

Presented To:	Operations Committee
Presented:	Monday, Jul 07, 2014
Report Date	Tuesday, Jun 24, 2014
Type:	Managers' Reports

## Request for Decision

### All-Way Stop Control - Bancroft Drive at Shelbourne Street

#### Recommendation

THAT the City of Greater Sudbury maintain the current traffic control at the intersection of Bancroft Drive at Shelbourne Street and Brentwood Court;

AND THAT the City of Greater Sudbury forward the results of the speed studies to Greater Sudbury Police Services and request that they increase the level of enforcement in the area, in accordance with the report dated June 24, 2014 from the General Manager of Infrastructure Services regarding All-Way Stop Control - Bancroft Drive at Shelbourne Street.

## Background

At the September 2013 Operations Committee meeting, concerns were raised with the speed of vehicles travelling on Bancroft Drive and the difficulty children were having crossing Bancroft Drive to access the playground on Shelbourne Street. As a result of these concerns, staff was directed to bring forth a report on the appropriateness of a four way stop at the intersection of Bancroft Drive at Shelbourne Street and Brentwood Court.

Bancroft Drive at Shelbourne Street and Brentwood Court is a cross intersection located approximately 180 metres east of Fourth Avenue within Ward 11 (see Exhibit 'A'). Brentwood Court terminates in a cul-de-sac approximately 100 metres south of Bancroft Drive and has only 15 houses constructed on it. Currently this intersection is controlled with stop signs facing southbound traffic on Shelbourne Street and northbound traffic on Brentwood Court. A City playground is located 270 metres north of Bancroft Drive on Shelbourne Street. Bancroft Drive carries an annual average daily traffic volume of 5,000 vehicles in this area and is designated as a secondary arterial road. The speed limit on Bancroft Drive is 50 km/h.

A turning movement count was conducted on May 27, 2014 to determine if an all-way stop is warranted and how many people are crossing Bancroft Drive at this intersection. Applying the data from the turning movement count to the City's minimum volume warrant indicates that the vehicle and pedestrian volume from the side street meets only 21 percent of the minimum volume requirements (see Exhibit 'B'). There were a total of 22 pedestrians (18 children and 4 adults) who crossed Bancroft Drive during the seven peak

#### Signed By

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hours. It should be noted that five of the children who crossed Bancroft Drive did so while a school bus stopped traffic on Bancroft Drive.

A review of the City's collision information from 2011 to 2013 revealed that there were no collisions at this intersection during this three year period. For an arterial roadway, the collision warrant requires a minimum of four collisions per year over a three year period.

A speed study was also completed on Bancroft Drive just east of this intersection. The speeds of over 5,000 vehicles were recorded over a 24 hour period. The average speed recorded was 52 km/h while the 85<sup>th</sup> percentile speed was 61 km/h. The 85<sup>th</sup> percentile speed is the speed at or below which 85 percent of drivers are travelling and is often used for establishing maximum speed limits. This study confirms that the majority of drivers on Bancroft Drive in the area of this intersection are travelling at speeds in excess of the 50 km/h speed limit.

Staff also reviewed sight distances at this intersection. This intersection exceeds the minimum sight distance recommended by the Transportation Association of Canada's Geometric Design Guide for Canadian Roads.

### Recommendation

All-way stops are often requested by residents in response to concerns on their street such as speeding, traffic volume and safety for pedestrians, children and cyclists. Road authorities take guidance from the Ontario Traffic Manual when determining when and where to install stop signs.

"The purpose of the Ontario Traffic Manual (OTM) is to provide information and guidance for transportation practitioners and to promote uniformity of treatment in the design, application and operation of traffic control devices and systems across Ontario. The objective is safe driving behaviour achieved by a predictable roadway environment through the consistent and appropriate application of traffic control devices. Further purposes of the OTM are to provide a set of guidelines consistent with the intent of the Highway Traffic Act and to provide a basis for road authorities to generate or update their own guidelines and standards."

