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Traffic Calming: Flexible Bollard Program Information Report

Report Number: 2018-12

Department(s): Engineering Services

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In accordance with the Procedure By-law, any member of Council may make a request to the Town Clerk that this Report be placed on an upcoming Committee of the Whole agenda for discussion.

Purpose

The purpose of this report is to provide a summary of the 2016-2017 Flexible Bollard traffic calming program and its effectiveness, and to identify the next steps.

Background

In the spring of 2016, Transportation Services invited a company that manufactures innovative flexible bollards (patented by the company) to come to Newmarket to provide a demonstration of its product on one of our local roads. It was immediately evident that vehicle speeds were significantly reduced using this new technology. Since speeding on local roads has always been of great concern to Newmarket residents, as it is in all municipalities throughout North America, staff considered initiating an innovative pilot project for traffic calming using the flexible bollards. Since then, other municipalities have followed suit, including the City of Toronto which is testing the in-road centre flexible bollards for the first time in 2018. Newmarket is an innovator in this respect and has had positive outcomes as a result of this new, innovative program.

Discussion

Newmarket’s flexible bollard traffic calming pilot project was initiated in August, 2016. The initial trial was completed in November, 2016. In this original pilot program, one single set of flexible bollards (one in the centre and one adjacent to each curb – see Figure 1) was installed at two separate locations on Savage Road. A similar set of bollards was also installed on Ivsbridge Boulevard. However, due to repeated vandalism and theft of the bollards on Ivsbridge Boulevard, that installation had to be removed two weeks after installation.

FIGURE 1
Bollard Configuration



Traffic studies were undertaken during the 2016 bollard trial period. Staff confirmed that vehicle operating speeds at the Savage Road sites were reduced by approximately 2 km/h. It was concluded that the bollard trial program was effective at reducing speeds near the bollard locations, but operating speeds were not reduced at locations further away from the bollards. The bollards were reinstalled on the two Savage Road sites in June of 2017, and traffic studies confirmed that traffic speeds decreased again, and this time by 2.4 km/h.

In 2017, a second trial project was initiated. Because of the conclusions drawn with previous trials, staff anticipated that two sets of bollards at each site would be more effective at speed reduction than a single set. Two sets of bollards were therefore installed on Sandford Street, north of Savage Road, and two sets on Sawmill Valley

Drive, near Terry Fox Public School. The bollards were installed approximately 80 metres apart at each site (as per Figure 1). When comparing vehicle speeds before and after the bollard installation, an average reduction of 5.8 km/h was observed in the 2017 traffic studies.

Conclusion

As described in Attachment 1, all bollard locations resulted in significantly reduced vehicle operating speeds. The average reduction at these locations was 5.2 km/h when compared with operating speeds before the pilot program was implemented. Further away from the installation zone, vehicle speeds when approaching and exiting the bollard zones did not change significantly. In addition, locations with two sets of bollards were effective at calming traffic along the full segment of road between bollards and not only at each single bollard site.

Next Steps

For 2018, the contractor will be directed to reinstall the bollards on Sandford Street and on Savage Road, in the same locations as they were in 2017. This will help to confirm a consistent trend toward lower operating speeds at the bollard sites. There will be further installations in each Ward, as per the table shown in Attachment 2.

Because the 2017 speed studies showed that operating speeds decreased whenever two sets of bollards were installed, staff will augment the program by installing bollards in sets of three wherever feasible. A major factor affecting the feasibility of installing three sets of bollards instead of two is that all sets of bollards must be visible from any point along the full bollard zone.

In order to prepare drivers for future cycling lanes, it was determined that the Town streets that would be most suitable for traffic calming bollards are roads where bike lanes would be constructed in the future, either as part of the Active Transportation Network or the Active Transportation Implementation Plan (ATIP). This way, drivers and residents will be able to visualize the benefits of traffic calming through bollard installations in advance of bike lane construction. The 2018 traffic calming bollard locations are described in Attachment 2.

Speed studies will again be conducted in 2018, and data will be examined in the autumn of 2018 to determine the effectiveness of the bollard program.

Business Plan and Strategic Plan Linkages

This report links to Newmarket's Strategic Plan direction, Well Planned & Connected, by protecting vulnerable road users and improving travel within Newmarket.

This report also aligns with Council's 2014-2018 Strategic Priority - Traffic Safety & Mitigation, by ensuring safe streets, improving traffic congestion, and supporting major transit service enhancements.

Consultation

Households that will be impacted by the traffic calming bollards will be notified, by mail, prior to the installation of bollards.

Human Resource Considerations

Not applicable to this report.

Budget Impact

Operating Budget – the purchase and installation of additional bollards to augment the trial project to include sites in all Town Wards is estimated at \$18,000.00. The spring reinstallation and autumn removal of all traffic calming bollards is estimated at less than \$2,000.00.

Capital Budget – Not applicable to this report.

Attachments

1. Summary of Pilot Project Speed Reduction Results
2. Locations of Traffic Calming Bollards for 2018

Contact

For more information of this report, please contact Bill Gould, Senior Transportation Co-ordinator, Transportation Services, at 905-953-5300, press "2", then extension 2512 or bgould@newmarket.ca

Approval



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ATTACHMENT 1

Summary of Pilot Project Speed Reduction Results

Flexible Bollard Traffic Calming Pilot Project		
Savage Rd. Sites:		Operating Speed
Operating. speed, avg.	before bollards, 2016	54.0 km/h
Operating. speed, avg.	with bollards, 2016	52.1 km/h
Operating. speed, avg.	with bollards, 2017	49.6 km/h
Total average speed reduction		4.4 km/h
Sandford St. and Sawmill Valley Dr. Sites:		
Operating. speed, avg.	before bollards, 2016	54.8 km/h
Operating. speed, avg.	with bollards, 2017	49.0 km/h
Total average speed reduction		5.8 km/h
Flexible Bollard Traffic Calming Pilot Project		

Attachment 2

Locations of Traffic Calming Bollards for 2018

Flexible Bollard	Pilot Project:	2018 Locations	No. of "Sets" of Bollards at Each Location
Ward 1	Kingsmere Avenue:	At Notre Dame C.E.S.	3
Ward 2	Alexander Road	At Queen Street	3
Ward 3	Wayne Drive	At Glen Cedar P.S.	3
Ward 4	Main Street	At Deviation Road	3
Ward 5	Lorne Avenue	North of Queen Street	2
Ward 6	Savage Road	East of Shanahan Blvd	2
Ward 7	Aspenwood Drive	At Flagstone Way	3