

Request for Decision

Southview Drive Traffic Calming After Study Results

Presented To:	Traffic Committee
Presented:	Tuesday, Apr 27, 2010
Report Date	Wednesday, Apr 21, 2010
Type:	Managers' Reports

Recommendation

That based on the results of the Southview Drive pilot project, By-Law 2009-36T, being a By-Law of the City of Greater Sudbury, to adopt a Traffic Calming Policy be approved on a permanent basis, and;

That staff be directed to bring forward a list ranking the roadways that qualify for traffic calming based on the approved Traffic Calming Policy, all in accordance with the report from the General Manager of Infrastructure Services dated April 21, 2010.

Background

Project History

The City has received numerous complaints in the past about speeding, trucks, high traffic volumes and aggressive driving on Southview Drive and Bouchard Street from Janmar Court to Regent Street (see Exhibit "A").

The need for all-way stops at Cranbrook Crescent and at the intersection of Southview Drive and Bouchard Street have been reviewed in the past, and are not warranted. Although commonly requested, all-way stops are not effective as speed control devices, and can actually increase mid-block speeds as drivers make up for lost time. The unwarranted installation of all-way stops can decrease safety due to driver disrespect and non-compliance, especially for young children who expect that drivers will obey the law. All-way stops also have a negative environmental and economic impact by increasing fuel consumption as well as air and noise pollution caused by the constant braking and acceleration.

To deal with illegal trucking along the corridor, truck prohibition signs have been installed and letters have been sent to commercial property owners on Kelly Lake Road. Two Radar Speed Display signs have been installed on Southview Drive, which have increased driver compliance with the speed limit.

To continue to find solutions to the traffic problems the City retained IBI Group in 2008 to

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develop a Traffic Calming Policy and undertake a traffic calming pilot project for the Southview Drive/Bouchard Street corridor. The Institute of Transportation Engineers defines traffic calming as "the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour and improve conditions for non-motorized street users".

The study process involved a site visit to document the existing conditions along the route, and to gain an understanding of the issues surrounding the roadway. Speed studies, traffic volume counts and cut-through traffic were all reviewed by IBI Group. The study included two (2) public information meetings with area residents.

The first public meeting was held in May of 2008, and was intended to confirm the main issues with residents, present the results of the data collection, and introduce potential traffic calming measures.

IBI Group then began to develop alternative traffic calming plans for Southview Drive. The options reviewed included a "pedestrian oriented plan"; a "cycling oriented plan"; and a "full" traffic calming plan (see Exhibit "B"). The study recommended the implementation of the "full" traffic calming plan. The treatments recommended in the plan include the following:

1) Raised Median Island - West of Janmar Court

- Act as a gateway to the community
- Highlight the transition from rural to urban development
- Slow traffic by narrowing the lane and requiring vehicles to follow an indirect path

2) Curb Extensions at Kelly Lake Road

- Shorten crossing distance and improve safety for pedestrians
- Reduced turning radius to make it more difficult for trucks to turn

3) Raised Median Island - East of Stephen Street

- Slow traffic by narrowing the lane and requiring vehicles to follow an indirect path

4) Mid Block Curb Extension - Between East and West Leg of Cranbrook Crescent

- Improve visibility for vehicles exiting driveways on the north side of Southview Drive
- Slow traffic by narrowing the lane and requiring vehicles to follow an indirect path

5) Traffic Circle - Intersection of Southview Drive and Cranbrook Crescent East

- Area with high number of resident complaints about speeding and traffic volumes
- Greatest potential for speed reduction as they require a larger lateral shift for drivers to negotiate
- Does not deflect traffic vertically. Vertical elements are not approved for use on transit and emergency routes

6) Painted Centre Line - West of Bouchard Street

Traffic Calming devices were not recommended in this area due to the long horizontal curve and limited sight distance. However, as recommended in the Study, the centre line of Southview Drive was moved to the middle of the road to move westbound traffic away from the inside of the curve, allowing additional space for residents to back out of their driveways.

7) Raised Median Island - East of Marcel Street

- Serve as eastern gateway to the Southview Drive corridor
- Improve pedestrian safety by providing a refuge area in centre of road
- Slows traffic by narrowing the lane and requiring vehicles to follow an indirect path

The second public information meeting was held in June 2008 where IBI Group presented the preliminary preferred alternative, and received feedback from area residents.

