



Council-In-Committee Meeting – October 15, 2025

Subject: St John's Road Traffic Control - Update
Report Number: PW-25-012
Division: Public Works
Department: Engineering and Asset Management
Ward: Multiple Wards
Purpose: For Decision

Recommendation(s):

That Report PW-25-012 St John's Road Traffic Control – Update, be received as information.

Executive Summary:

The purpose of this report is to provide Council with an update and recommendation regarding the traffic control on St John's Road at Blueline Road and Cockshutt Road.

In 2023, after traffic signals were presented to Council as warranted, staff were directed to review each intersection and assess whether a traffic control signal or a roundabout is the preferred alternative.

Key findings and analysis from the studies show:

- Traffic signals are not currently warranted but the intersections will require enhanced traffic control measures in the future when operating conditions decrease.
- Most of the collisions experienced at the intersections are not correctable by a traffic signal.
- When compared against the existing stop control, a traffic signal would decrease operational performance in all time periods except for the afternoon peak period.
- The capital cost of a traffic signal is lower compared to a roundabout
- Roundabouts, by virtue of their design, are proven to reduce the risk of high severity collisions and fatalities and, as such, are preferred over signals, if the objective is to improve safety performance at an intersection.

Staff recommend continued monitoring of both intersections, with plans to implement a roundabout at each location when operational or safety performance declines and warrants for a change in traffic control are met.

At the appropriate time, staff would support the implementation of a roundabout over that of a traffic signal considering the overall operational and safety improvements offered.

Discussions:

Background

On July 12, 2022, a deputation was received by Council to request additional safety measures at the intersection of St John's Road and Cockshutt Road as a result of a motor vehicle fatality. In response, additional signs, flashing beacons, and rumble strips were installed at this intersection.

At the October 17, 2023, Council Meeting, staff brought forward report EIS-23-062 St John's Road Traffic Review and Analysis in response to Council's request for a detailed traffic review and analysis on St John's Road from Highway 6 to Norfolk Highway 24.

For the review, staff retained a consultant to perform sightline assessments, and a traffic signal warrant review on St John's Road at Blueline Road and Cockshutt Road (speed and signage reviews were completed in-house). At the time, it was concluded that there is adequate sight distance, and that the minimum volume warrant for the installation of a traffic control signal was met at each of the intersections.

Council approved the recommendation that a project be brought forward in the Proposed 2024-2033 Capital Plan including allocating \$150,000 in 2024 for Assessment, Engineering and Design of these intersections. The 2026 Forecast earmarked \$4,000,000 construction respecting that a decision was pending on the type of change (signal vs roundabout) and along with the final determination on timing.

Council also requested that staff report back with the preferred alternative (signal vs roundabout). Staff retained consultants to complete the review and comparison of the needs and options at these intersections. The findings are discussed throughout this staff report, and the full studies are included as attachments.

Assessment of the Warrant Review

The Traffic Signal Warrant Review for St John's Road at Blueline Road and Cockshutt Road report (Attachment 2), was revised in 2025 upon identifying an error that led to the incorrect conclusion that traffic signals are currently warranted at each of the two intersections. The recommendation for the report was updated as follows:

"The County should continue to monitor operating conditions at the St. John's Road intersections with Blueline Road and Cockshutt Road and update the warrant calculations for traffic control signals as traffic volumes increase. When the warrants are met, the County should consider the installation of traffic control

signals subject to available funding. If traffic control signals are installed, the County should also consider constructing left-turn lanes on St. John's Road at both intersections.”

The report also notes that each of the intersections are approaching the minimum volume thresholds to warrant a traffic signal and implementation of some operational improvements/betterments should be considered in the near future. That said, the warrant assessment is operational in nature and consideration of additional factors, like safety performance, should be factored into the type of improvement ultimately selected.

Existing Conditions

Current Traffic Operations

Currently the two (2) intersections operate as two-way stop control on the minor approach. St John's Road is considered the major street, and Blueline Road and Cockshutt Road are considered the minor streets.

