

REPORT

COMMUNITY SERVICES COMMITTEE

MEETING DATE: MAY 19, 2015

FROM: Engineering and Construction Department

DATE: April 20, 2015

SUBJECT: Traffic Calming on Munn's Avenue at River Oaks Public School

LOCATION: River Oaks

WARD: 5

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RECOMMENDATION:

That the existing physical traffic calming measures on Munn's Avenue at River Oaks Public School, be converted from rubber speed cushions to concrete speed cushions, as detailed in the staff report from the Engineering and Construction Department dated April 20, 2015.

KEY FACTS:

The following are the key points for consideration with respect to this report:

- Physical traffic calming (rubber speed cushions and flexible bollards) on Munn's Avenue was introduced in 2010.
- In 2014, Munn's Avenue was scheduled for conversion from rubber to concrete speed cushions.
- In 2014, a petition was received from local stakeholders requesting the removal of one set of speed cushions, located east of the school exit driveway.
- Speed cushions are proven to reduce traffic operating speeds.
- Several other traffic calming options were evaluated to reduce the number of speed cushions on Munn's Avenue.
- Other vertical deflection devices are not recommended for the reason of interfering with emergency services.
- Horizontal deflection devices require substantial property requirements and would not be applicable to the existing layout of residential driveways on Munn's Avenue.
- A noise assessment was undertaken at both rubber and concrete speed cushion locations. The assessment confirmed that concrete cushions are less noisy than rubber cushions.
- Concrete speed cushions are recommended for Munn's Avenue in front of River Oaks Public School.

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BACKGROUND:

Since 2003, the town has been installing traffic calming measures along roads with operating speeds in excess of approved traffic calming warrant thresholds. Based on the town's approved traffic calming process, physical traffic calming devices (e.g. vertical deflection devices) have been implemented to address speeding. The focus of the program has been to address elementary school zones first. The preferred physical traffic calming treatment in elementary school zones are speed cushions or raised medians for narrow (2 lane) or wide (3 lane) roads respectively.

In 2011, staff began converting portable rubber speed cushions to permanent concrete versions. This was done to alleviate the burden/cost of removing, storing and re-installing rubber speed cushions at the start and end of the winter season; it also provided school zones with year-round traffic calming.

Munn's Avenue received physical traffic calming measures, in front of River Oaks Public School, in the form of two sets of rubber speed cushions and flexible bollards, as part of the 2010 Traffic Calming Program. Before and after speeds on Munn's Avenue confirmed speed reductions were achieved in the order of 21 km/h in the eastbound direction and 16 km/h in the westbound direction. The rubber speed cushions on Munn's Avenue in front of River Oaks Public School were scheduled to be replaced with concrete speed cushions in 2014. River Oaks Public School is the only remaining school zone that has not been retrofitted with concrete speed cushions. An area map along with the rubber speed cushion locations are provided in Appendix A.

In July 2014, engineering staff met with the area residents who were requesting the removal of one set of rubber speed cushions along Munn's Avenue. The concern expressed by residents is related to increased noise levels generated by vehicles going over the speed cushions. The residents advised they have not experienced significant reduction in operating speeds since the traffic calming measures have been introduced. Subsequently, staff received a petition from the area residents, proposing removal of one set of the speed cushions.

At its meeting of September 22, 2014, Oakville Council provided the following direction to staff:

That staff be requested to report back to Council on options for traffic calming on Munn's Avenue fronting River Oaks Public School from River Oaks Boulevard West to Margot Street, to maintain student safety, curb speeding and lessen noise

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pollution, with options including, but not limited to a reduction in the number of speed cushions.

This report has been prepared to address Council's direction.