In February 2009, City Council approved the Traffic Calming Policy for a one (1) year trial period. In March of 2009, IBI Group completed the traffic calming pilot project report for Southview Drive.

In June 2009, survey forms were delivered to all the properties on Southview Drive and Bouchard Street within the study area. The survey form included a layout and information about the preferred plan and requested that owners return the form indicating whether they supported the plan. A total of 87 responses were returned with an 86 percent support rate for the plan. This was well in excess of the 50 percent response rate and 60 percent approval rate required by the Traffic Calming Policy. In the Fall of 2009, the traffic calming devices were constructed along Southview Drive/Bouchard Street.

Upon completion of construction, the City received feedback both positive and negative towards the traffic calming devices. The following represents some of the negative comments received from residents and road users:

- Safety concerns
- Winter maintenance concerns
- Devices are not working to slow traffic
- Confusion about the traffic circle
- Difficulty accessing driveways near median islands
- Lack of devices west of the Southview Drive/Bouchard Street intersection

Subsequently, improvements have been made to signing and pavement markings along the corridor, and additional improvements are planned for this year, such as providing yellow hatching in advance of the medians and the traffic circle.

In order to determine the impact the traffic calming plan has had on speed, traffic volume and safety, staff has conducted a number of studies along the corridor this spring which are presented below:

Speed

High traffic speeds were identified by Southview Drive residents as a major concern prior to commencement of the traffic calming project, and at the May 8, 2008 public meeting.

Traffic speeds were measured prior to the installation of traffic calming devices by both City staff and the IBI Group. The results showed that the average speed for eastbound traffic ranged from 44 to 52 km/h along the corridor, while 85th percentile speeds ranged from 54 to 60 km/h. The 85th percentile speed is the speed at or below which 85 percent of drivers are travelling. This speed is used in the Traffic Calming Warrant and is a good indicator of how fast the majority of "reasonable" drivers are travelling.

City staff conducted additional speed studies in March and April 2010 to determine the effect that the implemented traffic calming devices has had on the average and 85th percentile speeds. The results of before and after speed studies are presented in Exhibits 'B' and 'C' and summarized below:

1) Raised Median Island - West of Janmar Court

As shown in Exhibit 'B' and 'C', the results of the speed studies show that average speed was reduced by 3.0 km/h for eastbound traffic and 0.7 km/h for westbound traffic. The 85th percentile speed was reduced by 6.9 km/h for eastbound traffic and 3.3 km/h for westbound.

The Canadian Guide to Neighbourhood Traffic Calming indicates that a 3 km/h reduction in the 85th percentile speed was achieved in a study in Maryland, U.S.A. using raised median islands.

These results indicate that the raised median island at this location has significantly reduced vehicle speeds for both eastbound and westbound traffic in this area. The results at this location have met and exceeded expectations based on previous studies.

2) Raised Median Island - East of Stephen Street

A speed study was conducted by City staff using the radar speed display sign that is installed between the two legs of Cranbrook Crescent from June 18, 2008 to August 18, 2008. The data collected from the speed signs on Southview Drive does not indicate direction of travel. Therefore, staff could only determine the average and 85th percentile speeds of the combined traffic which was 50.9 km/h, and 58.0 km/h respectively.

The post Traffic Calming Study at this location showed a 1.5 km/h reduction in the average speed, and a 2.0 km/h reduction in the 85th percentile speed.

While the speed reduction was not as great as achieved west of Janmar Court, these results fall within the expectations of the project. Speed reductions at narrowings are achieved by reducing lane widths. The more narrow the lane width, the greater the reduction in speed. However, as lane widths are reduced additional operational challenges are introduced.

3) Mid-Block Curb Extension - Between East and West Legs of Cranbrook Crescent

The results of the before and after speed studies at this location shows that the average speed for eastbound and westbound traffic was reduced by 1.9 km/h and 0.7 km/h respectively. The reduction in the 85th percentile speed was even greater at 5.3 km/h for eastbound traffic and 3.3 km/h for westbound traffic.

The Canadian Guide to Neighbourhood Traffic Calming indicates that when curb extensions have been installed on a collector road, the City of Ottawa has seen reductions of up to 8 km/h while the cities of Burlington and Kitchener have seen reductions of 2 km/h.

These results indicate that the curb extensions at this location have significantly reduced vehicles speeds for both eastbound and westbound traffic in this area.

