



Report to: General Committee

Date Report Authored: October 21, 2014

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**SUBJECT:** Proposed All-way Stop Controls – Hillmount Road & Willow Heights Boulevard; Castlemore Avenue & Swan Park Road

**PREPARED BY:** Audrey Basham, Traffic Operations Technologist, ext. 4020  
Ravali Kosaraju, Traffic Operations Supervisor (Acting), ext. 2608

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**RECOMMENDATION:**

- 1) That the report entitled “Proposed All-way Stop Control – Hillmount Road & Willow Heights Boulevard; Castlemore Avenue & Swan Park Road”, 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 Hillmount Road & Willow Heights Boulevard;
- 3) And that Schedule 12 of Traffic By-law 106-71, pertaining to compulsory stops, be amended to include all approaches to the intersection of Castlemore Avenue & Swan Park Road;
- 4) And that the Operations Department be directed to install the appropriate signs and pavement markings at the subject locations;
- 5) And that the cost of materials and installation for the traffic signs and pavement markings be funded from capital project # 14228 (Traffic Operational Improvements) in the amount of \$1,000;
- 6) 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;
- 7) 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 Hillmount Road at Willow Heights Boulevard and Castlemore Avenue at Swan Park Road, to improve intersection operations and address safety concerns.

**BACKGROUND:**

Operations staff received concerns from several constituents regarding operational safety at the intersections of Hillmount Road at Willow Heights Boulevard and Castlemore Avenue & Swan Park Road.

The intersection of Hillmount Road & Willow Heights Boulevard is located south of Major Mackenzie Drive and west of Woodbine Ave. (see Attachment “A”). Hillmount Road is a residential collector road with an average daily traffic (ADT) volume of 4,500 vehicles near the subject intersection. Willow Heights Boulevard is a local residential road, with an ADT volume of 1,800 vehicles. Lincoln Alexander Public School is located at the northwest corner of this intersection and contributes significant vehicular and pedestrian traffic at the intersection. Stop

control at the intersection is currently assigned to Willow Heights Boulevard only, giving traffic on Hillmount Road the right-of-way.

The intersection of Castlemore Avenue and Swan Park Road is located in the Greensborough community (see Attachment “B”). Castlemore Avenue is a minor collector road with an ADT volume of 2,300 vehicles per day. Swan Park Road is a minor collector road, with an ADT volume of 1,500 vehicles. Currently, stop control at the intersection is assigned to Swan Park Road only, giving traffic on Castlemore Avenue the right-of-way. St. Julia Billiard Catholic Elementary School is located south of the intersection on the east side of Swan Park Road, contributing significant pedestrian traffic at the intersection.

**DISCUSSION:**

In response to the aforementioned concerns, Operations Department conducted an all-way stop warrant analysis at the two subject intersections. 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.

**All-way stop control is recommended at Hillmount Road & Willow Heights Drive.**

In September 2014, the Operations Department 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: Hillmount Rd & Willow Heights Blvd - All-way Stop Warrant Results**

CRITERIA #1 Total Traffic Volume (All Approaches)			CRITERIA #2 Volume Assigned to “Minor” Street (Willow Heights Blvd.)		
Minimum Criteria	Recorded Value	Criteria Met?	Minimum Criteria (3-way)	Recorded Value	Criteria Met?
350	471	YES	25%	27%	YES

All-way stop control is warranted when both Criteria #1 and Criteria #2 are satisfied. As shown above, the intersection meets Provincial guidelines for all-way stop control. Therefore, Operations Department recommends that an all-way stop control be provided. Once implemented, it is expected that the all-way stop control will improve intersection operations and pedestrian safety.

**All-way stop control at Castlemore Avenue & Swan Park Road is not warranted, but recommended to address traffic operational safety concerns.**

Since 2010, Operations Department has been monitoring traffic operations at the subject intersection on an ongoing basis. Approximately six traffic studies have been conducted at the intersection over the past four years. Although each study did not identify any particular deficiencies at the intersection, it was apparent that traffic volumes on Castlemore Avenue and Swan Park Road have increased. As such, multiple traffic counts and all-way stop warrant studies were conducted, most recently in early October 2014. Results of the all-way stop warrant are shown below:

**Figure 2: Castlemore Ave & Swan Park Rd - All-way Stop Warrant Results**

CRITERIA #1 Total Traffic Volume (All Approaches)			CRITERIA #2 Volume Assigned to "Minor" Street (Swan Park Rd.)		
Minimum Criteria	Recorded Value	Criteria Met?	Minimum Criteria (4-way)	Recorded Value	Criteria Met?
350	476	YES	35%	31%	NO

While Criteria #1 exceeds the minimum criteria, Criteria #2 falls just short.

Although provincial warrant guidelines were not met, frequent conflicts between pedestrians and vehicles at the intersection are occurring. No collisions involving pedestrians have been officially reported at the intersection, but multiple site investigations by City staff confirm that conflicts or "near misses" between vehicles and pedestrians is a common occurrence during peak travel periods. The high risk of pedestrian collisions at the intersection can be attributed to its proximity to St. Julia Billiard Catholic Elementary School. Observations confirmed that drivers and pedestrians are challenged with being able to discern when it is safe to enter the intersection due to the amount of activity occurring, resulting in poor decisions and slow responsiveness to hazardous situations. Further evidence of this is three right-angle vehicular collisions that have occurred at the intersection between 2010 & 2013.

The provision of an all-way stop at the intersection will regulate traffic control at the intersection by requiring all vehicles to come to a complete stop and also give right-of-way to pedestrians that are crossing. It will also address future traffic growth and associated impacts as a result of ongoing development in the Greensborough community; local traffic patterns and existing growth trends indicate that the intersection will likely meet all-way stop warrant criteria within the next one to two years.

**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 # 14228 (Traffic Operational Improvements). Ongoing maintenance costs for this installation will be considered in the 2015 Operations Department operating budget.

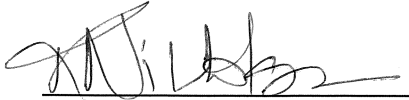
**ALIGNMENT WITH STRATEGIC PRIORITIES:**

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

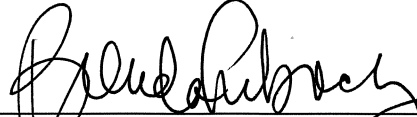
**DEPARTMENTS CONSULTED AND AFFECTED:**

Not applicable.

**RECOMMENDED BY:**



Bob Nicholson,  
Acting Director, Operations



Brenda Librecz,  
Commissioner, Community & Fire Services

**ATTACHMENTS:**

Attachment "A" – Location Map, Hillmount Rd. & Willow Heights Blvd.

Attachment "B" – Location Map, Castlemore Ave. & Swan Park Rd.

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