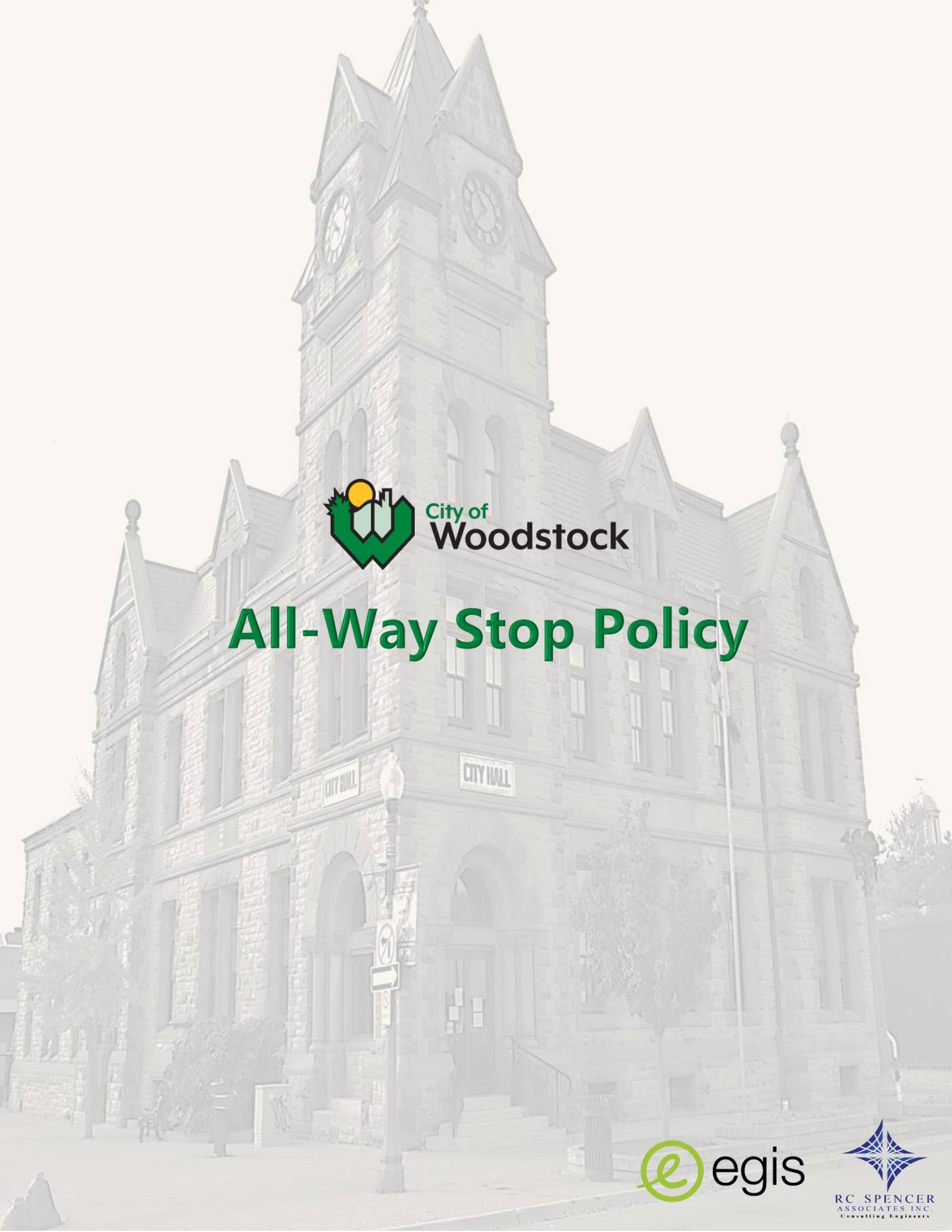
Appendix J – All-Way Stop Control Policy



City of Woodstock

All-Way Stop Policy

egis

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Table of Content

1.0 Introduction

The primary aim of implementing all-way stop control is to ensure fair access to the right-of-way for similar volumes of traffic traveling in opposing directions. Furthermore, according to provincial regulations, it is emphasized that an all-way stop control should not be relied upon to manage or reduce vehicle speeds.

This policy follows the Ministry of Transportation of Ontario (MTO) Ontario Traffic Manual (OTM) Book 5 – Regulatory Signs which states, all-way stops should only be considered under the following situations:

- As an interim measure where traffic signals are warranted but cannot be installed immediately.
- At locations having a high collision frequency and less intrusive measures have not resulted in decreased collision frequencies.
- As a transitionary period to accustom drivers to a change in right-of-way (ROW).

All-way stops within the City of Woodstock (the City) road network should be installed when specific criteria are fulfilled and upon approval by the City Council. This policy outlines the criteria for determining the necessity of all-way stop control and describes the public process in cases where the technical criteria is not met.