4) Traffic Circle - Intersection of Southview Drive and Cranbrook Crescent East

A speed study was conducted by City staff using the radar speed display sign that is installed west of Cranbrook Crescent from June 18, 2008 to August 18, 2008. The results show that the average speed recorded was 47.0 km/h, while the 85th percentile speed

was 54.0 km/h before the traffic circle was installed.

City staff performed a post installation speed study at this location from March 9th to 19th, 2010. The results show the average speed was 41 km/h (6.0 km/h reduction), while the 85th percentile speed was 49 km/h (5.0 km/h reduction).

It should be noted that the radar display sign is actually recording speeds east of the circle. An additional speed study taken directly at the circle showed even lower speeds. The results show the average speed was 34.8 km/h (12.2 km/h reduction) while the 85th percentile speed was 40.2 km/h (13.8 km/h reduction).

The Canadian Guide to Neighbourhood Traffic Calming indicates municipalities have observed 85th percentile speed reductions ranging from 1 km/h (Richmond Hill, Ontario) to 21 km/h (Boulder, Colorado, U.S.A.) with the median (50th percentile) speed reduction being 6 km/h when using traffic circles.

These results indicate that the traffic circle installed at this location has achieved the highest reduction in speeds within the study area.

5) No Traffic Calming Devices between Cranbrook Crescent and Bouchard Street

City staff performed a speed study on March 23rd and 24th, 2010 on the horizontal curve, west of Bouchard Street, where no traffic calming devices were installed. The results of the speed study showed that the average speed for eastbound traffic was 52.1 km/h and 53 km/h for westbound traffic, while the 85th percentile speed was 56.3 km/h for eastbound traffic and 57.9 km/h for westbound traffic.

There were no speed studies taken directly in this area prior to Traffic Calming. Therefore, the speed in this area was compared to the vehicle speeds recorded by the IBI Group between the two legs of Cranbrook Crescent. The results show that the average speed increased by 0.1 km/h and 3.0 km/h in the eastbound and westbound directions, but decreased in the 85th percentile speed by 3.7 km/h for eastbound traffic and 0.1 km/h for westbound traffic.

These results appear to confirm the concerns that residents have expressed to City staff that there has been no significant reduction in vehicle speeds in this area since traffic calming was implemented on Southview Drive.

6) Raised Median Island - East of Marcel Street

A speed study conducted by the IBI Group on April 22nd and 23rd, 2008 at this location concluded that the average speed was 44 km/h for eastbound traffic and 47 km/h for westbound traffic, while the 85th percentile speed was 50 km/h for eastbound traffic and 55 km/h for westbound traffic.

As shown on Exhibits 'B' and 'C', the results of the after study indicate only a modest reduction in operating speed was achieved in this area (0.1 km/h to 1.9 km/h).

While the results do not indicate a significant reduction in vehicles speeds for either direction of traffic, it is important to note that vehicle speeds at this location were the lowest in the study area prior to traffic calming being installed.

Volume

High traffic volumes were identified by Southview Drive residents as an area of concern prior to commencement of the Traffic Calming Project and at the May 8, 2008 public meeting. In April 2008, the IBI Group recorded volume in 3 locations on Southview Drive. These volumes were factored by City staff to determine the AADT at each location (see Exhibit 'D'). Staff collected volume data at the same three (3) locations in March 2010. The results show that traffic volume appears to have decreased significantly on Bouchard Street, west of Marcel Street by 1,600 vehicles. However, they have increased slightly between both legs of Cranbrook Crescent by 400 vehicles. These results may be affected by the current labour dispute, and City staff will collect additional volume studies in the future to validate these results.

Truck Traffic

A major concern of Southview Drive residents prior to undertaking the traffic calming project was the significant amount of illegal truck traffic using the corridor. Since traffic calming measures were implemented, fewer complaints have been received regarding prohibited trucks using this corridor.

Collision Analysis

A desired effect of traffic calming is to reduce the number of collisions that involve vulnerable road users such as pedestrians and cyclists, or that may have been caused by vehicles travelling at excessive speeds or aggressive driver behaviour.

