grade crossing that is safer and easier to for all types of motor vehicles and active transportation based trips.

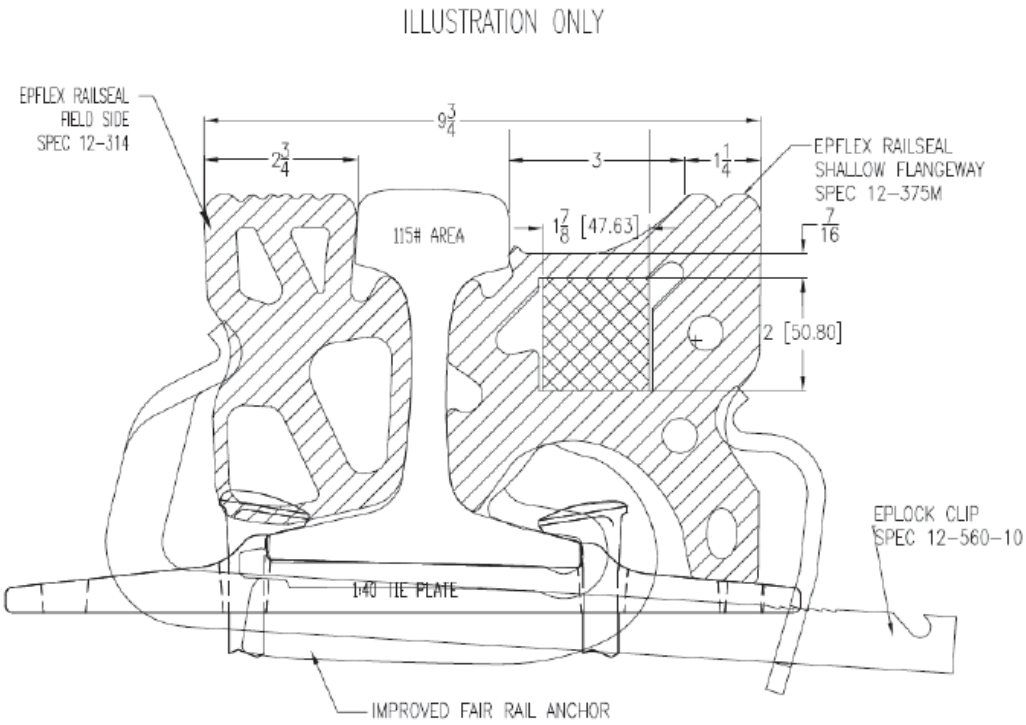

Figure 3 – Shallow Flangeway

The alignment of this option has minimal impact on the surrounding neighbourhood and is anticipated to reduce vehicular accidents/incidents compared to existing conditions.

9.2 Option 2 – Lower Degree of Curvature

Option 2 follows a similar layout as Option 1, however provides a lower degree of curvature (see Figure 4). This option aligns the crossing of the Colborne Street intersection from its existing 60 degree angle to an approximately 70 degree angle.

Figure 4 – Option 2

This option will also require the additional modifications to the existing traffic signals, streetlight poles, hydro pole, sidewalk and curbing as with Option 1.

While Option 2 includes a curvature that provides an easier turning radius for rail cars (rolling stock), the conflict of rails within the driving portion of the roadway will still exist.

9.3 Alternative Options

Stantec explored further alternative alignment options, however constraints with each deemed them unsuitable to advance to further investigation. This included:

- Realigning the rail line further to the east of the Clarence Street and Clarence Street South corridor (major property acquisition, building demolition);
- Realigning the rail line to Newport Street (full closure of Newport Street, impacts to 1100 Clarence Street S., major property acquisition, building demolition).

9.4 Other Benefits

Additional benefits would be recognized by the City if Option #1 was constructed. They include:

- Improved intersection operability – by adjusting the crossing angle to a more preferred 90 degree angle;
- Improved northbound left turn movements – by removing the rail line from the traveled portion of the roadway;
- Improved pedestrian movement – by clearly separating the pedestrians away from the rail line area;
- Reduced signalization and signage – by removing the rail/traffic overlap on Clarence Street South the advance rail traffic signals can be redesign and removed

Based on Stantec's investigations, while there is no identified cost savings between the two detailed alternatives, Option 1 has been deemed as the preferred solution and recommended to move forward to detailed design and construction. This preferred realignment option is not only predicted to reduce the risk of accidents/incidents but also provides a cost effective solution with minimal impacts on the surrounding neighbourhood.

10.0 Financial Implications

There are no direct financial implications associated with receiving this report.

The estimate for the preferred Option 1 has been reviewed and provided by Stantec within the Feasibility Study report. It is estimated that the design and construction would cost approximately $900,000. Preapproved funding will be utilized in 2024 for pre-design investigations and the remaining funds will be identified within the annual Multi-Year Budgeting process. The City will also be working collaboratively with Ingenia for appropriate funding strategies and actively look for grant funding opportunities.

11.0 Climate and Environmental Implications

This Report does not have any direct climate and environmental implications. However, the alternatives addressed within this report will have some impact on construction and vehicle greenhouse gas (GHG) emissions for the duration of

construction. Both Options 1 and 2 would expel equivalent GHG emissions as effort and extents are identical. At this time, GHG emissions from construction cannot be quantified since construction variables such as equipment type, number, hours of operation, fuel type, etc. are not yet known.

12.0 Conclusion

Clarence Street is an arterial roadway in the City of Brantford. The Burford Spur rail line that travels adjacent to Clarence Street and Clarence Street South solely supports product shipments to Ingenia Polymers. Ingenia Polymers was founded in Brantford in 1986 and has since expanded worldwide.

By proceeding with the preferred realignment option detailed in Section 9.1, the City and Ingenia would be working together to remove the rail line from the roadway. This will result in a grade crossing that is safer and easier to for all types of motor vehicles and active transportation based trips. Effectively, this option has minimal impact on the surrounding neighbourhood and is anticipated to reduce vehicular accidents/incidents compared to existing conditions.

Inderjit Hans, P.Eng., PMP
Commissioner, Public Works Commission

Prepared By:

Jennifer Elliott, LET, C.E.T., Director of Engineering Service

Attachments (if applicable)

Appendix 1 - Rail Realignment Feasibility Study by Stantec Consulting Ltd.

Copy to:

In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required	[ ] yes	[X] no
Agreement(s) or other documents to be signed by Mayor and/or City Clerk	[ ] yes	[X] no
Is the necessary by-law or agreement being sent concurrently to Council?	[ ] yes	[X] no