COMMENT/OPTIONS:

Staff has reviewed the various types of traffic calming measures for this location as well as a proposed option from the area stakeholders and local Councilors. The results of this review are outlined below:

Evaluated Traffic Calming Options as an Alternative to Concrete Speed Cushions

Staff reviewed a variety of traffic calming measures and assessed their applicability in an attempt to reduce number of speed cushions on Munn's Avenue at River Oaks Public School. These measures included:

- Vertical Deflection Devices
- Horizontal Deflection Devices
- Non Physical Devices – Radar Speed Display Signs (RSDS)

Vertical Deflection Devices

Reviewed vertical deflection devices included: raised crosswalks and raised intersections.

Raised crosswalks and raised intersections are marked pedestrian crossing devices at an intersection or mid-block location constructed at a higher elevation than the adjacent roadways. These measures are considered to have negative impact on medical emergency and fire services as they are required to slow down for these devices to ensure they do not damage their vehicles or upset their cargo or passenger.

During the development stages of the town's traffic calming program in 2003, staff consulted with fire and emergency medical services, and the design of rubber speed cushions with flexible bollards was adopted to allow for unimpeded response time for these services while effectively mitigating speeds of the general traffic.

Staff is not recommending implementation of new vertical deflection devices on Munn's Avenue for the reason of impeding the emergency services response time.

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Horizontal Deflection Devices

Horizontal deflection devices evaluated for Munn's Avenue include:

- Chicanes
- Raised median islands
- Curb extensions
- Roundabouts

A chicane is a series of curb extensions on alternating sides of a roadway, which narrow the roadway and require drivers to steer from one side of the roadway to the other, while a raised median island is an elevated median constructed on the centerline to reduce the overall width of the adjacent travel lanes.

Chicanes and raised median islands are dependent on a physical layout of residential driveways and require sufficient spacing in between the driveways for optimal configuration. The existing layout of residential dwellings on Munn's Avenue would not allow for a proper installation of these devices without impeding access to and from the driveways.

The application of curb extensions would narrow the width of the driving lanes at the intersection of Munn's Avenue and O'Donoghue Avenue. While this option has a potential to decrease traffic speeds approaching the crossing guard location from the east, it could also become an appealing and more convenient crossing point for the school children approaching from the east direction due to its close proximity to the existing crossing guard location. Given the fact that this location would operate under uncontrolled conditions, staff is not recommending installation of the curb extensions.

Staff has also analyzed the application of a mini roundabout at Munn's Avenue and O'Donoghue Avenue, similar to what has been implemented at Great Lakes Boulevard and Timeless Drive. The preliminary conclusions indicate that this option would greatly impact residential properties adjacent to this intersection. It would require the acquisition of the private portions of residential properties on the north side of the intersection and impeding residential driveway operations along the south side of the intersection.

Non Physical Devices - Radar Speed Display Signs

The Radar Speed Display Signs (RSDS) pilot project was initiated in June of 2014. The radar speed units were implemented on six roadways, one per each Ward. The effectiveness of these devices was monitored throughout the process by collecting speed data at each location prior to installation, throughout the placement and following the removal of the devices. The results of this pilot indicated an initial drop in operating speed following by a slow increase of speeds over time. It was concluded the RSDS are generally effective in reducing speeds over the short term.

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RSDS application on Munn's Avenue could result in a temporary decrease of operating speeds but would not provide for a year-round reduction in operating speeds.

Proposed Option by Area Stakeholders - Removal/Relocation of Speed Cushions

Residents of Munn's Avenue have requested the complete removal of the eastern speed cushions or relocation of the eastern speed cushions closer to the school.

Speed cushion removal

The removal of the eastern set of speed cushions would result in no impediments to the westbound traffic travelling speeds. This could expose the crossing guard location to potentially higher speeds and generate unsafe conditions for children crossing at this crossing guard location.

Speed cushion relocation

The option of relocating speed cushions would consequently initiate displacement of the existing crossing guard location further to the west, aligning it with the concrete divider to the left of the exit driveway (refer to Appendix B). This would result in an unsafe environment for school children. Under this option, the school children would need to cross an active portion of the school parking lot which would interfere with the parking lot vehicular traffic (including school buses). Another disadvantage of this option is that it would only serve the benefit for the houses located further east from the school and would have not addressed the issue for the properties adjacent to the school.