City staff reviewed collision data from January 1, 2008 to June 31, 2009. During this time frame, there were ten reported collisions that occurred between Janmar Court and Regent Street, excluding the intersection of Bouchard Street and Regent Street. Of these ten reported collisions, no collisions involved vulnerable road users, and staff identified six (6) collisions that may have been preventable by the installation of traffic calming measures. The collision data was reviewed from September 1, 2009 to March 31, 2010 after the traffic calming measures were installed. During this time frame, there were five reported collisions within the study area. Of these five reported collisions, no collisions involved vulnerable road users while four of the collisions may have been the result of vehicles travelling at excessive speeds or aggressive driver behaviour.

The City's maintenance staff also had to replace the hazard markers on the various traffic calming devices. This may be indication of unreported collisions or acts of vandalism.

Since only a seven month period has lapsed, it is difficult to assess if the installed traffic calming measures have had an effect on the number of collisions in the study area.

Maintenance

Snow plowing issues around the traffic calming measures was a concern raised by many people. During this past winter season (November 1, 2009 to April 13, 2010) there were only two winter maintenance calls logged by the City regarding the installed traffic calming devices. The low number of maintenance calls received this season may be due more to the lack of snowfall events than the design of the traffic calming devices. The costs and complaints related to winter maintenance will need to be monitored in the future.

Robinson Drive

One of the goals of traffic calming is to not move the problems to a parallel street in the neighbourhood. In this area, Robinson Drive would be the most likely roadway to be used to by-pass the Southview Drive corridor.

To determine if traffic calming on Southview Drive has had any adverse effect on Robinson Drive, traffic volume and speed studies were conducted before and after the traffic calming measures were constructed. The traffic volume count conducted on Robinson Drive, between the two legs of Strathmere Crescent, shows there was a slight decrease in the annual average daily traffic volume (AADT) after traffic calming was constructed. In June 2009 the AADT was 1,130 compared to 1,070 in April 2010.

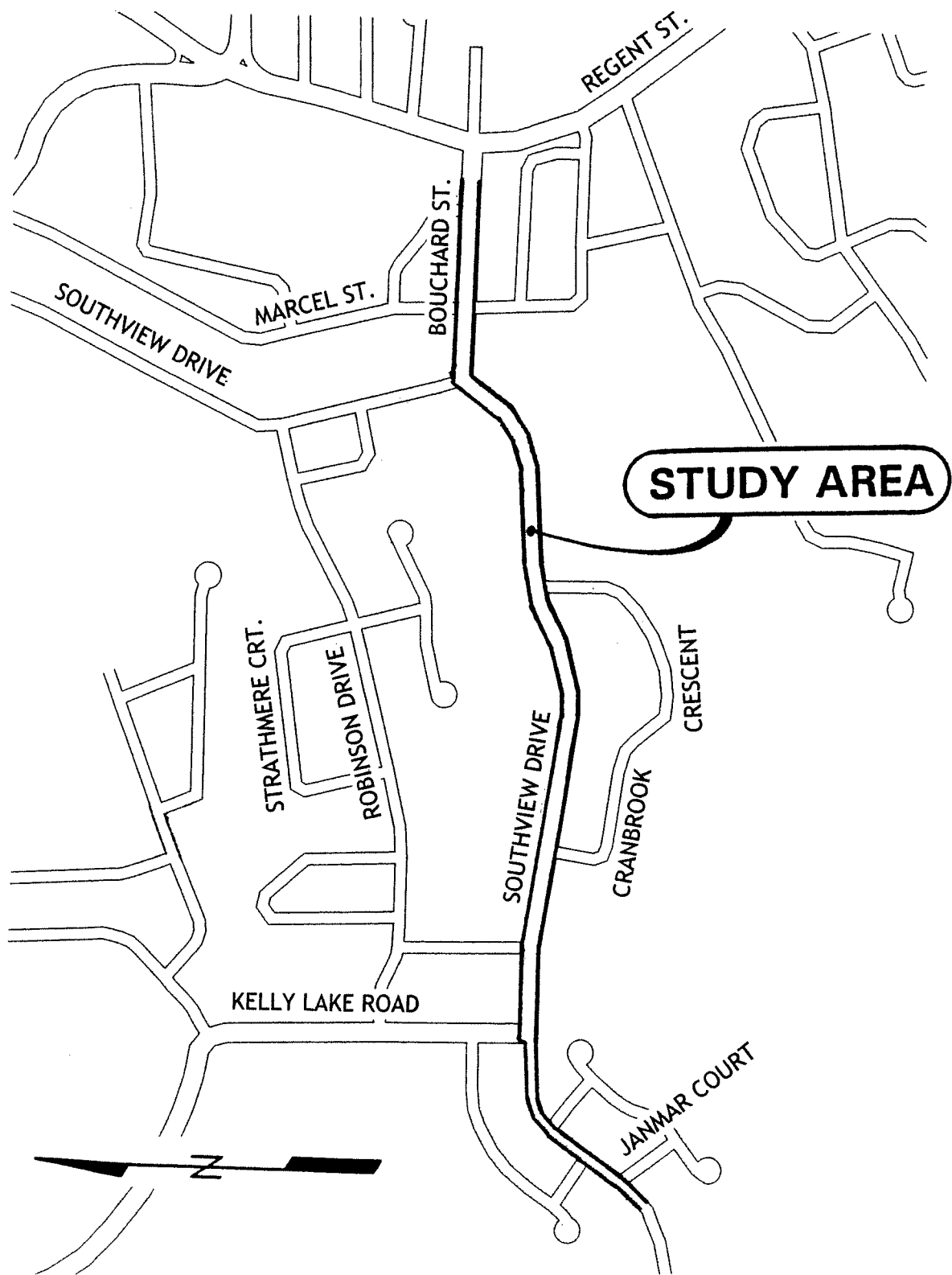
Speed studies conducted at the same location revealed a slight increase in average speed after the traffic calming measures were introduced. The average speed increased by 1 km/h from 46 km/h to 47 km/h respectively.


