



TO: Mayor and Members of Council

C. Andy Taylor, CAO  
Jim Baird, Commissioner, Development Services  
Loy Cheah, Senior Manager, Transportation  
David Porretta, Supervisor, Traffic Operations

FROM: Brian Lee, Director of Engineering 

DATE: February 27, 2017

Re: **Centreline Flexible Sign Pilot Project in School Zones**

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Traffic safety in school zones has become a growing concern in communities throughout the City, specifically with respect to vehicle speeds and pedestrian safety. Currently, the City employs several measures within school zones, including 40 km/h speed limits, parking restrictions, crossing guards, crosswalk enhancements and deployment of speed radar display boards to enhance safety. Staff also works closely with local schools, the school board and the York Region Health Services to support active transportation education initiatives. While these measures have varying degrees of success, there is a continued interest in exploring other opportunities to slow traffic through school zones.

The centreline flexible sign is a relatively new concept in Ontario, aimed at reducing the speed of vehicles on two-lane collector and local streets. These flexible signs are installed on the centreline of the road, creating a narrowing effect of the street (see Attachment "A"), thereby giving drivers a perception that they need to slow down.

The primary advantages of a centreline flexible sign are as follows:

- Lower capital and operating costs compared to traditional physical traffic calming measures, radar speed display boards and photo radar technology;
- Does not impact emergency or transit vehicles;
- Devices are designed to fold down on impact and then return to its initial position.

There are also disadvantages for using this type of device:

- Risk of personal property damage and associated liability if struck;
- Requires removal during winter season as snow plows will damage the device;
- Additional operating costs associated with seasonal installation and removal.

**A product demonstration for a centreline flexible sign was performed.**

In summer 2016, City staff and the product vendor conducted a demonstration of a Ped-Zone™ centreline sign on Elgin Street (Ward 1) and Lee Avenue (Ward 8). Both streets are

two-lane residential streets that lack sidewalks and have vehicle operating speeds in excess of the 40 km/h speed limit.

Approximately two weeks after installation, vehicle operating speeds were collected to determine effectiveness at slowing vehicle speeds. The results are summarized below:

**Table 1: 85<sup>th</sup> percentile vehicle operating speeds**

Street Name	Before	With Speed Radar Display Board	With Centreline Sign
Elgin Street	55 km/h	48 km/h	44 km/h
Lee Avenue	54 km/h	49 km/h	43 km/h

Results of the demonstration found that the centreline signs were more effective at slowing speeds compared to a speed radar display board. However, it should be noted that not all streets have the same profile. As such, results may vary based on the street's cross-section (i.e. wider streets may not be as effective).

**A pilot project will be conducted at eight (8) school zones in 2017.**

In order to more accurately measure the effectiveness of the centreline sign, particularly within school zones, more qualitative data is needed. As such, Engineering staff will be proceeding with a pilot project, implementing centreline signs at eight (8) school zones across the City (one school zone per ward).

- Ward 1: Henderson Public School (Henderson Ave.)
- Ward 2: St. Justin Martyr Catholic School (Hollingham Rd.)
- Ward 3: Unionville Meadows Public School (South Unionville Ave.)
- Ward 4: Markham District High School (Church St.)
- Ward 5: St. Joseph Catholic School (Cornell Centre Blvd.)
- Ward 6: Castlemore Public School & All Saints Catholic School (Castlemore Ave.)
- Ward 7: Sir Richard W. Scott Catholic School (Roxbury St.)
- Ward 8: Randall Public School (Randall Ave.)

In spring 2017, each school zone will have two (2) centreline signs installed at opposing ends of the school zone to slow traffic approaching from either direction. Following installation and before the end of the school year, speed data will be collected and analyzed to determine effectiveness. Affected schools will be notified of the pilot program prior to implementation.

Staff will report back to Council in fall 2017 with the results of the pilot project and qualifying guidelines for future implementation in other school zones where operating speeds are deemed to be problematic.

Capital and operating budgets of \$7,000 and \$5,200 respectively have been allocated in the 2017 approved budget for this pilot project.

## ATTACHMENT "A"

### CENTRELINE FLEXIBLE SIGNS TYPICAL LAYOUTS



**Two-way streets with a width between 6.0m and 8.5m**



**Two-way streets with a width greater than 8.5m**

*\*For streets with frequent on-street parking, delineators on each side may not be required*

#### **NOTE:**

- 1. Suggested spacing between centerline flexible signs is 80m – 100m***
- 2. Imagery on signs subject to change***