Appendix "B"

POLICY MANUAL

POLICY NUMBER:	**PUBLIC WORKS-009**
SUBJECT:	ALL-WAY STOP CONTROL - WARRANTS

POLICY STATEMENT: (Purpose/Objective)

To provide warrants and guidelines for the installation of All-way Stop control in the municipality.

RELATED POLICY PROCEDURES/GUIDELINES:

Ontario Traffic Manual Book 5 - Regulatory Signs, published by the Ministry of Transportation of Ontario.

All-Way Stop Controls may be considered:

- As an interim measure, where traffic control signals are warranted but cannot be implemented immediately;
- At locations having insufficient sight distance and/or a high collision frequency where less restrictive measures (i.e. tree trimming or parking control) have been tried and found to be inadequate or impractical;
- Local/Collector/Rural Arterial intersections having a collision frequency of three (3) collisions per year over a three (3) year period and only those collisions susceptible to correction through all-way stop control will be considered (i.e. right angle and turning type collisions);
- Urban Arterial intersections having a collision frequency of four (4) collisions per year over a three (3) year period (only right angle and turning type collisions are considered);

- As a means of providing a transition period to accustom drivers to a change in intersection right-of-way control from one direction to another. Installation under this warrant will be for a period not to exceed three (3) months;
- On roadways where a following volume warrant condition is met;

All-Way Stop Minimum Volume Warrants

On Urban Arterial Roads, the following volume warrant may be used:

- The total vehicle volume on all intersection approaches exceeds 500 vehicles per hour for each of any eight hours of the day; and
- The combined vehicular and pedestrian volume on the minor street exceeds 200 units per hour (all vehicles plus pedestrians wishing to enter the intersection) for each of the same eight hours as the total volume; or the combined vehicular and pedestrian volume on the minor street exceeds 150 units per hour (all vehicles plus pedestrians wishing to enter the intersection), for each of the same eight hours as the total volume, with an average delay to all minor street traffic (vehicles or pedestrians) of greater than 30 seconds for the entire eight hour period; and
- The volume split does not exceed 70/30 (that is the minor street must not be less than 30% of the total volume entering the intersection) as measured over the entire eight-hour count period. Volume on the major street is defined as vehicles only. Volume on the minor street includes all vehicles plus any pedestrians wishing to cross the major roadway. For three-legged intersections a volume split of 75/25 is permissible.

On Collector Road and Rural Arterial Roads, the following volume warrant may be used:

- The total vehicle volume on all intersection approaches exceeds 375 vehicles per hour for each of any eight hours of the day; and
- The combined vehicular and pedestrian volume on the minor street exceeds 150 units per hour (all vehicles plus pedestrians wishing to enter the intersection) for each of the same eight hours as the total volume; or the combined vehicular and pedestrian volume on the minor street exceeds 120 units per hour (all vehicles plus pedestrians wishing to enter the intersection), for each of the same eight hours as the total volume, with an average delay to all minor street traffic (vehicles or pedestrians) of greater than 30 seconds for the entire eight hour period; and
- The volume split does not exceed 70/30 (that is the minor street must not be less than 30% of the total volume entering the intersection) as measured over the entire eight-hour count period. Volume on the major street is defined as vehicles only. Volume on the minor street includes all vehicles plus any pedestrians wishing to cross the major roadway. For three-legged intersections a volume split of 75/25 is permissible.

On Local Roads, the following volume warrant may be used:

- The total vehicle volume on all intersection approaches exceeds 200 vehicles per hour for each of any four (4) hours of the day; and
- The combined vehicular and pedestrian volume on the minor street exceeds 75 units per hour (all vehicles plus pedestrians wishing to enter the intersection) for each of the same four hours as the total volume;
- The volume split does not exceed 70/30 (that is the minor street must not be less than 30% of the total volume entering the intersection) as measured over the entire eight-hour count period. Volume on the major street is defined as vehicles only. Volume on the minor street includes all vehicles plus any pedestrians wishing to cross the major roadway. For three-legged intersections a volume split of 75/25 is permissible.

