



Staff Report for Committee of the Whole Meeting

Date of Meeting: June 19, 2018

Report Number: SRPRS.18.118

Department: Planning and Regulatory Services
Division: Development Engineering & Transportation

Subject: **SRPRS.18.118 - Roundabout Operational Review for Tower Hill Road at Selwyn Road and Rollinghill Road**

Purpose:

To inform Council of the recommendations provided by the Roundabout Operational Review for the intersections of Tower Hill Road at Selwyn Road and Tower Hill Road at Rollinghill Road, and to seek Council approval for funding the remedial measures identified for these locations.

Recommendation(s):

- a) That Council receive SRPRS.18.118 containing the report on the Roundabout Operational Review for Tower Hill Road undertaken by CIMA+, dated April 17, 2018;
- b) That Council endorse the recommendations of the Roundabout Operational Review for Tower Hill Road dated April 17, 2018;
- c) That Council authorize staff to implement the recommended initial (short and medium term) remedial measures at the Tower Hill Road at Selwyn Road and Tower Hill Road at Rollinghill Road roundabouts;
- d) That a school crossing guard be approved for the west leg of the Tower Hill Road at Selwyn Road roundabout, commencing upon completion of the initial remedial measures;
- e) That \$75,000 be authorized for implementation of Recommendation c);
- f) That the funding source for the \$75,000 be from the Cash to Capital Reserve Fund; and
- g) That staff monitor the traffic and pedestrian activities at the Tower Hill Road roundabouts and report back on the need to implement additional long term remedial measures, if necessary.

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Contact Person:

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Report Approval:

Submitted by: Kelvin Kwan, Commissioner of Planning and Regulatory Services

Approved by: Neil Garbe, Chief Administrative Officer

All reports are electronically reviewed and/or approved by the Division Director, Treasurer (as required), Town Solicitor (as required), Commissioner, and Chief Administrative Officer. Details of the reports approval are attached.

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Background:

Tower Hill Road is an east-west major collector street, while Selwyn Road and Rollinghill Road are both north-south minor collector streets. Each street operates at a default speed limit of 50 km/h. William Neal Community Park and Beynon Fields Public School are located in the northwest corner of the Tower Hill Road and Selwyn Road intersection. Tower Hill Road also serves as a public transit route.

Over the past several years, Transportation staff has received a number of complaints from area residents with respect to traffic operations and pedestrian safety along these roads, and in particular at the roundabout intersections of Tower Hill Road at Selwyn Road and Tower Hill Road at Rollinghill Road. The complaints have been primarily focused on the challenges faced by pedestrians as they cross Tower Hill Road and Selwyn Road during school hours, as well as the safety challenges faced by cyclists as they navigate these roundabouts.

In response to these complaints, staff undertook a review of the historical traffic data at the two roundabouts and agreed that there may be a benefit to reassessing the traffic control arrangements and current geometrics at these two locations. As a result, the Town of Richmond Hill retained the services of CIMA+ in 2017 to undertake a traffic operations and design review of the roundabouts.

The main objective of this review was to assess the existing geometric configuration of the roundabouts and determine if any specific improvements could be applied to the roundabouts (including signage, pavement markings and geometric design improvements) in order to improve pedestrian and cycling operations at these locations.

The consultant has now completed the Roundabout Operational Review for Tower Hill Road, which is attached for reference in Appendix 1. As part of this assessment, the consultant reviewed a number of policy documents and past studies that pertain to the study area, and also collected pedestrian, cyclist and vehicular data at the intersections in the study area. This staff report summarizes the findings and recommendations of this work.

It should be noted that this report focuses on the two roundabouts along Tower Hill Road that appear to be experiencing the most significant issues at this time. Town Transportation staff already has a longer term strategy in place to undertake a more comprehensive review of roundabouts within the Town and develop a standardized roundabout design for the Municipality. This Traffic Operations and Safety Review study is currently scheduled for early 2019. The information and experiences obtained through the Tower Hill Road roundabouts review as well as implementation and monitoring of any improvements will help to inform this future work.

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Findings of the Roundabout Operational Review for Tower Hill Road

Through the Consultant's review and assessment of the roundabout designs and the data collected, it was suggested that consideration be given to design modifications at the roundabout entries. These modifications are needed in order to reduce vehicle speeds and improve safety for pedestrians and cyclists as well as minimize the potential for entry-circulating collisions between motorists.

