



Report to: Development Services Committee

Report Date: June 26, 2017

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**SUBJECT:** Church Street & Elm Street Proposed All-way Stop Control (Ward 4)

**PREPARED BY:** Dan Ahir, Traffic Operations Technologist, ext. 2736  
David Porretta, Supervisor, Traffic Operations, ext. 2040

**REVIEWED BY:** Loy Cheah, Senior Manager, Transportation, ext. 4838

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**RECOMMENDATION:**

- 1) That the report entitled “Church Street & Elm Street Proposed All-way Stop Control (Ward 4)”, be received;
- 2) And that Schedule 12 of Traffic By-law 106-71, pertaining to compulsory stops, be amended to include all approaches to the intersection of Church Street & Elm 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 # 083-5350-17162-005;
- 5) And that York Region Police be requested to enforce the all-way stop controls 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 intersections of Church Street & Elm Street, to improve intersection operations and address pedestrian safety concerns.

**BACKGROUND:**

Traffic Operations staff received concerns from Markham District High School regarding traffic safety concerns at the intersection of Church Street & Elm Street. The subject intersection is located in Markham Village, east of Main Street Markham and north of Highway 7 (see Attachment “A”). Church Street is a 2-lane minor collector road with an average daily traffic (ADT) volume of 4,000 vehicles. Elm Street is a local road, with an ADT volume of 1,700 vehicles. Stop control at the intersection is currently assigned to Elm Street only, giving traffic on Church Street the right-of-way. Markham District High School is located approximately 220 metres to the east of the intersection and is a significant generator of vehicular and pedestrian traffic.

**DISCUSSION:**

**All-way stop control warrant analysis was conducted at the subject intersection**

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

volume and the volume distribution between the intersecting roadways during the busiest hour of the day.

In September 2016, Traffic Operations staff conducted an all-way stop warrant analysis during the busiest one-hour period of a typical weekday at the intersection. The warrant analysis results are as follows:

**Figure 1: Church Street & Elm Street - All-way Stop Technical Warrant Results**

CRITERIA #1 Total Traffic Volume (All Approaches)			CRITERIA #2 Volume Assigned to "Minor" Street (Elm Street)		
Minimum Criteria	Recorded Value	Criteria Met?	Minimum Criteria (4-way)	Recorded Value	Criteria Met?
350	716	YES	35%	28%	NO

While the requirements for Criteria #1 were satisfied, Criteria #2 was not.

#### **All-way stop control is recommended at Church Street & Elm Street**

While the intersection did not satisfy both technical warrants, the OTM does not preclude Transportation & Traffic Engineering practitioners from recommending an all-way stop on the basis of other qualitative data and professional transportation engineering judgment. As such, staff has conducted further assessment at the intersection, revealing the following:

- During the busiest 8-hours of the day, 431 pedestrians cross Church Street, which currently operates under free-flow conditions;
- While collision frequency at this intersection is low, potential conflicts (or "near misses") between turning vehicles and pedestrians crossing Church Street is routinely occurring;
- The road grade attributed to the nearby ravine (Mt. Joy Creek) restricts sightline visibility for vehicles approaching from the east on Church Street.

The provision of an all-way stop will mitigate these concerns by requiring all vehicles to come to a complete stop at the intersection and also give right-of-way to vehicles and pedestrians that are entering Church Street. Improved safety for pedestrians will also complement active transportation initiatives at Markham District High School.

#### **FINANCIAL CONSIDERATIONS:**

The cost of materials and installation for the traffic signs and pavement markings in the amount of \$1,000 has been included in the capital project # 083-5350-17162-005 (Traffic Operational Improvements). On-going maintenance costs will be managed within the Operations Department's existing operating budget.

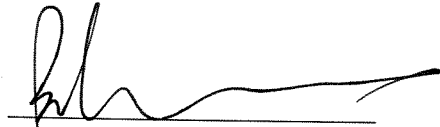
#### **ALIGNMENT WITH STRATEGIC PRIORITIES:**

The recommendations identified within this report align with the strategic focus for a Safe & Sustainable Community, through the ongoing management of the City's transportation network.

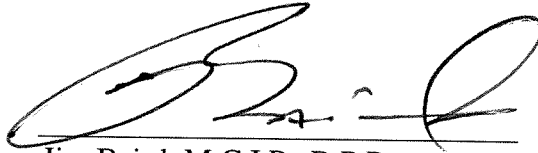
**DEPARTMENTS CONSULTED AND AFFECTED:**

Operations Department has been circulated this report, recognizing operating impacts associated with the additional regulatory signs and pavement markings.

**RECOMMENDED BY:**



Brian Lee, P.Eng  
Director, Engineering

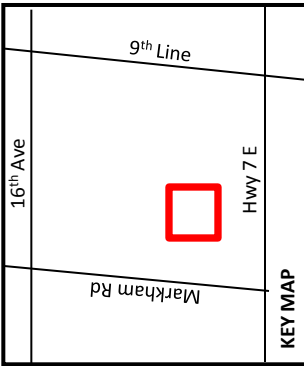


Jim Baird, M.C.I.P., R.P.P.  
Commissioner, Development Services

**ATTACHMENTS:**

Attachment "A" – Map: Church St & Elm St

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



**PROPOSED**  
**ALL-WAY STOP CONTROL**

**Church St. & Elm St.**

**MARKHAM**  
Engineering Dept.

May 2017

**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>
Church Street & Elm Street	Eastbound on Church Street	South side of Church Street, on the west side of Elm Street
Church Street & Elm Street	Westbound on Church Street	North side of Church Street, on the east side of Elm 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 \_\_\_\_\_, 2017.

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KIMBERLY KITTERINGHAM  
CITY CLERK

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FRANK SCARPITTI  
MAYOR