



Report to: General Committee

Date Report Authored: January 9, 2013

SUBJECT: Castan Avenue & Ray Street Proposed All-way Stop Control

PREPARED BY: Musa Deo, Traffic Operations Technologist, ext. 2736
David Porretta, Traffic Operations Supervisor, ext. 2040

RECOMMENDATION:

- 1) That the report entitled “Castan Avenue & Ray Street Proposed All-way Stop Control”, be received;
- 2) And that Schedule 12 (Compulsory Stops) of Traffic By-law 106-71 be amended to include the intersection of Castan Avenue and Ray Street;
- 3) And that the Operations Department be directed to install the appropriate signs and pavement markings at the subject locations;
- 4) And that the cost of materials and installation for the traffic signs and pavement markings be funded from capital project # 11305 (Traffic Operational Improvements) in the amount of \$500;
- 5) And that York Region Police be requested to enforce the all-way stop control upon installation of these stop signs and passing of the By-law;
- 6) And that staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

This report recommends implementing an all-way stop at the intersection of Castan Avenue and Ray Street to improve traffic operational safety and efficiency.

BACKGROUND:

Resident concerns were received through Ward 3 Councillor’s Don Hamilton’s office, regarding traffic safety at the intersection of Castan Avenue and Ray Street. City staff was requested to investigate the need for an all-way stop control at the intersection to mitigate these concerns.

Castan Avenue is a two-lane residential collector road, with an average daily traffic (ADT) volume of 2,300 vehicles. Ray Street is a local residential collector road, with an ADT of 1,200 vehicles. Stop control is currently assigned to Ray Street only, with Castan Avenue designated as the “through” street.

DISCUSSION:

An All-way stop control warrant analysis was conducted at Castan Ave. and Ray St.

An all-way stop control may be considered where provincial warrant guidelines are met, as outlined in the Ontario Traffic Manual. The warrant considers total vehicular volume and volume

distribution between the “major” and “minor” approaches of the intersection during the busiest hour of the day.

In November 2012, the Operations Department conducted an all-way stop warrant analysis during the busiest one-hour period of the day (5:00pm – 6:00pm). The warrant analysis results are as follows:

Figure 1: All-way Stop Warrant Results (Nov. 2012)

CRITERIA 1 Total Traffic Volume (All Approaches)			CRITERIA 2 Volume Assigned to “Minor” Street (Ray St.)		
Minimum Criteria	Recorded Value	Criteria Met?	Minimum Criteria	Recorded Value	Criteria Met?
350	349	NO	35%	34%	NO

For an all-way stop control to be justified, both Criteria 1 and 2 must be met. While the study results are extremely close to achieving warrant criteria, they fall just short.

Collisions could be mitigated through the provision of an all-way stop

From January 2009 to December 2011, there have been a total of nine (9) reported collisions at the subject intersection; all were right-angle collisions. Collisions of this type can be dangerous, as they can occur unexpectedly with point-of-impact potentially being at the driver or passenger side of a vehicle.

An urban two-lane minor roadway at a four-legged intersection with side-stop controls and an ADT volume of 3,500 vehicles should typically have less than one (1) collision per year.¹ With an average of three (3) collisions occurring per year over three (3) years, collision frequency at the subject intersection is higher than expected. Transportation studies have shown that converting an intersection from a two-way stop control to an all-way stop control may be reduce collisions by up to 70%, particularly right-angle collisions.²

Implementation of an all-way stop control is recommended

While the subject intersection falls just short of achieving minimum warrant criteria, the frequency of right-angle collisions is not satisfactory. In consideration of both factors, staff recommends that an all-way stop control be implemented to improve operational safety and efficiency at the subject intersection.

FINANCIAL CONSIDERATIONS:

The cost of materials and installation for the traffic signs and pavement markings in the amount of \$500 has been included in the capital project # 11305 (Traffic Operational Improvements). On-going maintenance costs for this installation will be considered in the 2014 Operations Department operating budgets.

¹ Highway Safety Manual: Volume 2, Chapter 12, Figure 12-12 (page 12-31).

² Highway Safety Manual: Volume 3, Chapter 14, Table 14-5 (page 14-12).

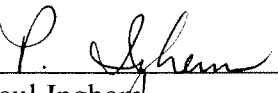
ALIGNMENT WITH STRATEGIC PRIORITIES:

This report aligns with the community safety component of Markham's transportation strategic priority.

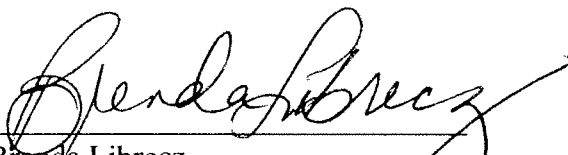
DEPARTMENTS CONSULTED AND AFFECTED:

Not applicable.