Inappropriate Use of All-Way Stop Control

All-way stop controls should not be used under the following conditions:

- Where the protection of pedestrians, school children in particular, is a prime concern and the concern cannot be directly addressed by other means;
- On roads within urban areas having a posted speed limit in excess of 60 km/h;
- At intersections that are not roundabouts having fewer than three (3) or more than four (4), approaches;
- At intersections that are offset, poorly defined or geometrically substandard;
- On truck or public transit routes, except in an industrial area or where two (2) such routes cross;
- On multi-lane approaches where a parked or stopped vehicle on the right will obscure the stop sign;
- Where traffic would be required to stop on grades;
- As a means of deterring the movement of through traffic in a residential area;
- Where visibility of the sign is hampered by curves or grades, and a safe stopping distance does not exist; or.
- Where any other traffic device controlling right-of-way is permanently in place within 250 metres, with the exception of a “Yield” sign. If required closer than 250 metres, all-way stop control should be supported by a traffic operations study and sound engineering judgement.

All-way stop controls must not be used under the following conditions:

- As a speed control device (or a traffic calming tool); and
- On roads where progressive signal timing exists.

Physical Installation of Signs for All-Way Stop Controls

After City Council approval has been received for the installation of All-way Stop Controls, the procedure for field installation shall be as follows:

- "New" signs and "Stop Ahead" signs to be installed on intersection approaches with new "Stop" signs for a period of two (2) months;
- All "Stop" signs are to have the "All-way" tab sign and red/white reflective accessory panel (RAP) installed below them;
- All approaches to be painted with a stop bar. Crosswalks to be painted on approaches where pedestrian facilities exist and where sidewalk connection(s) will be constructed as part of the all-way stop control installation;
- After the two (2) month period, the "New" and "Stop Ahead" signs may be removed. If in the opinion of staff that the "Stop Ahead" signs should remain, then they are authorized to remain.

Request for All-Way Stop Control

Upon receipt of a request from the public for consideration of all-way stop control, staff will:

- Conduct an intersection turning movement count;
- Review intersection, turning movement count, and collision history to determine if all-way stop is warranted;
- If all-way stop is warranted, the General Manager of Public Works or their designate is delegated to approve all-way stop control and present the by-law to amend Traffic by-law 37-83 Schedule "1" pertaining to "Through Highways" to City Council for approval;
- If all-way stop is not warranted, staff will provide results of the warrant study to the requester and/or Ward Councillors.

Alternative Solutions to All-Way Stop Controls at Intersections

It is recognized that in certain situations, an alternative may not exist to unwarranted all-way stop control at an intersection. However, Public Works staff shall consider and comment upon reduction in posted speed limit, the installation of warning signage, or Pedestrian Crossover (PXO) when recommending against the installation of all-way stop control at an intersection.

Negative Impacts of Unwarranted All-Way Stop Control

Observations have revealed that the introduction of unwarranted all-way stop controls often results in the following:

- Poor Stop Sign Compliance - motorists familiar with the intersection will not come to a complete stop, instead, reduce their travel speed, and accelerate through the intersection when no opposing traffic is observed.

- False Sense of Security – disregard for the “Stop” signs may decrease safety. Pedestrians may be lured in to the false sense of security by the presence of a “Stop” sign by assuming motorists will stop.

- Collisions – all-way stop control can increase the number of rear-end and fixed object collisions, especially if there is a high volume of traffic being required to stop unnecessarily.

- Speeding - the unnecessary delay from a stop sign results in motorists increasing their travel speed between intersections to make up for the perceived time lost.

- Emergency Response - response time for emergency services vehicles will be negatively impacted because they are required to come to a complete stop at all stop signs as per the Highway Traffic Act.

- Noise and Air Pollution – residents living nearest to the intersection will experience an increase in traffic noise from vehicles stopping and accelerating (braking noise and engine noise). Stopping and accelerating also increases environmental emissions and fuel consumption.

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Date of Next Review:	Applicable Legislation/Legislative Authority: