



P46

February 20, 2014

Mr. Denis Kelly  
Regional Clerk  
Regional Municipality of York  
17250 Yonge St.  
Newmarket, On L3Y 6Z1

**RE: REQUEST FOR TRAFFIC SIGNALS -  
BOX GROVE BYPASS AND  
RIVERWALK DRIVE (5.12)**

Dear Mr. Kelly:

This will confirm that at a meeting held on February 11, 2014, Council of the City of Markham adopted the following resolution:

- “1) That the report entitled “Request for Traffic Signals – Box Grove Bypass & Riverwalk Drive” be received; and,
- 2) That York Region staff be requested to evaluate the intersection to determine if traffic signals are justified, based on York Region’s Traffic Signal Warrant policy and recognizing the needs of pedestrians; and,
- 3) That York Region staff be requested to report back to City Council by April 2, 2014 regarding the results and recommendations; and,
- 4) That the letter dated November 18, 2013 from Ashma Mohamed, be received; and further,
- 5) That Staff be authorized and directed to do all things necessary to give effect to this resolution.”

If you have any questions, please contact David Porretta, Traffic Operations Supervisor, at 905-477-7000 ext. 2040.

Yours sincerely,



Report to: General Committee

Date Report Authored: January 9, 2014

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**SUBJECT:** Request for Traffic Signals - Box Grove Bypass & Riverwalk Drive

**PREPARED BY:** David Porretta, Traffic Operations Supervisor, ext. 2040

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**RECOMMENDATION:**

- 1) That the report entitled “Request for Traffic Signals - Box Grove Bypass & Riverwalk Drive” be received;
- 2) And that York Region staff be requested to evaluate the intersection to determine if traffic signals are justified, based on York Region’s Traffic Signal Warrant policy and recognizing the needs of pedestrians;
- 3) And that York Region staff be requested to report back to City Council regarding the results and recommendations;
- 4) And that Staff be authorized and directed to do all things necessary to give effect to this resolution.

**PURPOSE:**

This report recommends that York Region staff be requested to evaluate the justification for traffic control signals at the intersection of Box Grove Bypass & Riverwalk Drive to improve pedestrian safety.

**BACKGROUND:**

The intersection of Box Grove Bypass & Riverwalk Drive is located in southeast Markham, in the Box Grove community (see Attachment “A”). The intersection is under the jurisdiction of the Region of York and is not currently signalized. Right-of-way is assigned to Box Grove Bypass, which is an arterial road with a posted speed limit of 60 km/h. The roadway has a six-lane cross-section at the intersection (four “through” lanes and two turning lanes). Riverwalk Drive is a minor collector road and is stop controlled with a posted speed limit of 40 km/h. David Suzuki Public School is located 330 metres to the west of the intersection.

Operations staff and the local Ward Councillor’s office have received multiple concerns from residents and administrative staff at David Suzuki Public School regarding pedestrian safety at the subject intersection. There are a number of pedestrians, including students, walking to school that cross Box Grove Bypass unassisted due to the lack of traffic control measures at the intersection to facilitate a safe pedestrian crossing.

**OPTIONS/ DISCUSSION:**

**A supervised school crossing is not recommended**

The City of Markham’s adult school crossing guard program provides supervision at designated school crossings where technical warrant criteria are met. As per section 176 of the Highway Traffic Act, a supervised school crossing cannot be implemented on a roadway with a posted speed limit in excess of 60 km/h. While Box Grove Bypass does

have a 60 km/h speed limit, actual vehicle speeds may be higher. Also, the six-lane cross-section at the intersection would be challenging for a school crossing guard to safely assist with pedestrian crossings while ensuring that traffic approaching the intersection can come to a safe stop. Therefore, a supervised school crossing is not recommended.

**Traffic signals do not meet justification warrants outlined in the Ontario Traffic Manual**

To implement traffic control signals at an intersection, the necessary justification warrants must be met as outlined by the Ontario Traffic Manual (OTM), Book 12. The justification warrants are as follows:

- 1) Minimum Vehicular Volume;
- 2) Delay to Cross Traffic;
- 3) Accident Experience.