RECOMMENDED BY:



Paul Ingham,
Director, Operations



Brenda Librecz,
Commissioner, Community & Fire Services

ATTACHMENTS:

Attachment "A" – Proposed All-Way Stop Control Location Map

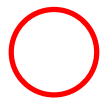
Attachment "B" – All-way Stop Control By-Law Amendment

Hwy 7	McCowan Rd
	Hwy 407
Kennedy Rd	



KEY MAP

LEGEND



Proposed All-way
Stop Control

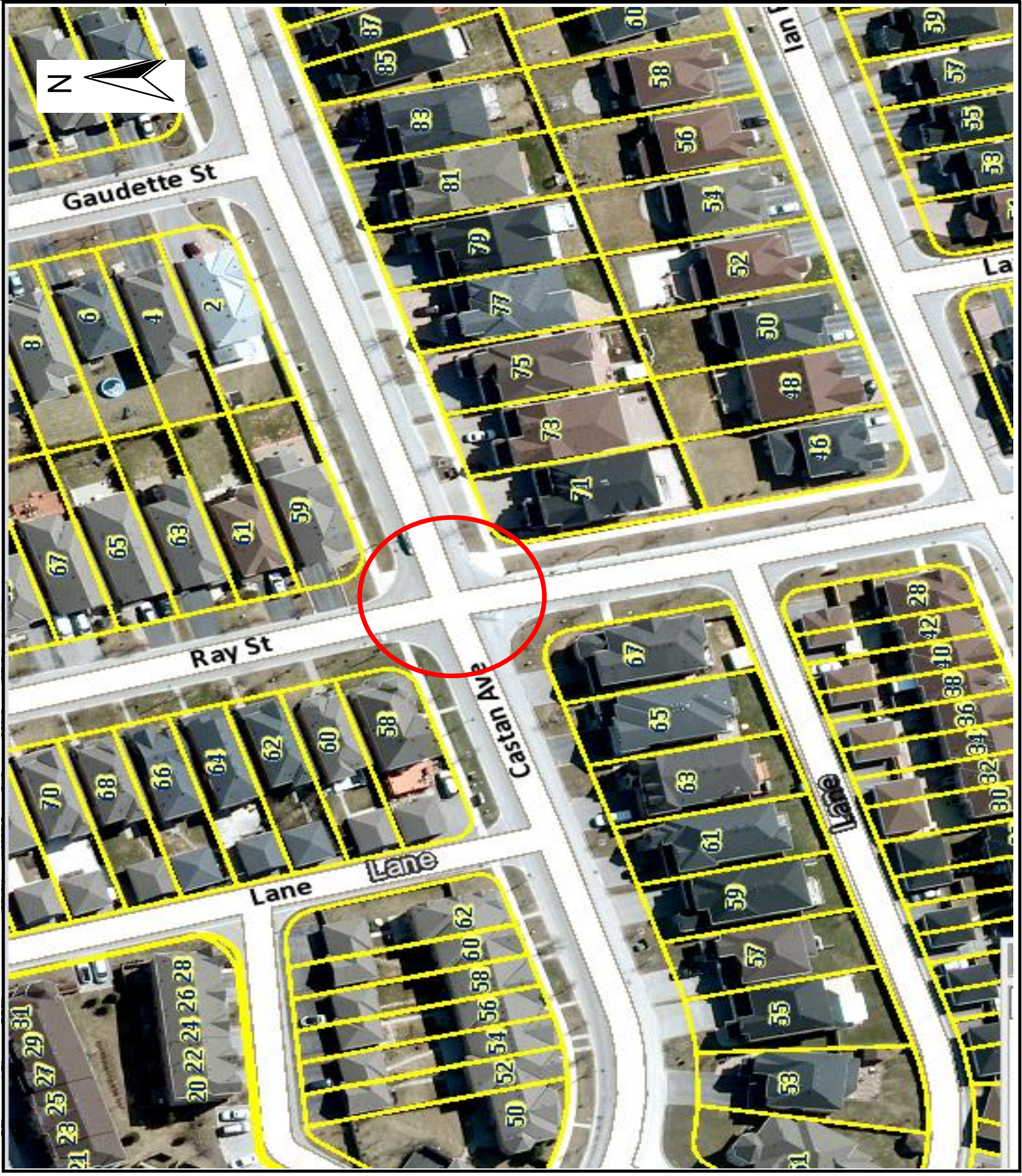
PROPOSED ALL-WAY
STOP CONTROL

Castan Ave. & Ray St.



Traffic Operations
January, 2013

Attachment A





BY-LAW NUMBER _____

TO AMEND BY-LAW 106-71

BE IT ENACTED BY THE COUNCIL OF THE CORPORATION OF THE CITY OF MARKHAM THAT TRAFFIC BY-LAW 106-71 BE AND THE SAME IS HEREBY AMENDED AS FOLLOWS:

1. That Schedule 12 of Traffic By-law 106-71, pertaining to “Compulsory Stops”, be amended by adding the following:

COLUMN 1	COLUMN 2	COLUMN 3
<u>INTERSECTION</u>	<u>FACING TRAFFIC</u>	<u>LOCATION OF STOP SIGN</u>
Castan Avenue and Ray Street	Eastbound on Castan Avenue	South side of Castan Avenue, on the west side of Ray Street
Castan Avenue and Ray Street	Westbound on Castan Avenue	North side of Castan Avenue, on the east side of Ray Street
Castan Avenue and Ray Street	Northbound on Ray Street	South side of Castan Avenue, on the east side of Ray Street
Castan Avenue and Ray Street	Southbound on Ray Street	North side of Castan Avenue, on the west side of Ray Street

2. The By-Law shall come into force and effect upon receiving the third reading by the Council of the City of Markham and also when authorized signs have been erected.

READ A FIRST, SECOND AND THIRD TIME AND PASSED THIS _____

DAY OF _____, 2013.

KIMBERLY KITTERINGHAM
CITY CLERK

FRANK SCARPITTI
MAYOR

ATTACHMENT “B”