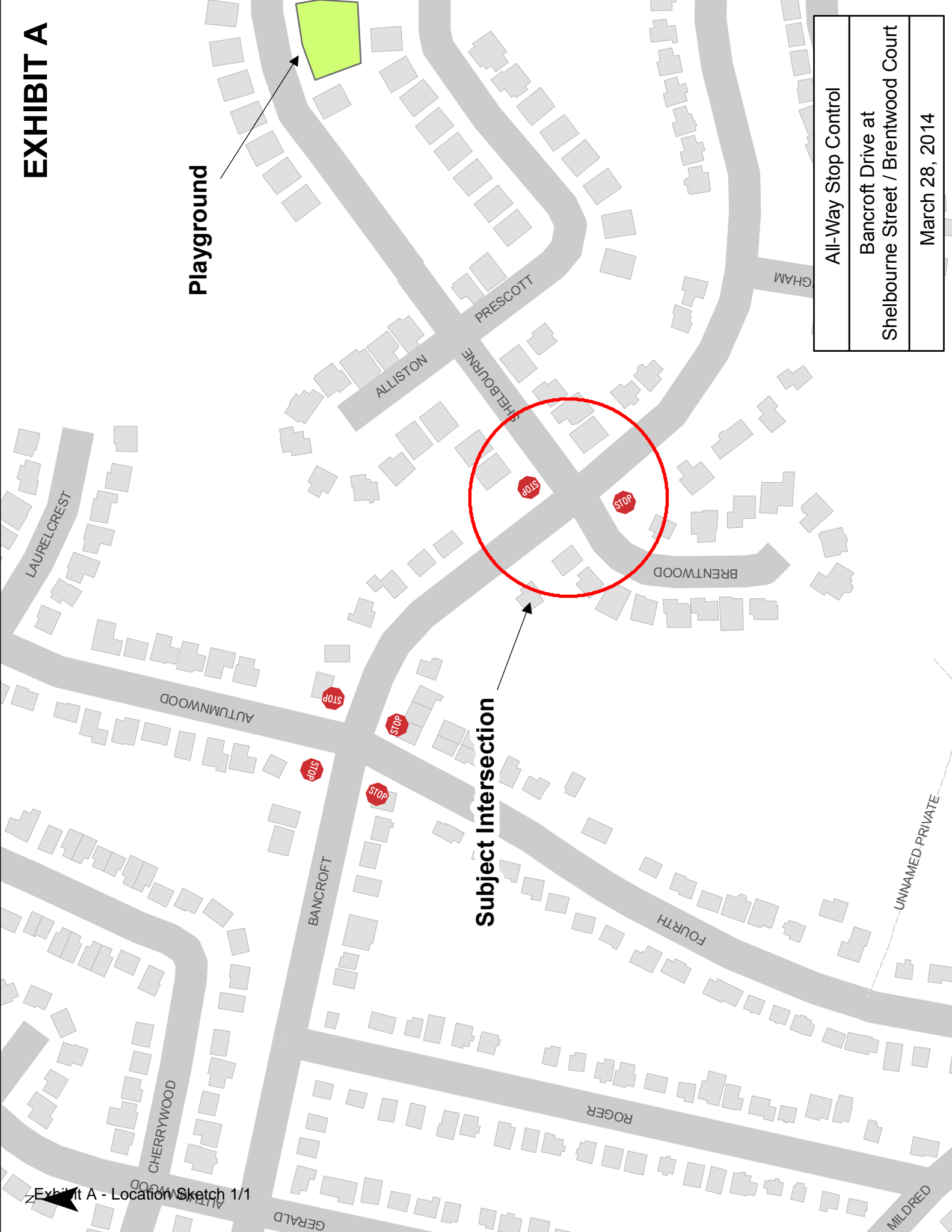
"The purpose of the stop sign is to clearly assign the right-of-way between vehicles approaching an intersection from different directions when traffic signals are not warranted or not yet installed and it has been determined that a yield sign is inadequate." In general, "all-way stops should only be considered at the intersection of two relatively equal roadways having similar traffic volume demand and operating characteristics".

The OTM states that all-way stops should not be used as a speed control device. While the operating speeds in the immediate proximity of an all-way stop will be lowered, the area just beyond the all-way stop typically has operating speeds that return to normal or even increase as drivers try to make up for lost time. This is clearly demonstrated on Bancroft Drive near Shelbourne Street. There is an all-way stop installed at the intersection of Bancroft Drive and Fourth Avenue which is only 180 metres west of Shelbourne Street and the recorded 85<sup>th</sup> percentile speed just east of Shelbourne Street was in excess of 60 km/h. It is clear that drivers have not reduced their operating speed due to the existing all-way stop. Additionally, the OTM recommends a minimum of 250 metre spacing between all-way stops. With an all-way stop already installed at the intersection of Bancroft Drive and Fourth Avenue, this minimum spacing could not be maintained.

As indicated above, traffic volume, pedestrian volume and collision history do not warrant the installation of an all-way stop at the intersection of Bancroft Drive at Shelbourne Street and Brentwood Court. Staff recommends that traffic control remain unchanged at this intersection.

Staff recommends that the results of the speed studies be forwarded to Greater Sudbury Police Services with a request for increased enforcement on Bancroft Drive in the area of Shelbourne Street and Brentwood Court.

# EXHIBIT A



Playground

Subject Intersection

All-Way Stop Control
Bancroft Drive at Shelbourne Street / Brentwood Court
March 28, 2014

# EXHIBIT B

## CITY OF GREATER SUDBURY ALL-WAY STOP WARRANTS

Location:	Bancroft Dr to Shelbourne St	Date:	June 2, 2014
Date of TM Count:	May 27, 2014	Analyst:	PG
Type of Intersection:	Cross		
Roadway Type	Arterial/Major Collector		
AADT of Main Road:	7500		

### All-Way Stop Warrant Summary

Warrant #1	Minimum Vehicle Volume	21	%
Warrant #2	Collision History	0	%
Warrant #3	Traffic Control Signals	No	Y/N

**All-Way Stop Warranted?** **No** Y/N

Warrant #1 - Minimum Vehicle Volume					
Roadway Type	Arterial/Major Collector	Minor Collector	Local	Vehicles per hour	Percent Compliance
AADT	> 5000	1000 - 5000	< 1000		
Count Period	7 hours	4 peak hours	4 peak hours		
Total vehicle volume from all approaches is ≥	500/hr	350/hr	250/hr	417	83%
Veh + Pedestrian volume from side street is ≥	200/hr	140/hr	N/A	42	21.0%
Traffic Split	70/30	70/30	70/30	92/8	27%

Warrant #2 - Collision History					
Roadway Type	Arterial/Major Collector	Minor Collector	Local	Total Number of Collisions	Percent Compliance
Total Collisions over a 3 year period	12*	9*	6*	0	0%
Warrant #3 Traffic Control Signals are warranted and urgently needed, signs to be used as interim measures.				No	Y/N

\* Only those collisions susceptible to relief through multi-way stop control must be consider (i.e. right angle and turning types).

- If the intersection meets warrant # 1, then the all-way stop is recommended regardless of the remaining warrants.
- If the intersection does not meet warrant #1 and does not meet warrant #2, then the all-way stop is not recommended.
- If the intersection does not meet warrant #1 and does meet warrant #2, then the all-way stop is recommended.