Traffic signals are justified when one of the three criteria are met 100%. Alternatively, a traffic signal is justified if two criteria are justified 80% or more. The Region conducted a warrant analysis on September 18, 2013 at the intersection, with the results noted below:

<b>WARRANT 1 Minimum Vehicular Volume</b>	<b>WARRANT 2 Delay to Cross Traffic</b>	<b>WARRANT 3 Accident Experience</b>
<b>68%</b>	<b>54%</b>	<b>0%</b>

Results conclude that a traffic signal at Box Grove Bypass & Riverwalk Drive does not meet the minimum warrant criteria outlined in the OTM.

**York Region Traffic Signal policy does provide alternative criteria to warrant a traffic signal**

As outlined in the Region’s traffic signal policy (Attachment “B”), there are alternative warrants that may be used to justify a new traffic signal:

- 1. Installation of unwarranted traffic signals paid by local municipalities. Applicable only if Warrant 1 and Warrant 2 outlined the OTM are satisfied by at least 70%. All installation costs and annual operating costs of a new traffic signal would be incurred by the local municipality. When the traffic signal becomes warranted, the Region will reimburse the local municipalities 100% of the original installation cost. Because Warrants 1 and 2 are not 70% satisfied, this warrant cannot be considered.
- 2. Safety Warrant. Analysis of existing safety performance functions (SPFs) of an unsignalized intersection and compared to a projected safety performance, if traffic signals were installed.

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3. Peak-hour delays for vehicles entering the “major” street from the “side” street.  
Analyses of the total traffic delay on the minor street approaching the intersection, with consideration being given to the total peak-hour traffic volume at the intersection.

Given that the intersection does not meet technical warrant criteria outlined in the Ontario Traffic Manual, Operations staff recommends that York Region staff be requested to re-evaluate the subject intersection, utilizing the alternative criteria as outlined in their Traffic Signal policy, while recognizing the needs of pedestrians.

**FINANCIAL CONSIDERATIONS:**

Not applicable.

**ALIGNMENT WITH STRATEGIC PRIORITIES:**

This report aligns with the community safety component of the transportation/transit strategic priority. If a traffic signal is provided, pedestrian safety will be improved and may assist with active transportation initiatives at David Suzuki Public School.

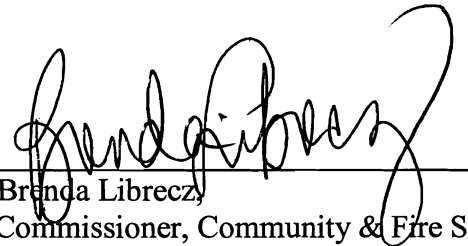
**BUSINESS UNITS CONSULTED AND AFFECTED:**

Not applicable.

