

Subject: Intersection All-Way Stop Review (Various Locations)

Department: Infrastructure Services

Division: Transportation and Development

Report #: INS-2022-049

Meeting Date: 2022-08-08

Recommendations

That report INS-2022-049, Intersection All-Way Stop Review (Various Locations) be received;

And that a bylaw be presented to implement an all-way stop at the intersection of College Avenue and Fieldgate Drive;

And that a bylaw be presented to implement an all-way stop at the intersection of Spencer Avenue and Cornwall Gate/Abbey Road;

And that Staff update the All-Way Stop Policy to reflect the current criteria as set out in Book 5 of the Ontario Traffic Manual (OTM) dated December 2021.

Background

At its Meeting of May 16, 2022, Council directed Staff to consider an all-way stop at the intersection of College Avenue and Fieldgate Drive. In addition to reviewing this intersection, Staff were requested to review all-way stops at the following intersections:

- Spencer Avenue/Cornwall Gate/Abbey Road and/or Spencer Avenue/Sherwood Street
- Alder Street/Glengarry Road or Alder Street/Sherwood Street
- Meadow Drive/Pheasant Drive/Passmore Avenue

Some of these intersections have been the subject of review in the past. There is a policy for processing requests for stop controls at intersections within the Town of Orangeville, *Town of Orangeville, Policy Regarding Placement of New All Way Stop*

Controls, Resolution Number 9.3.4, approved by Council in June of 1998. The Corporate Policy is found as Attachment No. 1. The process requires traffic counts to determine traffic volumes and turning patterns through the intersection. The traffic count data is then evaluated to determine intersection warrants and all way stop controls. Warrants are set out in Book 5 of the Ontario Traffic Manual.

Where the intersections had previously been reviewed, Council required Staff to re-examine the warrants to ensure public safety concerns are being satisfactorily addressed and to provide Council with further technical information to assist in the decision-making process to implement all-way stops at the identified intersections.

Warrants and Justifications

The warrants for an all-way stops are determined from Book 5 of the Ontario Traffic Manual (OTM). The latest version was released in December 2021. The newly released version contains updated warrants and justifications, including warrants for urban arterial roads, collector roads, rural arterial roads and local roads. To aid Council, Staff has provided a summary table that identifies the warrants/justifications for local roads (column 1), the data collected (column 2) and whether the criteria, when compared to Book 5 of the OTM, meets the required warrants for an all-way stop (column 3). Table 1 sets out the justification results specifically for the intersection at College Avenue and Fieldgate Drive.

Table No. 1 – Warrant/Justification All-Way Stop Summary (College & Fieldgate)

OTM Warrant/Justification (Local Road)	Data Collected/Analyzed	Warranted/Justified
Total vehicle volume exceeds 200 vehicles for the highest hour recorded	233 vehicles recorded for highest hour	Meets warrant
Volume Split does not exceed 70/30 as measured over the entire eight-hour count, vehicles only	85/15 split	Not met
High accident frequency (right angle collisions averaging at least 4 collisions/year)	Zero accidents reported at this location	Not met
Where visibility is hampered by curves or grades and insufficient for safe stopping distance for	Available Sight Distance is 110 metres	met

speed limit 65/85 metres (posted/designed)		
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All-way stop controls can be applied inappropriately. Accordingly, the Ontario Traffic Manual recommends warrants to be followed to help ensure that they are used where appropriate and in a consistent manner across the province. In reviewing and applying the warrants and justifications for all-way stop controls, Staff have recognized and applied the following in formulating the recommendations set out in this report:

- all-way stops should not be used solely for the protection of pedestrians. Typically, these are addressed through other means, like PXO's;
- All way stops should not be used as a speed control device, for roads within urban areas having posted speed limits in excess of 60 km/h, or at intersections that are offset, poorly defined or geometrically substandard.
- Stop sign usage should be limited to control right-of-way conflicts.

Based on the data collected placing an all-way stop at College Avenue and Fieldgate Drive meets the warrants for the total vehicle volumes count. The volume split warrant is not met. However, it is acknowledged that the traffic volumes and patterns in this area will change when College is opened to the west and as development in that area continues. Given this, Staff would recommend that an all-way stop be implemented at College Avenue and Fieldgate Drive due to the total volume of vehicles justification and anticipated growth in both traffic and pedestrian volumes.

Meadow Drive/Pheasant Drive/Passmore Avenue Intersections

For the purpose of determining whether an all-way stop was warranted at the Meadow Drive at Pheasant Drive/Passmore Avenue intersections, traffic counts were undertaken on June 22, 2022. The counts and analytical results are found in Triton Engineering's Intersection Analysis Report dated June 24th, 2022, Attachment No. 2. Similarly, all-way stop justifications and warrants for these local streets are determined from Book 5 of the OTM. For a local road, the warrants are as follows:

- 200 vehicles per hour for each of any four hours in a day;
- Combined vehicular and pedestrian volume on the minor street wishing to enter the intersection exceeding 75 units per hour for the same four hours; and
- A volume split that does not exceed 70/30 as measured over the entire eight hour count, with the major street volume only including vehicles and the minor street volume including vehicles and pedestrians wishing to cross the major street (for a three-legged intersection, a 75/25 split is permissible)

The highest hourly volume recorded was 58 vehicles from 4:00 pm to 5:00 pm for Pheasant Drive/Passmore, which is not close to the 200 vehicle per hour minimum. The highest combined vehicular and pedestrian volume on the minor street was 84 vehicles and pedestrians from 3:00 pm to 4:00 pm. This was the only hour that the

volume exceeded 75. The split during the eight-hour count was 46/54. The intersection traffic volumes do not meet the minimum volumes for any single hour and the minor street vehicle and pedestrian volumes do not exceed 75 units for all four highest counted hours, therefore an all way stop at either of these intersections is not warranted.