The consultant measured the fastest-path speed of the roundabouts using industry procedures. The fastest-path speed is the smoothest, flattest path possible for a passenger car in the absence of any other traffic at a roundabout. The measured fastest-path speed at the Selwyn Road and Rollinghill Road roundabouts was measured to range between 39 km/h and 49 km/h. As a comparison, the average mid-block speeds on the neighbouring streets along Tower Hill Road are between 43 and 52 km/h, hence motorists are traversing the roundabouts without reducing their speeds much. This speed range is considered to be on the high end for roundabouts within a residential context.

Field observations further confirmed that many motorists did little to slow down as they navigated the roundabouts when no conflicting traffic is present.

The review of the design parameters for these roundabouts revealed that they have been constructed to accommodate a semi-trailer truck for all movements. This allows smaller motor vehicles to navigate these roundabouts at the higher speeds.

CIMA+ has suggested that accommodating semi-trailer truck is not a priority at these roundabouts in this residential area, so slower speeds for all motor vehicles are attainable. Town staff agree with this position. It should be noted that winter-maintenance, transit, and emergency operations are still considered a priority for Tower Hill Drive, and as such any recommended design modifications will not adversely affect the ability to deliver these services.

Recommended Roundabout Improvements

The consultant recommended a number of measures that can be implemented in the short to medium term as well as the longer term at the two Tower Hill Road roundabouts to slow down motor vehicle speeds and enhance pedestrian crossing facilities.

Table 1 summarizes the Consultant recommended measures that Staff feel should implement initially, and as well as more significant measures that can be implemented later, should they still be required. The initial implementation measures are identified as short and medium-term measures in the consultant's study. Appendix 2 provides illustrations of the example remedial measures under consideration.

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Table 1: Recommended Remedial Measures

Timeframe	Remedial Measures and Design Considerations	Cost
Initial Implementation (short-term measures)	<ul style="list-style-type: none"> Yield line markings at the entries on all approaches of the two roundabouts Yellow centreline markings with hatching around the splitter islands to visually narrow the entries and exits White offset edge line markings with hatching at all legs of the two roundabouts Crosswalk markings, specifically zebra crosswalk, at all legs to add a transverse visual component to the roadway that may act to lower motorists speed and bring attention to pedestrians. 	\$25,000
Initial Implementation (medium-term measures)	<ul style="list-style-type: none"> Curb extension or bump out at each entry of the roundabouts Concrete curb extension accompanied by object marker and white edge line markings 	\$30,000-\$50,000
Long Term Implementation (If Required)	<ul style="list-style-type: none"> Reconstruction of the splitter islands using barrier curb Relocation of the pedestrian crosswalks one-vehicle length from the roundabout edge Installation of Keep Right signs plus object markers Relocation of the boulevard crosswalk connections to the sidewalks Removal of the curb extensions, and adding tactile walking surface indicators. 	\$60,000-\$120,000

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The initial measures listed above include pavement marking modifications, curb extensions and bump outs to visually narrow the entries and exits of the roundabouts, thus compelling motorists to reduce their speeds. These measures can be implemented relatively quickly (within a 1 year horizon) and are recommended to be completed simultaneously to maximize the efficiency of the work contracts and address the pedestrian crossing needs.

The long-term measures recommended by the Consultant are more significant in nature, and would require more costly and invasive construction that would have a greater impact to the roundabout operations and the neighbourhood during construction, and may not necessarily be required to achieve the desired objectives.

As such, these measures should not be considered without monitoring the initial improvements to determine if they have achieved the desired objectives or these more significant measures are still required. It is recommended that this monitoring take place for at least one full year, and should include data collection for speed, pedestrian activity, and traffic operations at the roundabouts as well as feedback from school representatives and local area residents, as required. If these longer term improvements are still deemed to be required after the monitoring period, Staff would request separate approval to their implementation from Council, either through a separate staff report or the annual budget process.

School Crossing Guard

As part of the Roundabout Operational Review for Tower Hill Road the Consultant also reviewed the need for a school crossing guard at the Tower Hill Road and Selwyn Road roundabout.