**RECOMMENDED BY:**



Paul Ingham,  
Director, Operations

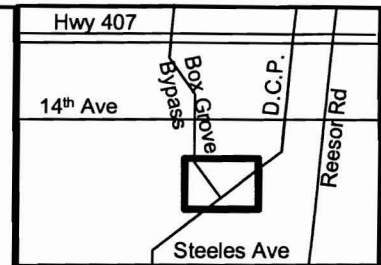
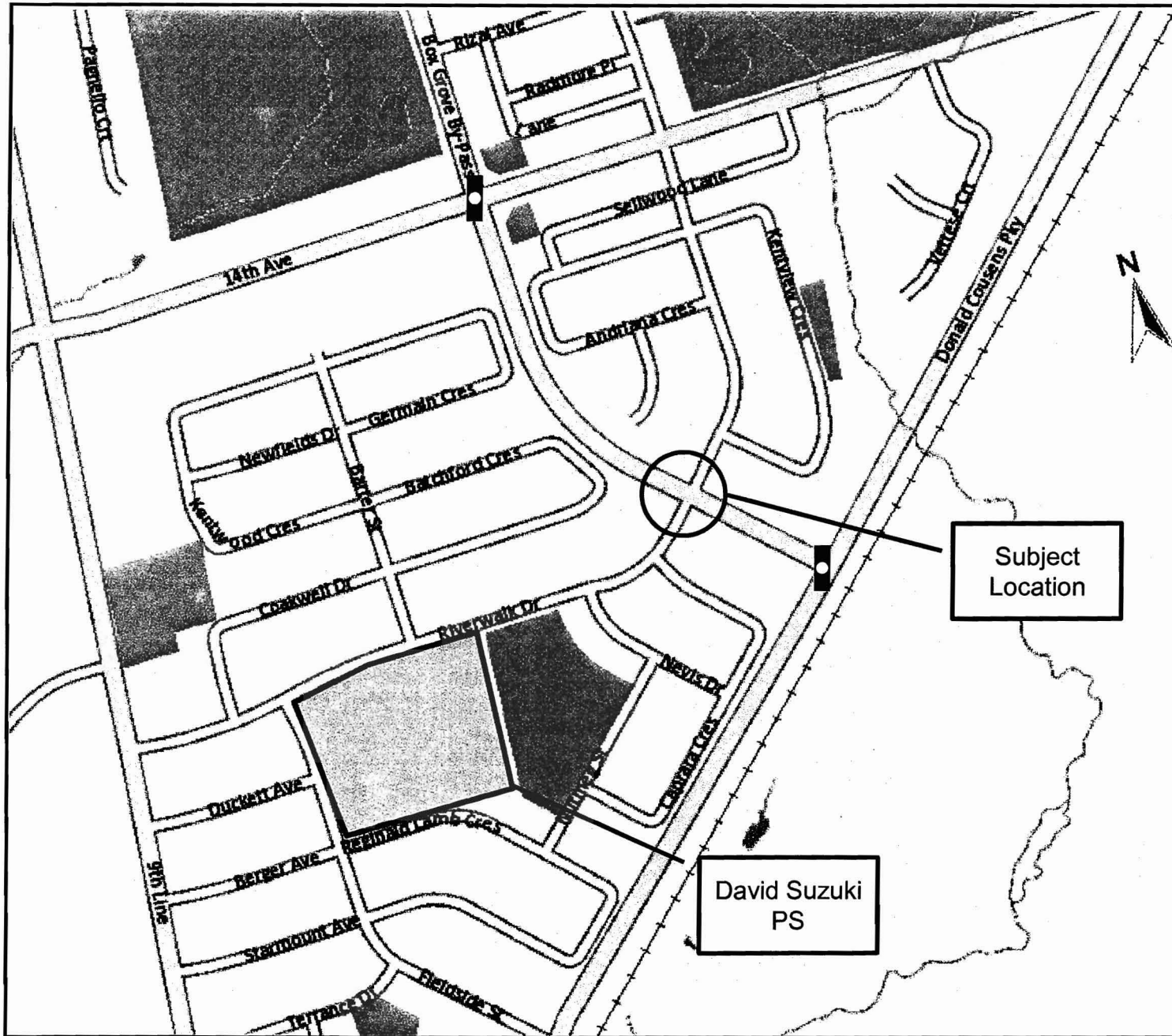


Brenda Libreczy  
Commissioner, Community & Fire Services

**ATTACHMENTS:**

Attachment “A” – Location Map

Attachment “B” – York Region Traffic Signal Warrant policy



**KEY MAP**

**LEGEND**

-  Existing Traffic Signals

**Box Grove Bypass @  
Riverwalk Drive**  
**Proposed Traffic Signals**



Operations Dept.  
January 2014

**ATTACHMENT A**



STATUS	Final
Council Approved	Y
CAO Approved:	Y

<b>TITLE: Traffic Signal Warrants</b>	<b>Edocs No.: 32922</b> <b>Original Approval Date: October 17, 2002</b> <b>Policy Last Updated: December 18, 2008</b> <b>Posted on Intranet: April 21, 2010</b>
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**POLICY STATEMENT:**

The Traffic Signal Warrant policy is a policy providing a warrant process for the installation of traffic signals at locations along The Regional Municipality of York road network.

**APPLICATION:**

The Traffic Signal Warrant policy will be used by all Regional Employees, in particular Transportation and Works Employees who are involved in determining the locations for the installation of traffic signals along the Regional road network.

