

DECISION/DIRECTION NOTE

Title: Rawlin's Cross Upgrade Options

Date Prepared: October 29, 2020

Report To: Committee of the Whole

Councillor and Role: Councillor Sandy Hickman, Transportation & Regulatory Services

Ward: Ward 2

Decision/Direction Required:

Direction is required on what infrastructure changes Council would like to pursue at Rawlins Cross.

Discussion – Background and Current Status:

In August of 2018 the Rawlins Cross unsignalized traffic control pilot project was implemented at the direction of Council. The pilot changes were in place for about 20 months until it was removed at Council's direction in May of 2020. Key changes made in the pilot configuration included:

- removing traffic signal control at the Monkstown Road/Military Road and King's Road/Military Road intersections and closing the centre portion of Military Road between Monkstown Road and King's Road to vehicle traffic, leaving this space open for pedestrians and emergency vehicles;
- installing yield control on all intersection entry points, requiring all vehicles entering to yield to pedestrians and circulating vehicles;
- adding two marked crosswalks (one two-stage crossing on the Monksown Road approach and one on the Prescott Street exit at Queen's Road)

An opportunity to use pedestrian activated Rapid Rectangular Flashing Beacons (RRFBs) was identified in late 2019. These were added at two crosswalks on Military Road (at Monkstown Road and at Kings Road) in December 2019.

To evaluate the project the City reviewed before and after data on collisions, pedestrian and traffic volumes, vehicle delay, and measured speeds of circulating traffic. Public feedback was also gathered and summarized into the final report to Council on the project. Some of the important findings were that:

- The pilot configuration was found to have reduced the overall rate of collisions (the number of collisions adjusted for traffic volumes) by over 50% and reduced the severity of collisions that did occur.
- Measured average speeds on the circulating roadway at Monkstown Rd and King's road were below 30 km/hr and 85% of all vehicles were travelling below 33 km/hr.
- Over 1,800 people participated in the online public feedback survey. When asked if the a permanent design of the pilot configuration should be implemented, 64% responded

ST. JOHN'S

yes it should be while 36% responded no, it should be returned to the old design with traffic signals.

- Some residents felt very strongly opposed to the project. Many residents reported that their feeling of safety as a pedestrian was negatively impacted by the changes. Others indicated that the only way they would feel safe crossing the street was through traffic signal control.

Staff recommended that a permanent design of the pilot configuration be completed and constructed, including Key2Access technology at the RRFB enhanced crossings. Council voted in March of this year to remove the pilot configuration and return to the previous design including traffic signal control. The installation of Key2Access at the traffic signals to improve accessibility at the intersection was also approved as part of the decision. Key2Access was installed at the two signalized intersections and operational as of October 21, 2020.

In August 2020, Council requested staff to review the current layout of the Rawlin's Cross area and advise what improvements could be made to the area.

Standard Practice Improvements

The roadways in the area of Rawlins Cross are due for routine rehabilitation. This reconstruction work will include improving curb ramps, minor adjustments to street alignment and traffic islands, and reviewing pavement markings.

Benefits to accessibility and safety are expected with these changes. It is however noted that the improvements to the safety performance of the area will not match the significant benefits realized through implementing the circulatory traffic control.

These standard practice improvements are typical of routine road work across the city and are intended to coordinate small design changes with planned projects. The timelines for these changes are dependant on the road rehabilitation schedule.

Alternative Changes Considered

Closure of central segment combined with traffic signal control

A configuration that involved closing the middle section of Military and maintaining some level of traffic signal control was considered. A number of traffic signal scenarios were reviewed for the circulatory configuration. Ultimately, no viable option for traffic signal control with this street geometry was identified due to a variety of technical issues. Most notably, the introduction of signal control in all scenarios explored would greatly compromise pedestrian's level of service, introduce potential right-of-way conflicts, cause que spillback that could lead to gridlock conditions, and create new safety and capacity concerns for all users.

Realigning the angle of approach on Monkstown Road

This was considered during the pilot reconfiguration to slow vehicles and reinforce the yield condition. As this circulatory traffic control is no longer in place, changes to the existing Monkstown Road alignment is therefore not supported.

Extending the King's Road northbound channelizing island

Extending the existing channelizing island on King's Road that separates right turning traffic onto Military Road from through traffic on King's Road back further around the approach was considered. The intention of this would be to better define vehicle lane assignment and help prevent last minute lane changes on the approach. Given that the benefits of extending the island are less significant without a circulatory control scheme, only minor changes to the island to improve the pedestrian crossing along Military Road will be incorporated in rehabilitation work in the area as part of standard practice.

Parking lot access closure

Closure of the western entrance to the parking lot between Monkstown Road and King's Road was considered when circulatory control was in place to manage access in light of the additional circulating vehicles. Given that the benefits of this closure are less significant without a circulatory control scheme, this change is not something that would be pursued under the existing traffic signal control conditions.