There are a number of factors that are examined to determine if a school crossing guard should be deployed at an intersection or crossing. These include the following:

- **Is the school to be served visible or in proximity of the proposed crossing location?** In this case, Beynon Fields Public School is both visible and in close proximity.
- **Is the proposed crossing located within the desired path of travel for pedestrians?** The site inspection process should also verify which route students prefer to take. In this particular case, it was confirmed that the west leg of the intersection is the preferred route as evidenced by the pedestrian crossing activity.

Notwithstanding the above, consideration must be given to the Council approved School Crossing Guard Warrant By-Law (Confirmatory By-law 61-07 adopted by Council at their meeting of April 23, 2007), before recommending a new crossing guard. The Warrant indicates that a school crossing guard is warranted if all of the following criteria are met:

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- There are less than 4 safe gaps in traffic in fifty percent of the five minute intervals on a road having a posted speed limit of not more than 60 km/h, and
- The number of students crossing meets or exceeds 5

A site assessment, including traffic data collection was last completed on May 12, 2016 and it was confirmed that the Town's assessment criteria noted above, for the placement of school crossing guards, had been satisfied.

The assessment criteria is intended to be applied to traditional intersections, rather than to roundabouts. However, with the Consultant's recommendations and the proposed initial roundabout improvements, Town staff have the necessary information to support the introduction of a school crossing guard at the west leg of the Tower Hill Road/Selwyn Road roundabout, once the initial improvements have been installed.

Financial/Staffing/Other Implications:

The estimated cost of initial improvements to the two Tower Hill Road roundabouts is estimated to cost up to \$75,000. The implementation of the longer term improvements is expected to cost up to an additional \$120,000.

Staff recommend that initial remedial measures be implemented at a cost of up to \$75,000 for the two Tower Hill Road roundabouts.

Funding for the \$75,000 is recommended from the Cash to Capital Reserve Fund.

Long-term measures would be considered separately and only if they are deemed necessary to further improve intersection safety and operations after monitoring the effectiveness of the initial improvements. A separate report to Council or a business case as part of the annual capital budget process would be prepared to seek approval of these works.

A school crossing guard is also recommended at the west leg of the Tower Hill Road and Selwyn Road roundabout once initial improvements have been installed. The average cost for a school crossing guard for the remainder of the 2018 school year (i.e. commencing Fall 2018) is estimated to be \$2,500.

The initial \$2,500 for the school crossing guard is recommended to be funded from Community Services Department Account No. 651-101131 (Operations Division).

The annual operating cost for a new school crossing guard is estimated to be \$6,000. It is recommended that this \$6,000 cost be added to the Community Services Department's annual operating budget through the budget process for 2019.

Relationship to the Strategic Plan:

The recommendations of this report are consistent with the Town's Strategic Plan to "enhance community safety". It also demonstrates responsible municipal management

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of Town's road network. In addition, the recommendations are consistent with the Strategic Plan's objectives of building stronger transportation connections within the community, which gives better choices for pedestrians, cyclists and motorists.

Conclusion:

The Roundabout Operational Review for Tower Hill Road at Selwyn Road and Rollinghill Road, prepared by CIMA+, addresses concerns of traffic operations and pedestrian crossing challenges received from residents. Based on a review of the data and design of the roundabouts, the study has recommended initial and long-term remedial measures. Staff recommends Council endorse the study findings and authorize staff to undertake the initial roundabout improvements identified in this report. Staff also recommend that Council approve the addition of a school crossing guard at the west leg of the Tower Hill Road/Selwyn Road roundabout, once the initial improvements have been installed.

Attachments:

The following attached documents may include scanned images of appendixes, maps and photographs. If you require an alternative format please call contact person listed in this document.

- Appendix 1 - Roundabout Operational Review, Tower Hill Road at Selwyn Road and Rollinghill Road, prepared by; CIMA+, April 17, 2018
- Appendix 2 – Example Short, Medium, and Long-Term Remedial Measures

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Report Approval Details

Document Title:	SRPRS.18.118-ROUNABOUTS.docx
Attachments:	- SRPRS.18.118 - Appendix 1 - Tower Hill Road Roundabout Review.pdf - SRPRS.18.118 - Appendix 2.pdf
Final Approval Date:	Jun 8, 2018

This report and all of its attachments were approved and signed as outlined below:

Dan Terzievski - Jun 8, 2018 - 10:03 AM

Kelvin Kwan - Jun 8, 2018 - 11:02 AM

David Dexter - Jun 8, 2018 - 1:31 PM

Neil Garbe - Jun 8, 2018 - 3:15 PM