Both the Traffic Signal Warrant Review for St John's Road at Blueline Road and Cockshutt Road, and Intersection Control Study (Attachment 3) reports highlight that under the existing traffic control, each intersection is operating at acceptable service levels. The report shows some delay during the afternoon peak period, but all other times of day is operating with little to no vehicle delay on all approaches.

Traffic Operations under Traffic Signal Control

If traffic signals were implemented at the subject locations, intersection performance (operationally) would decrease in all time periods except for the afternoon peak period, which would see a modest (2-14 second) reduction in side street delay. See Attachment 1 – Table 1 and Table 2 for signal performance details.

The objective of a traffic signal warrant is to assess the need/benefit of implementing a traffic control device for the purpose of improving and/or balancing traffic movements through an intersection. A signal warrant analysis does not consider collision history as part of its operational assessment. If the objective is to improve the overall operational function of the two subject intersections along St. John's Road (Cockshutt and Blue Line), a traffic signal, at this point in time, would not provide such benefits.

Collision Assessments

The warrant analysis included a separate collision exposure justification component.

The Intersection Control Study did a review of 8.5 years of collision history and identified 36, and 41 collisions on St John's at Blueline, and Cockshutt respectively. The primary cause of collisions was classified as “Animal- Wild or Domestic” with a total of 13 (36%) at Blueline Road and 20 (49%) at Cockshutt Road.

Table 1: Collision History

Collision Cause	St. John's Road and Blue Line Road	St. John's Road and Cockshutt Road
Ability Impaired (Alcohol)	1 (3%)	3 (8%)
Animal – Wild or Domestic	13 (36%)	20 (49%)
Disobeyed Traffic Control	3 (8%)	1 (2%)
Driver Fatigue	1 (3%)	-
Failed to Yield Right of Way	9 (25%)	5 (12%)
Following too Closely	2 (5%)	2 (5%)
Improper Turn	1 (3%)	-
Inattentive Driver	4 (11%)	5 (12%)
Lost Control	-	1 (2%)
Mechanical Failure	1 (3%)	-
Speed	-	1 (2%)
Unknown	1 (3%)	3 (8%)
Total	36	41

To justify a signal based on collision data (history, type), the intersection would need to experience an average of five (5) collisions (correctable by the installation of a traffic control signal) per year for each of the previous three (3) years. (NOTE: Correctable collisions would include improper turn, fail to yield right of way and disobey traffic control).

Based on the review of the collision data for these intersections (see Attachment 1 – Table 3 for details), a traffic signal is not justified.

Roundabouts

Roundabouts have become increasingly popular as a traffic control measure in lieu of signals, in the correct situation/environment. Roundabouts, unlike traffic signals, do not have warrant criteria. They are, however, commonly applied to intersections to improve safety and operational performance as they avoid perpendicular travel patterns and provide near-continuous traffic flow. Roundabouts can, however, pose challenges for pedestrians. More recent roundabout designs have included pedestrian enhancement treatments at the entry points to the roundabout in effort to improve this function.

Roundabouts are a common consideration when practitioners seek to lower an intersections safety performance index (lowering is a positive move). Roundabouts have been proven to lower driver exposure to high-severity crashes and hence are considered a reasonable treatment for situations where drivers are exposed to such situations.

It has been suggested that the two (2) subject intersections along St. John's Road may be candidates for the introduction of roundabouts. The suggestion was made in the absence of any safety performance assessment; however, staff understand this to be

an indication of a desire to improve the overall safety performance at these intersections.

More commonly, the approach is to embrace an objective of improving safety performance across the transportation network and to assess a number of intersections of concern through a safety performance assessment. This allows a municipality to comprehensively understand the current situation and prioritize and allocate effort to improving those situations that pose the greatest risk to the travelling public. In the absence of a broader study, it is not possible to put these two (2) intersections in perspective with other needs/risks.

Notwithstanding this fact, the County's retained consultant completed a comparison of the two (2) traffic control types (signal vs roundabout) that could be implemented at the two (2) subject locations. Attachment 2 contains the consultant's assessment of a signal vs roundabout which is further rationalized by staff in the summary below.