Comments received by the residents of Robinson Drive indicate that they have not noticed a change in traffic patterns on their street since traffic calming was installed.

Conclusion

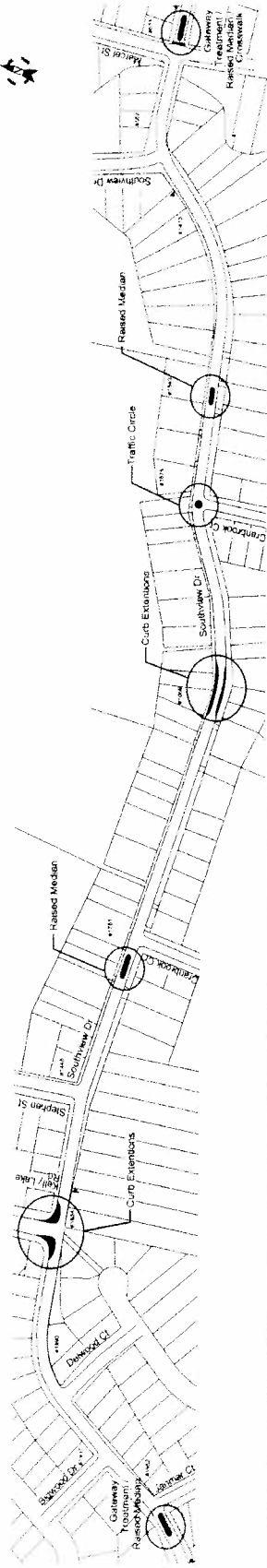
The results of the before and after studies show that the traffic calming devices have been successful in reducing vehicle operating speeds. Therefore staff recommends that the Traffic Calming Policy be adopted on a permanent basis.