Realigning the approach of Flavin Street at Prescott Street

This change was included within the changes made for the pilot configuration. It makes the approach to Prescott Street on Flavin Street more perpendicular, improving sightlines and shortening the crossing distance across Flavin Street. This will be incorporated in rehabilitation work in the area as part of standard practice.

Upgrade the traffic island on Prescott Street at Queen's Road

This traffic island currently separates northbound and southbound traffic on Prescott Street. An enlargement of this island will create more pedestrian refuge area and shorten crossings. This will be incorporated in rehabilitation work in the area as part of standard practice.

Two-stage marked crosswalk on Monkstown Road

This crosswalk was trialed as part of the pilot configuration. Traffic and pedestrian volumes at the crossing during the pilot project were found to warrant the marked crosswalk at this location. The temporary two-stage crossing was removed when the pilot project concluded. In order to safely reinstate this crossing, the existing traffic island on Monkstown Road will be widened and realigned to create a permanent two-stage marked crosswalk. The work will be coordinated with planned watermain repair work in the area and will be funded through the existing Annual Pedestrian Crossing Program budget.

Advanced signal warning beacon

The approach to the King's/Military traffic signal along Queen's Road as drivers round the corner on to King's Road was reviewed. There are currently four signal heads visible to drivers as they round the corner on the approach. For a standard traffic signal configuration, two signal heads (a primary and a redundant auxiliary head) are displayed. The enhanced configuration on King's Road displays two additional signal heads, one of which is positioned at the southeast corner of Military Road that is within view of drivers as they begin turning around the corner on Queen's Road.

The addition of a 'prepare to stop' traffic signal warning sign with flashing beacons located on Queen's Road was considered. This type of advanced warning is often used on highway approaches such as at the signalized intersection of Ruby Line and Robert E. Howlett Memorial Drive. The cost to install a similar sign/beacon system is estimated to be approximately \$70,000. This estimate includes a new pole/support system for the sign, the underground conduit connection to the traffic signal controller that enables the timing control with the signal, an upgrade to the existing controller to support communications, equipment, and labour.

A warning sign like this would be supplementary to the already enhanced traffic signal displays at the intersection. While this change could improve awareness of the signal indication there is currently no evidence that a lack of awareness underlies the collision issues at the King's/Military intersection. Given the lack of clear benefit and cost, this is not recommended at this time.

Prescott / Queen's right-of-way assignment

Right-of-way control at the intersection of Prescott Street and Queen's Road was reviewed. The existing configuration that requires drivers on Queen's Road to yield to drivers entering as they head north on Prescott Street creates challenging sightlines and is counterintuitive. The pilot configuration reversed this control and provided a proof of concept that yield control on Prescott Street can be successfully implemented.

However, any additional changes to traffic control in the area must be very carefully implemented and communicated to prevent confusion. Routine road rehabilitation work in combination with the planned standard practice improvements in this area will provide the opportunity to coordinate a change in right-of-way control with the obvious physical changes to the approach that will help heighten drivers' awareness. Timing this change with major construction work in the area will work with drivers' expectation of change and a clear communication plan can be developed to support this. A right-of-way change assigning the obligation to yield to the northbound Prescott Street approach will therefore be incorporated in rehabilitation work in the area as part of standard practice.

Key Considerations/Implications:

1. Budget/Financial Implications:

Standard practice improvements will be funded through planned capital projects in the area.

The traffic island reconfiguration to support the two-stage marked crosswalk on Monkstown Road will be coordinated with planned work in the area and will be funded through the Annual Pedestrian Crossing Program (which covers warranted crosswalk improvements).

2. Partners or Other Stakeholders: n/a

3. Alignment with Strategic Directions/Adopted Plans: n/a

4. Legal or Policy Implications: n/a

5. Privacy Implications: n/a

6. Engagement and Communications Considerations:

The general public will be notified of any planned construction work as per the City's standard processes.

A communication plan will be developed and implemented to inform the public of the change in yield control at Prescott/Queen's at such time as the change is made.

7. Human Resource Implications: n/a

8. Procurement Implications: n/a

9. Information Technology Implications: n/a

10. Other Implications: n/a

Recommendation:

That Council direct staff to proceed with standard practice improvements to roadway and sidewalk infrastructure in the area of Rawlin's Cross.

Prepared by: Anna Snook, Transportation System Engineer

Approved by: Garrett Donaher, Manager - Transportation Engineering

Report Approval Details

Document Title:	Rawlin's Cross Upgrade Options.docx
Attachments:	
Final Approval Date:	Nov 4, 2020

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

Scott Winsor - Nov 3, 2020 - 8:24 PM

Jason Sinyard - Nov 4, 2020 - 11:53 AM