Comparison of Signal vs Roundabout

Operational viewpoint:

A roundabout is expected to provide better operational performance compared to that of traffic control signal, with vehicle volumes projected to be far below intersection capacity. Travel delay through the intersection (all directions) is minimized as the intersections maintain near-continuous traffic flow.

Safety viewpoint:

With respect to safety, roundabouts, by design, result in lower operating speeds within and through the intersection and significantly reduce the frequency of high severity and fatal collisions. Traffic signals, in contrast, may have a lower overall collision count, but with a higher frequency of high severity and fatal collisions.

Recognizing the need to provide optimal operational performance while minimizing operator exposure to high severity and/or fatal conflicts; staff recommend that roundabouts are preferable over signals at the subject intersections.

Considerations and Recommendation

Currently, traffic control signals are not warranted based on volume or collision history and the intersections operate at acceptable levels of service.

As the surrounding area grows, traffic volumes will increase and the need to enhance the traffic control will be required to ensure the intersection operates optimally. When a change in traffic control is necessary, consideration should be given to traffic safety given the characteristics of both the area and its users.

Staff recommend continued monitoring of both intersections, with plans to implement a roundabout at each location when operational or safety performance declines and warrants for a change in traffic control are met. The staff recommendation is based on the understanding that Council's main objective is to improve the overall safety of the

intersection while at the same time providing an equal or better level of service from an operational perspective. This being the case, the staff recommendation is for a roundabout.

As Norfolk County is currently experiencing growth in the Port Dover and Simcoe areas, and demand on these interconnecting roadways (Cockshutt/Blueline) increase, the construction of a roundabout at each of these intersections will be placed in the capital forecast (at Blueline in 2028; at Cockshutt in 2030) with these timings being adjusted as necessary based on the outcome of intersection monitoring. These projects, being deemed growth related, should be considered for adoption within the upcoming Development Charge Study and form part of the overall Roads and Related component of the charge – ensuring that growth contributes its appropriate apportionment towards these types of improvements.

The roundabout alternative will deliver the highest operational performance suitable for addressing growth needs, while significantly reducing the likelihood of severe injury and fatal collisions at these intersections.

As mentioned earlier in this report, the consideration of actions to reduce risks for road users is most appropriately addressed through a network safety performance study. Such a study would develop Safety Performance Functions to determine the Potential for Safety Improvement (PSI) of each intersection and/or road links of study, which would prompt actions to lower the PSI value, thereby improving safety. Projects would be prioritized based on the current level of risk and/or the level of risk reduction achieved by the recommended works. Such a study would be of value to the County as at the moment we (like many other municipalities of our size/locale) focus on the operational level of service (capacity/delay) with a more reactive look on safety (post event assessments). A PSI study is a more progressive approach based on the predictive analysis of a current setting/situation. PSI or similar forms of studies commonly are used to support the development of a more comprehensive road safety program and/or harm reduction initiative. A study of this nature would cost in the range of \$350,000 and could be brought forward in the Draft 2027-2036 Levy Capital Plan, should Council find value in such an undertaking. The findings of such a study may give rise to the need for projects in areas not currently identified and/or the study may elevate an existing project's priority given recognition of its need/benefit from a safety viewpoint.

Financial Services Comments:

The Approved Capital Budget includes an allocation of \$201,000 for the design of traffic control devices at the two St. John's Road intersections, funded from the Roadway Construction Reserve.

Capital Expenditures

The Final 2025-2034 Levy Capital Plan also included \$4 million scheduled in 2026 for the construction of traffic control devices at the two intersections. Based on the

discussion in the body of the report, this project can be cancelled, and two new projects should be added to the forecast to reflect the updated project plans of constructing a roundabout at St. Johns and Blueline in 2028 (approximately \$3.3 million) and another roundabout at St. Johns and Cockshutt in 2030. Unless direction is received, these changes will be reflected in the Draft 2026-2035 Levy Capital Plan, which will be presented in November.

Furthermore, a potential Safety Improvement Study is recommended to be added to the forecast period in 2027 for approximately \$350,000. This will also be reflected in the Draft 2026-2035 Levy Capital Plan.