**PURPOSE:**

This policy is meant to provide a credible, technically sound and consistent method of determining warranted locations for the installation of traffic signals on Regional roads.

**DESCRIPTION:**

Traffic signals alternate the right-of-way between conflicting streams of vehicular traffic, or vehicular traffic and pedestrians crossing a roadway, with maximum efficiency and safety. Maximum efficiency implies the minimum delay to traffic. Safety requires that the traffic signals operate at the minimum hazard to vehicles and pedestrians.

The following warrants are to be used to determine whether or not traffic signals are justified at a location.

- 1. Traffic Control Signal Warrants as Outlined in Book 12 of the Ontario Traffic Manual**

**ATTACHMENT B**

These warrants are currently used within The Regional Municipality of York. They are comprised of the following:

Warrant 1 – Minimum Vehicle Volumes

Warrant 2 - Delay To Cross Traffic

Warrant 3 – Collision Experience

If any one warrant is satisfied by 100% or if any two warrants are satisfied by 80% or more, the installation of traffic signals is considered to be justified.

## **2. Safety Warrant**

The safety warrant is an analysis based upon the safety performance of an intersection, compared to other intersections with similar characteristics. These characteristics are summarized into safety performance functions (SPFs). In simple terms, the existing safety performance of an unsignalized intersection can be determined and then compared to a projected safety performance, if traffic signals were installed.

If the rate of equivalent collisions is substantially lower with the installation traffic control signals than as an unsignalized intersection, then the installation of traffic control signals is considered to be justified.

## **3. “T” Type Intersections Warrant**

The threshold volumes for side street traffic shall not be increased by 50% when evaluating "T" type intersections because the side street traffic still faces the same traffic flows on the major street.

## **4. Peak Hour Delay For Entering onto the Major Street from the Side Street**

A Peak Hour Delay warrant is met when:

- The total delay experienced by the traffic on one minor-street approach (one direction only) controlled by a stop sign equals or exceeds four vehicle-hours for a one lane approach and five vehicle-hours for a two lane approach; and
- The volume on the same minor street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and
- The total entering volume during the hour equals or exceeds 800 vehicles per hour for intersections with four or more approaches or 650 vehicles per hour for intersections with three approaches.

**5. Installation of Unwarranted Traffic Signals Paid by Local Municipalities**

Area municipalities shall be permitted to pay for the installation of unwarranted traffic signals subject to a number of conditions being met.

- The Transportation and Works Department have no technical objections to the installation of traffic signals at the location requested.
- Warrant 1 and Warrant 2 are satisfied by at least 70%.
- All installation costs are incurred by the local municipality. Installation costs are estimated at \$120,000 per location, permanent installation, \$60,000, temporary installation.
- All on-going maintenance costs are incurred by the local municipality, until such time as the traffic signals become warranted. On-going maintenance costs are estimated at \$4,000 per location/annually. Actual costs will be charged to the municipality.
- When the traffic signal becomes warranted, the Region will reimburse the local municipalities 100% of the original installation cost of permanent signals. Temporary installation will be done in areas where road improvements are planned within five years. For temporary installation, the Region will reimburse the local municipality, the value of the material that is recoverable.

**RESPONSIBILITIES:**

**Transportation and Works Department:**

- The Transportation and Works Department shall assess the need for the installation of traffic signals on the Regional Road system.

**Area Municipalities:**

- The Area Municipalities, in consultation with Regional staff, shall aid in the assessment of the need to install traffic signals.

**REFERENCES:**

Report 10(7), Transportation and Works Committee, adopted by Council December 18, 2008



**CONTACT:**

Director of Roads Transportation, Transportation and Works Department

**APPROVAL INFORMATION**

<b>CAO Approval Date:</b>	September 20, 2002		
<b>Committee:</b> Transportation and Works	<b>Clause:</b> 8	<b>Report No:</b> 9	
<b>Council Approval:</b>	<b>Minute No.</b> 156	<b>Page:</b>	<b>Date:</b> October 17, 2002

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