2.0 Approval Process of All-Way Stop

The approval process from request to implementation is provided in **Figure 1.** Requests for an all-way stop are referred to City staff. Upon receipt of a request from the public or Council for consideration of all-way stop control, staff will first undertake a technical review to determine if the request is warranted. If the technical review process is satisfied, a Council-approved by-law amendment is required before installation.

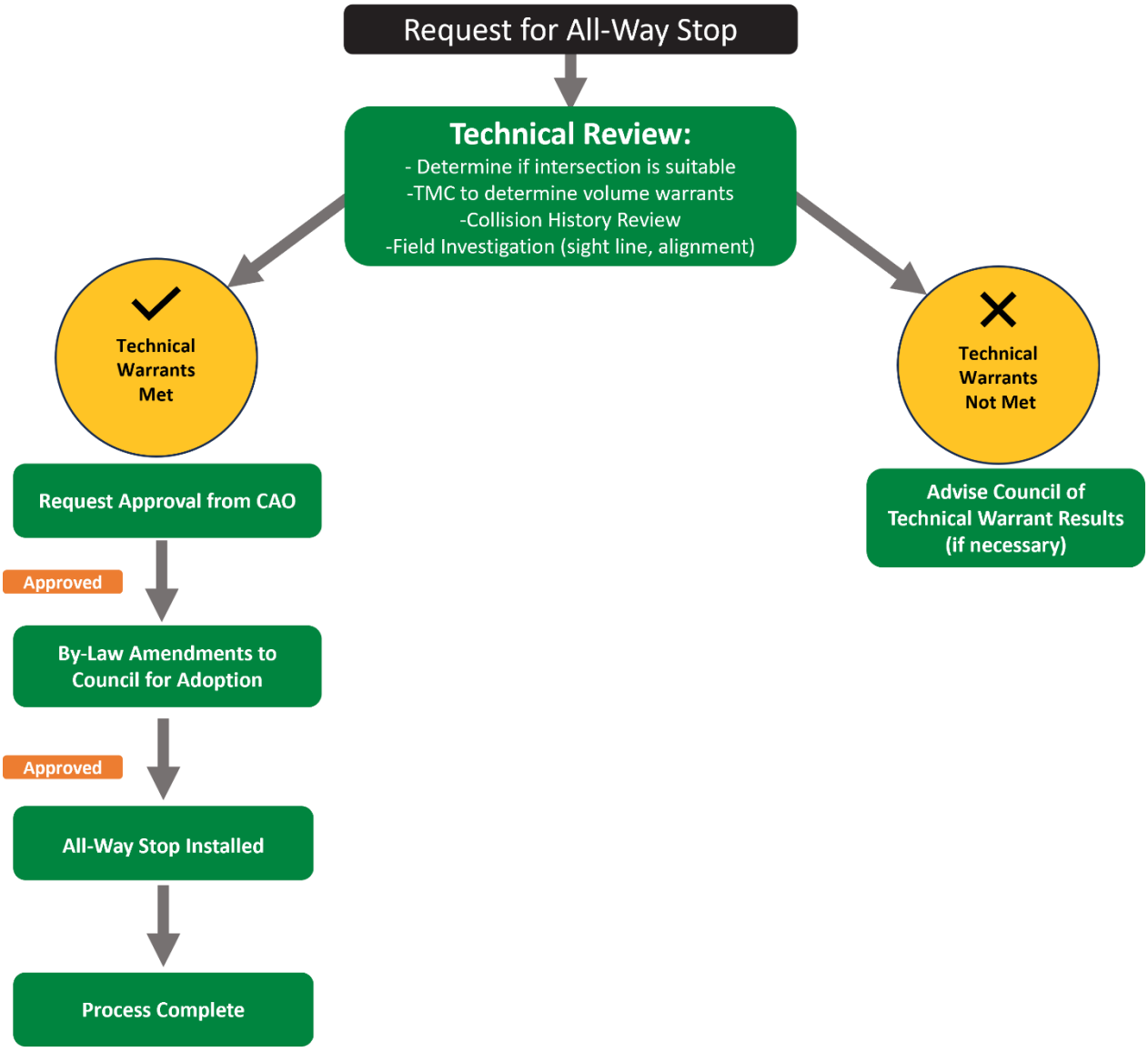

Figure 1 All-Way Stop Process Flow Chart

3.0 Technical Review Process

3.1 All-Way Stop Control Conditions

The first step of the technical review process is to identify the feasibility of all-way stop control at the subject site. OTM Book 5 identifies conditions in which all-way stop control should or must not be used. The following considerations must be made prior to advancing the technical review process:

All-way stops must not be installed solely:

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

All-way stops 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 of 60 km/h or more.
- At intersection that are not roundabouts having fewer than three or more than 4 approaches.
- At intersections that are offset, poorly defined, or geometrically substandard.
- On truck or bus routes except in an industrial area or where two 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 reduced by curves or grades, and sufficient safe stopping distance does not exist.
- Where any other traffic device controlling right-of-way is permanently in place within 250 m with the exception of a YIELD sign. If required closer than 250 m, all-way stop control should be supported by a traffic operations study and sound engineering judgement.

