

**Report to  
Rapport au:**

**Transportation Committee  
Comité des transports**

**February 26, 2014  
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**Submitted by  
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**Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE      File Number: ACS2014-COS-PWS-0006**

**SUBJECT: Traffic Control Device Initiatives**

**OBJET: Projets de signalisation**

#### **REPORT RECOMMENDATIONS**

**That the Transportation Committee receive this report for information.**

#### **RECOMMANDATIONS DU RAPPORT**

**Que le Comité des transports prenne connaissance du présent rapport.**

#### **BACKGROUND**

At the Transportation Committee meeting of December 4, 2013, Councillor Hume brought forward the 2013 Alta Vista Safe Streets Report (ACS2013-CNR-TRC-0016) which documented initiatives that he had undertaken within his ward to address some of

the speeding concerns identified by residents. Based on that report, the following motion was carried:

*“That staff report back to the Committee on the effectiveness of the city-wide pilot project on centre line signs, as well as the effectiveness of traffic calming initiatives on other streets, i.e.: Bronson Avenue.”*

This report serves as the response to the aforementioned motion. It will also serve as the launch of the Traffic Service Catalogue, which was developed by the Traffic Services Branch of the Public Works Department.

## **DISCUSSION**

In 2013, Traffic Services undertook a number of initiatives to help address speeding concerns within the city. This included the following initiatives:

- A pilot project to test the effectiveness of a temporary/seasonal traffic calming treatment used in Montreal.
- The introduction of new pavement markings and seasonal flexible posts to delineate the cycling facility on Bronson Avenue from Brewer Way to Findlay Avenue.
- The creation of a Traffic Service Catalogue, which provides information about the various traffic services provided by the Public Works Department.

### **Temporary/Seasonal Traffic Calming Measures**

In response to numerous speeding and traffic calming inquiries, the Road Safety and Traffic Investigations Unit of the Traffic Services Branch initiated a pilot project of temporary/seasonal traffic calming treatments. As the treatments were only seasonal, they were implemented in late June 2013 and were removed by December 2013. The treatment consisted of the installation of the following measures:

- Advanced warning signs to let motorists know that they are entering the pilot area.
- Centre-line pavement markings.
- Flexible delineator signs on the centre-line of the roadway.

Twelve locations were identified for implementation in eleven wards across the city. The locations were selected based on the presence of adjacent pedestrian generators, such as schools, parks, and seniors' residences, verified vehicle speeding issues, and collision history.

Funding was provided from the Traffic Services operational budget for the purchase of the flexible delineators used in the traffic calming pilot. Traffic Operations completed the installation of advanced warning signs, flexible delineators and associated pavement markings with funds from the signs and pavement markings maintenance budget.

A thirteenth location was added to the pilot in August 2013 at the request of Councillor Tierney. The Councillor's office funded the purchase of the flexible signs required for this new location.

The main goal of the pilot project was to determine if this form of seasonal traffic calming has an effect on the operating speed of the roadway. Speed data were collected before, during and after the implementation of the flexible delineator signs. The operating speed of the traffic as well as the percentage of drivers complying with the posted speed limit was reviewed. Results of the speed surveys are summarized by location in Tables 1 and 2.

**Table 1 - Results of speed surveys based on operating speed**

Street	Speed Limit (km/h)	Operating Speed <sup>1</sup> Before Installation (km/h)	1st Survey (km/h)	2nd Survey (km/h)	3rd Survey Km/h)	Operating Speed <sup>1</sup> After Removal (km/h)
Kittiwake Drive	40	52	52	53	53	56
Grenon Avenue <sup>2</sup>	50	51	45	44	48	45
Woodfield Drive	40	49	48	47	49	51
Steeple Chase Drive <sup>2</sup>	50	56	53	54	54	53
McCurdy Drive	40	52	42	40	43	54
Forest Valley Drive	40	54	48	47	51	54
Trappers Road	40	55	50	51	51	53
Grey Nuns Drive	40	51	46	45	46	52
Halton Terrace	40	51	48	48	50	51
Montfort Street	50	49	46	42	42	47
Springland Drive	40	56	51	51	51	54
Church Street	40	58	52	50	54	58
Meadowbrook Road	40	56	49	49	52	56

1. Operating speed is defined as the 85<sup>th</sup> percentile speed or the speed at which 85 percent of the traffic is travelling at or below.
2. 40 km/h school speed zones are in place at these locations during some of the time and 50 km/h is in place during other times. The surveys were conducted when the 50 km/h speed limit was in effect.

As Table 1 depicts, operating speeds at most locations showed a decrease following the installation of the temporary/seasonal traffic calming treatments, with most locations experiencing a 4 to 6 km/h reduction in operating speed. This was calculated using the average speed across the three “after installation” surveys. The greatest speed reduction of 10 km/h was at the McCurdy Drive location. Woodfield Drive, Steeple Chase Drive and Grey Nuns Drive showed lower speed reductions of between 1 and 2 km/h. Results from the Kittiwake Drive location showed an increased speed by 1 km/h.