EXHIBIT: A

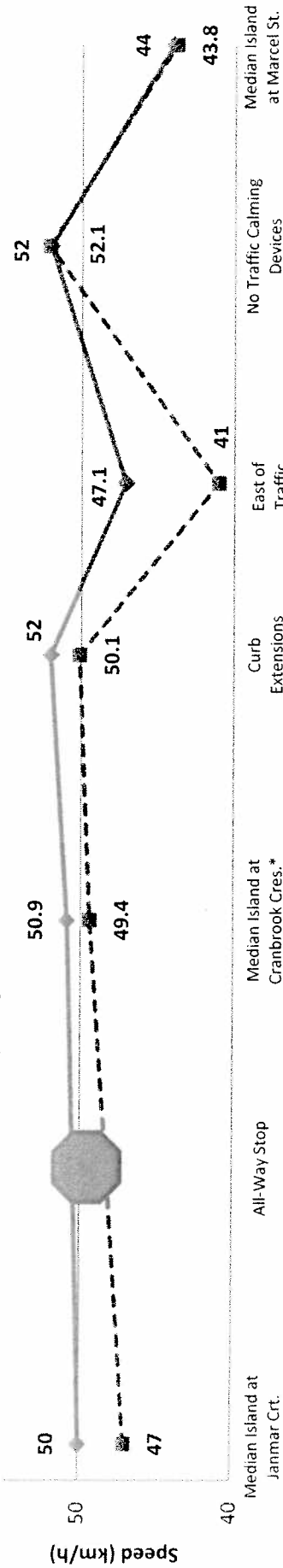


	SOUTHVIEW DRIVE TRAFFIC CALMING		
	AFTER STUDY RESULTS		
	NOT TO SCALE		2010 - 04 -19

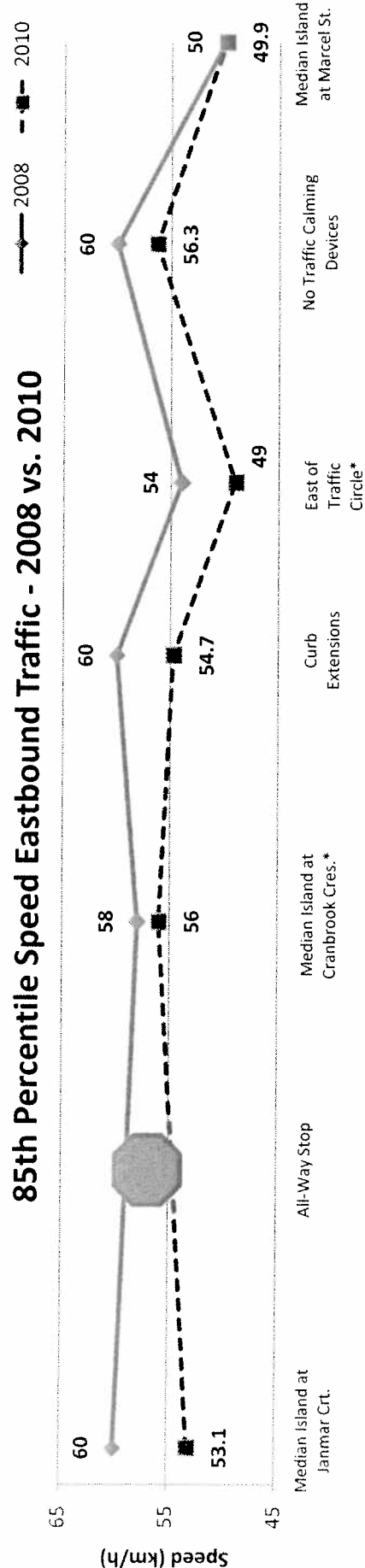
Southview Drive / Bouchard Street - Traffic Calming "Fuji Plan"