3.2 Warrant Criteria

Once it is determined that no conditions exist which would exclude the usage of all-way stop control, warrants must be completed as described in OTM Book 5. **Table 1** summarizes the warrant criteria for different road classifications. As illustrated, there are three general warrants based on collision history, traffic and pedestrian volumes and visibility or sight distances. If any one of the warrants are satisfied, then all-way stop control may be warranted. The following subsections provide additional clarity relating to the warrant assessments.

Table 1 Warrant Criteria Summary

Warrants		Urban Arterial Roads	Collector Roads and Rural Arterial Roads	Local Roads
A	Collision History (3 Years)	4 / Year	3 / Year	3 / Year
B	Total Vehicle Volume on All Intersection Approaches	> 500 vph	> 375 vph	>200 vph
	Vehicle + Pedestrian Volume on Minor Street	> 200 per hour	> 120 per hour	> 75 per hour
	Percentage of Traffic on Major Road	< 70% (4-leg intersection) < 75% (3-leg intersection)		
C	Visibility	*See Section 3.5		

3.3 Warrant A – Collision History

All-way stop control may be warranted on roadways which are experiencing an unusually high number of 'right-angle' or 'turning' collisions. The following thresholds are used to determine if an all-way stop control is warranted based on collision frequency:

- Local/Collector/Rural Arterial: If the collision rate is in excess of three collision per year averaged over the last three years of collision data (i.e., 9 collisions in 36 months).
- Urban Arterial: If the collision rate is in excess of four collisions per year averaged over the last three years of collision data (i.e., 12 collisions in 36 months).

For the purposes of the collision warrant, only those collision types susceptible to improvement through all-way stop control (right-angle or turning) should be considered.

3.4 Warrant B – Volume of Traffic

The criteria for determining the need for an all-way stop based on traffic and pedestrian volumes are described as follows:

Urban Arterials

- **Condition 1:** The total vehicle volume on all intersection approaches exceeds 500 vehicles per hour (vph) for each of any eight hours of the day.

- **Condition 2:** 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, with an average delay to traffic on the minor street (either vehicles or pedestrians wishing to enter the intersection) of greater than 30 seconds.
- **Condition 3:** The volume split does not exceed 70/30. 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.

Collector Roads and Rural Arterials

- **Condition 1:** The total vehicle volume on all intersection approaches exceeds 375 vph for each of any eight hours of the day.
- **Condition 2:** 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, with an average delay to traffic on the minor street (either vehicles or pedestrians wishing to enter the intersection) of greater than 30 seconds.
- **Condition 3:** The volume split does not exceed 70/30. 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.

Local Roads

- **Condition 1:** The total vehicle volume on all intersection approaches exceeds 375 vph for each of any eight hours of the day.
- **Condition 2:** 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, with an average delay to traffic on the minor street (either vehicles or pedestrians wishing to enter the intersection) of greater than 30 seconds.
- **Condition 3:** The volume split does not exceed 70/30. 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.

Warrant B can be considered met if all three conditions are met for the respective road classification.

3.5 Warrant C – Visibility

If it is determined that an intersection has insufficient sight distance for traffic exiting the existing stop-controlled approaches and all efforts to improve sight distance have been exhausted, conversion to all-way stop control may be considered. The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads should be referred to when determining if sight distances meet minimum standards.

4.0 Physical Installation of All-Way Stop Controls

After council approval has been received and the by-law amendments adopted, the procedure for installation of a new all-way stop control shall be as follows:

- Install STOP AHEAD (Wb-1) signs NEW signs (Wb-3) at the proper location in advance of the intersection on the newly controlled approaches.
- New STOP (Ra-1) signs should be installed on the newly controlled approaches with ALL-WAY (Ra-1t) tabs installed on all STOP signs. STOP signs must be installed on the right side of the roadway facing traffic, no closer than 1.5 m and no further than 15 m from the edge of the intersecting roadway.
- On paved roadways, STOP signs should be supplemented with appropriate pavement markings, prescribed in OTM Book 11 – Pavement, Hazard, and Delineation Markings). At a minimum all approaches should be painted with a stop bar and crosswalks where pedestrian facilities exist.
- After a two-month period, the NEW and STOP AHEAD signs may be removed. If in the opinion of staff that the NEW and STOP AHEAD signs should remain, then they are authorized to remain.