**Table 2 - Results of speed surveys based on the percentage of compliance**

Street	Speed Limit (km/h)	Compliance <sup>1</sup> Before Installation (%)	1st Survey (%)	2nd Survey (%)	3rd Survey (%)	Compliance <sup>1</sup> After Removal (%)
Kittiwake Drive	40	25	24	23	16	6
Grenon Avenue <sup>2</sup>	50	80	97	100	94	93
Woodfield Drive	40	15	40	42	28	19
Steeple Chase Drive <sup>2</sup>	50	50	73	67	70	76
McCurdy Drive	40	35	88	92	79	27
Forest Valley Drive	40	2	43	46	37	10
Trappers Road	40	1	26	35	32	13
Grey Nuns Drive	40	32	70	71	60	21
Halton Terrace	40	26	52	40	29	20
Montfort Street	50	88	95	100	98	94
Springland Drive	40	6	35	32	36	5
Church Street	40	2	40	38	22	3
Meadowbrook Road	40	14	41	45	29	6

1. Compliance is defined as the percentage of traffic travelling at or below the speed limit.
2. 40 km/h school speed zones are in place at these locations during some of the time and 50 km/h is in place during other times. The surveys were conducted when the 50 km/h speed limit was in effect.

As Table 2 shows, the percentage of traffic complying with the speed limit increased significantly at all locations aside from Kittiwake Drive. Compliance before installation was found to be 29%, averaged across all sites, ranging from as low as 1% on Trappers Road to as high as 88% on Montfort Street. Following installation, the compliance increased to 53% across all locations, ranging from 21% on Kittiwake Drive to 98% on Montfort Street. The largest increase in compliance was found on McCurdy Drive where 35% of traffic was complying with the speed limit before installation and as high as 92% was in compliance following installation of the treatments.

Based on the collected speed data, the following was noted:

- The average speed and 85<sup>th</sup> percentile speed was reduced by 4 to 5 km/h and compliance rates increased by 24% after the installation of flex stake signs.
- Post-removal speed surveys indicate that in the absence of the sign, the speed returns to the pre-installation levels.
- This form of traffic calming is not as effective at locations with wide roadways (11.2 meters) and lower levels of on-street parking, such as Kittiwake Drive.

Based on high-level estimates, the cost to implement this treatment is approximately \$1,300 to \$1,500 per location, which includes the flexible signs, pavement markings and the advanced warning signs on the approached into the pilot locations. There are other costs associated with data gathering and analysis in order to report results, deploy and maintain signs and answer questions, etc. Some of these costs are one-time costs for the pilot while others will be ongoing costs to maintain the program if funded in the future.

The Traffic Services Branch will use operational funding in 2014 to purchase flexible delineators in each of the wards that did not participate in the 2013 pilot project; this will be a total of 12 new sites. Also in 2014, the Traffic Operations Unit will reinstate the 12 original pilot sites in addition to the site funded by Councillor Tierney in addition to installing treatments at the new sites.

On Kittiwake Drive where there is low on-street parking, narrower flexible posts will be installed in 2014, approximately 3.5 metres to the right and left of the centreline post, to provide some additional narrowing.

Traffic Operations will install signage and pavement markings from the signs and pavement markings maintenance budget.

### **Bronson Avenue Operational Modifications**

At the November 7, 2012 Transportation Committee meeting, Councillor Chernushenko brought forward a report on the reduction of the speed limit on Bronson Avenue between Holmwood Avenue and the pedestrian crossing at Brewer Way (ACS2012-CMR-TRC-0017). As a result, staff was directed to bring back a comprehensive safety and operational review of the corridor. This review was tabled at the April 3, 2013 Transportation Committee meeting and included two speed reduction measures that were to be monitored following implementation in spring/summer 2013. The two speed reduction measures are described below:

- Installation of hatching on the bridge to shorten the southbound right-turn lane on Bronson Avenue at the Colonel By Drive on-ramp and the northbound right-turn lane on Bronson Avenue at Findlay Avenue.
  - The intent of installing hatching was to visually narrow the approaches so that drivers feel some discomfort at higher speeds. It was hypothesized that this may lead to a reduction in operating speeds in this area.
- Installation of flexible post delineators along the lane line separating the cycling lanes from the general purpose traffic lanes along Bronson Avenue south of Findlay Avenue to south of Brewer Way. The flexible posts were in place from June to December 2013.
  - The intent of installing flexible post delineators was to introduce side friction to help slow motorists down as well as to provide a level of segregation for cyclists.

The effectiveness of flexible post delineators as a means to segregate cycling lanes from the general traffic lanes is unknown. As such, this measure was implemented as a pilot project in 2013 and was monitored to determine effectiveness.