Ultimately, no amendments are recommended to the Approved Capital Budget (2025 projects) through this report.

Capital Funding

Through the capital planning process, staff will assess the capacity of Norfolk's funding sources and make recommendations in the Draft 2026-2035 Capital Plan.

For the roundabouts, staff have assessed a portion may be related to growth. As a result, these projects will be identified and assessed through the County's upcoming Development Charges (DC) Background Study Update will likely be funded primarily from DCs or DC debt.

The study will likely be recommended to be funded from one of the County's reserves.

Operating Costs

Following initial construction, the annual operating costs of a roundabout are not expected to be material (<\$10,000/year), primarily relating to landscaping and curb work around the roundabout. Winter control processes may be more complex within a roundabout, causing slightly more time or materials to be spent and thus more costs, however it is not expected to be a material impact.

Lifecycle costs would include repaving (the intersections will continue to be resurfaced periodically under the status quo, traffic signal, or roundabout alternative). Other major interventions for roundabouts are less common but may include curbing or drainage repairs or a landscaping refresh on a longer 20+ lifecycle.

The Intersection Control Study - Attachment also cites "collision costs" as part of its quantitative analysis for determining the cheaper option. Generally, the frequency of collisions at roundabouts will be higher but the severity will be lower when compared to signalized intersections. The Attachment assigns social collision costs to different collision types, which is meant to represent the medical costs, legal costs, emergency service resources, lost productivity, property damage, and assigned monetary value of injury to a collision. As a result, these are not necessarily direct costs to a municipality

and much of this value is unlikely to be outflowed from Norfolk in the event of a collision. However, it is possible if the County is deemed to be liable, legal costs may arise from a collision. These costs vary widely and are difficult to estimate, and may arise whether any of the status quo, traffic signal, or roundabout alternatives are selected. Overall, while the Intersection Control Study Attachment uses interesting methodology to help quantify the broader impact of this decision, when assessing the costs of the alternatives to the Corporation, staff recommend considering only the initial design & construction, operating, and lifecycle costs.

Alternative – Traffic Signals

If direction is received to proceed with traffic signals, the initial capital costs to upgrade the intersections are approximately half as much as a roundabout (\$1.6-\$1.7 million), as estimated in the Intersection Control Study Attachment. It is possible these may also be growth-related and thus DCs may be recommended as the primary funding source as well. Overall, regardless of the traffic signal or roundabout alternative, staff will recommend an efficient funding source through the capital planning process.

The annual operating costs of a signalized intersection are slightly more than a roundabout but are also not expected to be material (<\$10,000/year). They are primarily related to electric updates, signal head/light cleaning, and inspections.

Aside from repaving, lifecycle costs for signalized intersections include the signal heads, cabinets, UPS, and controllers. On a 10–15-year lifecycle, these costs amount to approx. \$110,000 (approx. \$10,000 annualized). If a new signalized intersection is approved, reserve contributions should be increased to reflect these lifecycle costs.

As noted above, the collision costs cited in the *Intersection Control Analysis* conclude that signalized intersections are more costly, staff recommend ignoring this financial impact as the County is not necessarily responsible for the payment of such collision costs.

Alternative – Status Quo

If direction is received to maintain the status quo and not upgrade either intersection, the \$4 million project scheduled for 2026 can be cancelled and no further capital costs would be expected at these intersections in the forecast period.

Operating costs would continue to be accommodated within the Annual Levy Operating Budget on an as-needed basis, with no material increases expected to the net levy requirement on account of these intersections.

Interdepartmental Implications:

NA

Consultation(s):

NA

Strategic Plan Linkage:

Building Norfolk - Develop the infrastructure and supports needed to ensure complete communities

Attachment(s):

- Attachment 1: St. John's Road Intersection Assessments (Summary of Traffic Signal Impacts)
- Attachment 2: Intersection Control Study
- Attachment 3: Traffic Signal Warrant Review for St Johns's Road at Blueline Road and Cockshutt Road (2025)

Approval:

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