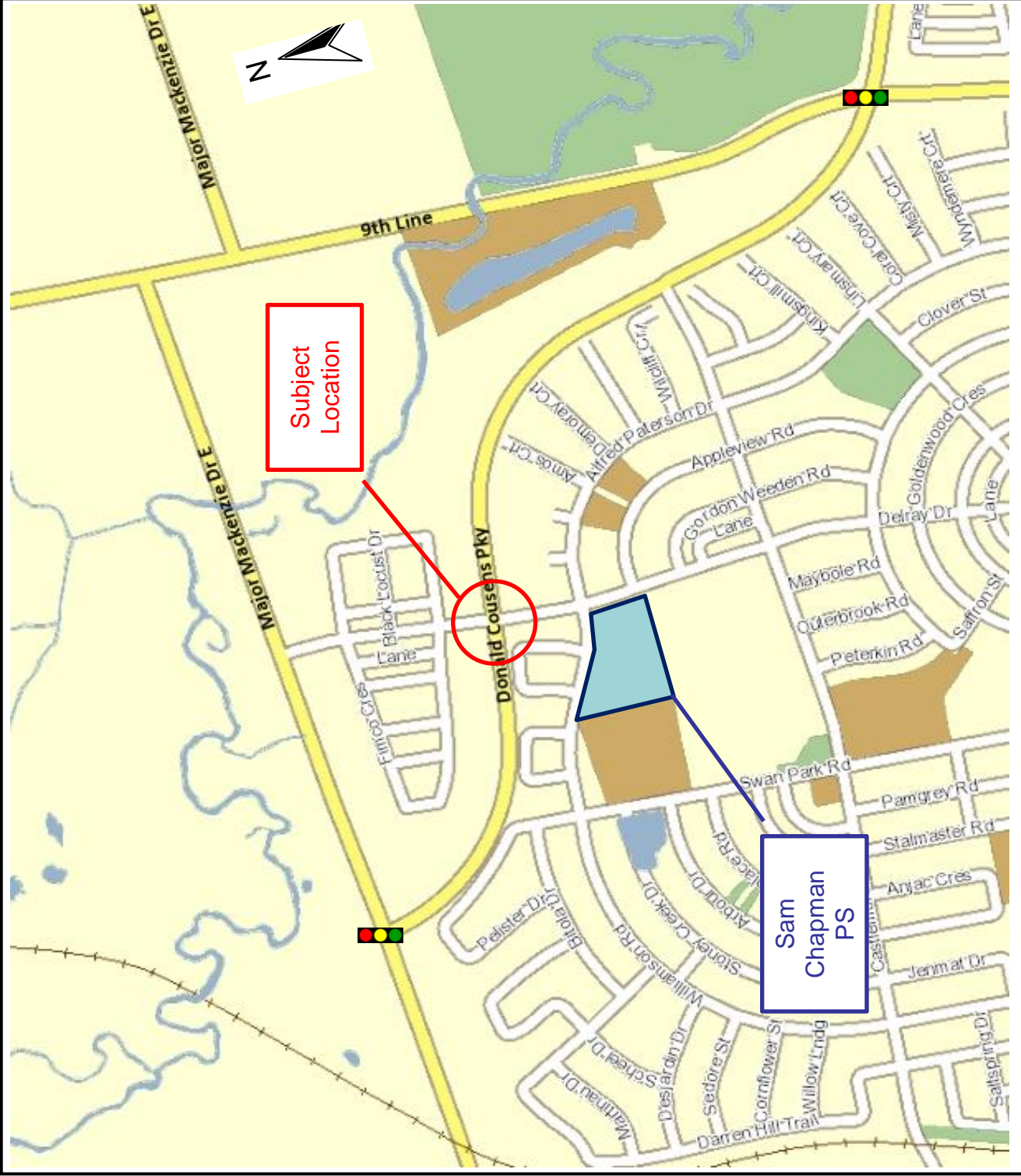


LEGEND
Existing Traffic Signals

Donald Cousens Pky & Delray Dr
Proposed Traffic Signals

MARKHAM
Operations Dept.
January 2014

ATTACHMENT A





STATUS	Final
Council Approved	Y
CAO Approved:	Y

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

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

CAO Approval Date: September 20, 2002

Committee: Transportation and Works

Clause: 8

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Minute No. 156 **Page:** **Date:** October 17, 2002

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