A speed study was undertaken as part of the monitoring process. The study consisted of a comparison of speeds before and after the installation of the new pavement markings and flexible delineators. The following table summarizes the speed survey results by location.

**Table 3 - Results of speed survey based on operating speed**

<b>LOCATION</b>	<b>Posted Speed (km/h)</b>	<b>Operating Speed<sup>1</sup> Before Installation (km/h)</b>	<b>Operating Speed<sup>1</sup> After Installation (km/h)</b>
200m south of Brewer Way to Sunnyside Avenue	70	78	71
Sunnyside Avenue to Findlay Avenue	60	75	67

1. Operating speed is defined as the 85<sup>th</sup> percentile speed or the speed at which 85 percent of the traffic is travelling at or below.

Based on the speed surveys, the operating speeds along Bronson Avenue decreased following the installation of the measures. In the section between Brewer Way and Sunnyside Avenue, the speeds decreased by 7 km/h and in the section between Sunnyside Avenue and Findlay Avenue, the speeds decreased by 8 km/h.

The results of the speed survey show that the operating speeds have not changed significantly enough to warrant a lowering of the speed limit in any section along Bronson Avenue between Findlay Avenue and Brewer Way.

Data was collected over a short period of time and is subject to the conditions of those time periods. It should also be noted that there was some construction at the north end of the study area when the second set of data was collected. To accurately monitor the effects of these treatments on vehicle speeds in the area, another speed comparison study is planned for 2014. Data will be gathered in the spring, before the posts are re-installed and again sometime during the fall months before they are removed for winter maintenance.

### **Traffic Service Catalogue**

The Traffic Services Branch is responsible for responding to traffic safety and operational inquiries received from residents within the City of Ottawa. The Branch has developed a Traffic Service Catalogue that outlines the services that are provided in relation to traffic safety inquiries. The goal is to have a document that can be given to residents to provide them with information on the various traffic control measures that can be used to deal with traffic-related issues within their communities. It provides information on the type of controls and when they can be used. This Catalogue contains information pages on the topics of the most commonly received inquiries:

- Speed
- Pedestrians and Cyclists
- Warning Signs
- Traffic Control
- Heavy Trucks
- Parking
- Schools
- General

The Traffic Service Catalogue is a living document and will be updated on an ongoing basis as services are added and/or changed.

### **RURAL IMPLICATIONS**

The temporary traffic calming pilot project is a city-wide initiative and included one rural location.

## **CONSULTATION**

No public consultation was undertaken for this report.

### **Planning and Growth Management Department Comments**

The Planning and Growth Management Department is supportive of the report recommendations and works with the Public Works Department to implement traffic calming measures through the Area Traffic Management Program.

## **COMMENTS BY THE WARD COUNCILLOR(S)**

The temporary traffic calming pilot is a city-wide initiative.

### **Comments from Councillor Chernushenko re: Bronson Avenue**

A number of road safety measures were approved in April 2013. The first phase of these was implemented for the second half of 2013. That vehicle speeds have been reduced by 7 and 8 kilometres per hour purely by adding flexible posts, hatching and moving the cycling lane, should be seen as a promising start. Feedback from all types of road users (drivers, cyclists, pedestrians) has been positive. The two further phases, which are expected to have a more substantial impact on speed through the modification of intersection geometry and the addition of a signalized crossing, will be implemented over the next 18 months. Once these additional phases of work are in place, the City will be in a better position to determine whether the posted speed limit can be effectively and safely lowered, or if indeed it still needs to be. Significantly improving safety on Bronson Avenue between the two bridges is a work in progress.

## **LEGAL IMPLICATIONS**

There are no legal implications for this report.

## **RISK MANAGEMENT IMPLICATIONS**

There are no risks associated with this report.

## **FINANCIAL IMPLICATIONS**

The 2014 Traffic Services Branch has the operational funding for this project. There is no further risk or financial implications.

## **ACCESSIBILITY IMPACTS**

The Traffic Service Catalogue is a fully-accessible Adobe (.pdf) document that can be accessed on the City's website.



## **TECHNOLOGY IMPLICATIONS**

There are no technology implications associated with this report.

## **TERM OF COUNCIL PRIORITIES**

The traffic calming treatments utilized in 2013 are directly linked to the following Term of Council Priorities:

- C1 – “Contribute to the improvement of my quality of life”.
- TM3 – Provide infrastructure to support mobility choices.
- SE2 – Improve operational performance.

## **DISPOSITION**

The Traffic Services Branch will continue to implement the traffic calming treatments as part of the 2014 phase of the pilot project. The Traffic Services Branch will implement any additional locations at the request of Councillors who agree to fund the installation.

## **SUPPORTING DOCUMENTS**

Document 1 : Traffic Service Catalogue.