Average Speed Eastbound Traffic - 2008 vs. 2010

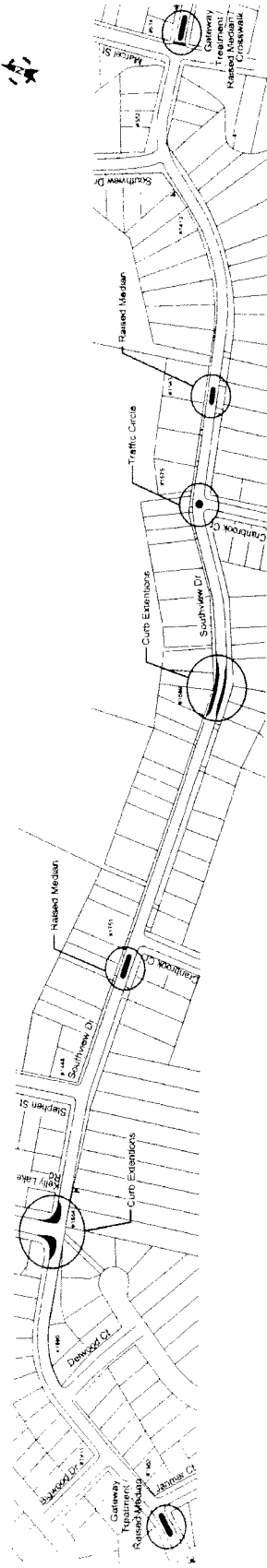


85th Percentile Speed Eastbound Traffic - 2008 vs. 2010

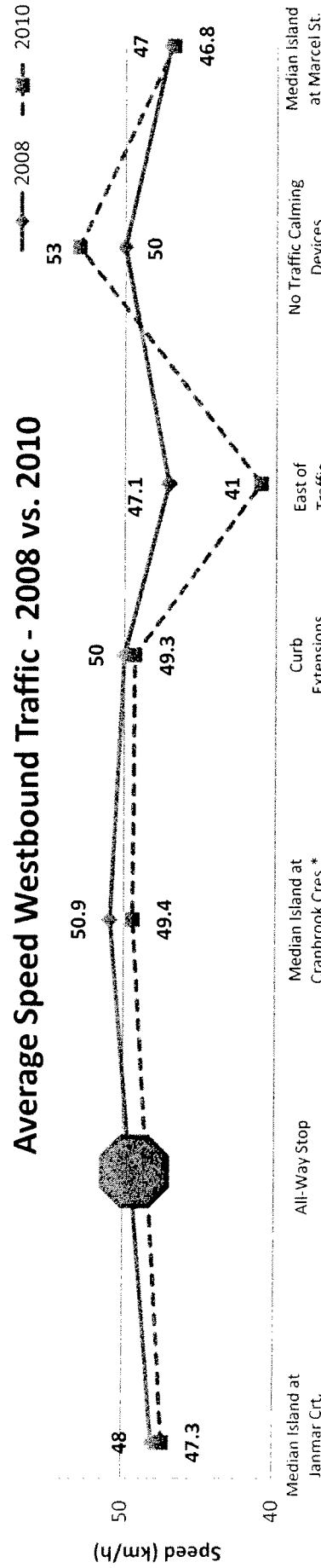


* Data recorded at these locations does not record direction of travel. Displayed speeds are for combined Eastbound and Westbound traffic.

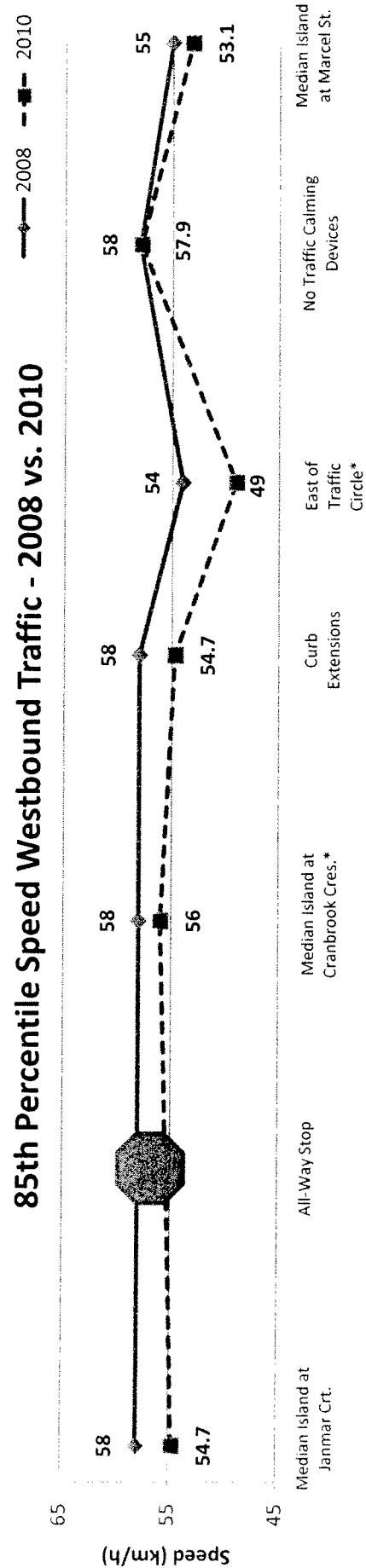
Southview Drive / Bouchard Street - Traffic Calming "Full Plan"



Average Speed Westbound Traffic - 2008 vs. 2010



85th Percentile Speed Westbound Traffic - 2008 vs. 2010



* Data recorded at these locations does not record direction of travel. Displayed speeds are for combined Eastbound and Westbound traffic.

EXHIBIT: D

Southview Drive/Bouchard Street AADT

	April 2008	March 2010	Difference	
			# of Vehicles	%
Between Janmar Court and Bigwood Drive	1930	1900	-30	-1.6
Between the legs of Cranbrook Crescent	9060	9470	410	4.5
Between Southview Drive and Marcel Street	11010	9420	-1590	-14.4