Spencer Avenue/Abbey-Cornwall Gate or Spencer Avenue/Sherwood Street

Spencer Avenue was fully constructed and connected to Riddell Road in 2016. Shortly thereafter in November of 2017, a formal request for an all-way stop at Spencer Avenue & Abbey/Cornwall Gate or at Spencer Avenue and Sherwood Street was made by a local resident. Four-hour traffic volume counts were collected and based on the analysis in 2017, warrants and justifications for stop signs were not met. Staff notified the resident and Council of the results, with no further action on the matter to be undertaken.

As per Resolution 2022-191, Council directed Staff to re-exam the warrants for Spencer Avenue. Spencer Avenue is a minor collector road. Abbey Road, Cornwall Gate and Sherwood are considered as local roads. For a collector road, the warrants are as set out in Table No. 2 below, along with what justifications have been met.

Table No. 2 – Warrant/Justification All-Way Stop Summary (Spencer & Abbey Rd.)

OTM Warrant/Justification (Collector Road)	Data Collected/Analyzed	Warranted/Justified
Total vehicle volume exceeds 375 vehicles for the highest hour recorded	456 vehicles recorded for highest hour	Meets warrant
Volume Split does not exceed 70/30 as measured over the entire eight-hour count, vehicles only	86/13 split	Not met
High accident frequency (right angle collisions averaging at least 4 collisions/year)	Zero accidents reported at this location	Not met
Where visibility is hampered by curves or grades and insufficient for safe stopping distance for speed limit 65/85 metres (posted/designed)	Available Sight Distance is 100 metres	met

Based on a re-examination of the traffic and pedestrian data and in light of the new warrants contained in Book 5, justification for an all-way stop at the intersection of Spencer Avenue and Abbey Road/Cornwall Gate can be made. Therefore, Staff are recommending an all-way stop at Spencer Avenue and Abbey Road/Cornwall Gate be implemented.

Alder Street/Glengarry Road or Alder Street/Sherwood Street

For determining whether an all-way stop at the intersections noted above are warranted, a traffic count was undertaken on June 21, 2022. The results of the pedestrian and vehicle movements can be found in Triton Engineering Services Limited's letter report, dated June 24th, 2021, Attachment No. 3. In addition, Sherwood Street based on historical data and a higher average annual daily traffic (AADT) count is busier intersection than Alder Street & Glengarry Road. Therefore only the Alder Street and Sherwood Street intersection was tested for warrants and the justification for an all-way stop control. Alder Street is considered to be a minor collector and as such the warrants for the implementation of an all-way stop are as follows:

- 375 vehicles per hour for each of any eight hours in a day;
- Combining vehicular and pedestrian volume on the minor street (Sherwood) wishing to enter the intersection exceeding 150 units per hour for the same eight hours, or combined vehicular and pedestrian volume on the minor street wishing to enter the intersection exceeding 120 units per hour for the same eight hours with an average delay to all minor street traffic of 30 sec or more; and,
- A volume split that does not exceed 70/30 as measured over the entire eight-hour count, with the major street volume only including vehicles and the minor street volume including vehicles and pedestrians wishing to cross the major street (for a three-legged intersection, a 75/25 split is permissible).

None of the criteria set out above for the collector road (Alder Street) are met and as such an all-way stop control on Alder Street at either Glengarry Road or Sherwood Street is not warranted.

Strategic Alignment

Orangeville Forward – Strategic Plan

Priority Area: Municipal Services

Objective: Respectful of Cost and Impact to Community

Sustainable Neighbourhood Action Plan

Theme: Transportation System

Strategy: Promote more sustainable and efficient transportation options

Notice Provisions

At its meeting on November 23, 2021, Council passed a resolution to adopt the International Association for Public Participation (IAP2) materials to guide direct municipal communication on matters of public interest. Attachment No. 2 to this report is the IAP2 Public Participation Spectrum that describes different levels of public involvement in the decision-making process. There are five different levels of public participation ranging from “Inform”, which involved no consultation but simply informs the public of a decision that has been made, to “Empower”, which places the ultimate decision-making power in the hands of the public.

Staff suggest that the appropriate level of public participation on this issue is to Inform. If Council would like additional public involvement to assist in the decision making process, staff suggest that Council could defer consideration of the above recommendations and direct staff to solicit public input. A subsequent report would then come back to Council summarizing the input received to assist Council in reaching a final decision.

If, however, Council is satisfied that the installation of all-way stops at College Avenue/Fieldgate Drive and Spencer Avenue/Abbey Road is an issue of safety and consistency that only requires the Inform level of public participation, the above recommendations could be approved now.

Financial Impact

The cost to install the proposed all-way stop controls at College Avenue and Fieldgate Drive and Spencer Avenue and Abbey Road/Cornwall Gate would be undertaken as part of the 2022 Operating Budget. As such there is no financial impact from this report.

Respectfully submitted

Gary Kocialek,
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Reviewed by

R. John Lackey, P. Eng., Manager
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Division

Attachment(s):

1. Corporate Policy, New All Way Stop Controls
2. Intersection Analysis Report – Pheasant Drive/Passmore Avenue
3. Intersection Analysis Report – Alder Street/Sherwood Street