To maintain children's safety at the school property and minimize their interaction with parking lot vehicular traffic, staff is not recommending removal or relocation of the existing eastern speed cushions.

Recommended Option – Convert Rubber Speed Cushions to Concrete

Under this option, the two sets of the existing speed cushions would be converted from rubber to concrete; as per the original plan from 2014. This option would ensure reduction in traffic operating speeds in front of the school and enhance safety of a pedestrian crossing at the existing crossing guard location. This option is outlined in Appendix C of this report.

Speed data evaluations

The rubber speed cushions are proven to mitigate speeds up to 25 km/h. The last speed survey collected on Munn's Avenue in 2014, with the rubber speed cushions in place, showed the speeds of 31 km/h in the eastbound direction and 32 km/h in the westbound direction. Speed surveys conducted at the converted concrete speed

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cushion locations to date have revealed that after speeds are in the range of 35-45 km/h.

The above confirm that speed cushions (rubber and/or concrete) are highly effective in mitigating traffic operating speeds.

Noise level evaluations

Removable rubber speed cushions are more intrusive in nature than permanent concrete speed cushion. This is mainly due to their design which does not provide for an even transition between asphalt road surface and the cushion itself. Concrete speed cushions are fabricated in a way to provide for smoother transition from the road surface, thus creating less noise pollution.

Staff conducted a field noise level assessment at both rubber and concrete speed cushions locations to determine the differences between the two. Noise level measurements were taken along Bridge Road in Oakville in a location that presently has concrete speed cushions, and on Longmoore Drive in Burlington at a location with rubber speed cushions. The measurements were taken using the same vehicle for consistency purposes.

The first measurements recorded just the regular traffic noise from a travelling vehicle. The next measurements were taken on Bridge Road at the concrete speed cushion location; the reading indicated a noise level increase of 1 dBa over the average traffic noise. A noise level of increase of 1 dBa is not perceptible to the human ear.

A noise level measurement was also taken on Longmoore Drive at the rubber speed cushions with a resulted increase of 4 dba over the average traffic noise, or 3 dBa higher than the concrete speed cushion measurement. A noise level increase of 3 dBA is very perceptible to the human ear.

Discussion:

Vertical deflection devices have been proven to be the most effective form of speed mitigation. Their application is most appropriate at elementary school zones where they provide an unparalleled level of safety for younger school children. The town has implemented speed cushions at all elementary school zones and has converted all of them to concrete except this remaining location at Munn's Avenue.

There is an element of legal risk exposure to the town should Council elect to remove speed cushions that have met the established warrant criteria as part of the town's traffic calming program. Staff would not recommend the removal of any of the existing speed cushions on Munn's Avenue in the vicinity River Oaks Public School.

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Staff is recommending the conversion of the existing rubber speed cushions to concrete as outlined in Appendix C of this report. Concrete speed cushions have been found to be less noisy than rubber speed cushions; this would address the residents concern associated with elevated traffic noise levels. The cushions will continue will provide year-round speed mitigation in the vicinity of the school.

CONSIDERATIONS:

(A) PUBLIC

The local Councillors, Principal of River Oaks P.S., and the stakeholders of the school catchment area were notified of this report.

(B) FINANCIAL

N/A

(C) IMPACT ON OTHER DEPARTMENTS & USERS

This report was reviewed by the Legal Department.

(D) CORPORATE AND/OR DEPARTMENT STRATEGIC GOALS

This report addresses the corporate strategic goal to:

- continuously improve our programs and services
- be accountable in everything we do

(E) COMMUNITY SUSTAINABILITY

The safe operation of our intersections and roadways is an important facet to the social pillar of community sustainability.

APPENDICES:

- A. Area Map with Rubber Speed Cushion Locations
- B. Relocation of Speed Cushions
- C. Rubber to Concrete Speed Cushion Conversion

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