



ROADS, PARKS AND FLEET DEPARTMENT MEMORANDUM

TO: MAYOR J. LEHMAN, AND MEMBERS OF COUNCIL

FROM: D. FRIARY, DIRECTOR OF ROADS, PARKS AND FLEET

NOTED: A. MILLER, RPP
GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH MANAGEMENT

M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RE: ALL-WAY STOP INVESTIGATION FOR MADELAINE DRIVE AND COUNTRY LANE

DATE: DECEMBER 2, 2019

The purpose of this Memorandum is in response to the request for an All-Way Stop investigation from City Council on September 9, 2019 regarding motion 19-G-242 "That staff in the Roads Parks and Fleet Department investigate the feasibility of installing an all-way stop at the intersection of Madelaine Drive and Country Lane and report back to General Committee." Currently, the stop control requires vehicles travelling along Country Lane (Minor Street) to stop at Madelaine Drive (Major Street) please refer to Appendix "A" for a map of the study area.

Staff have investigated the intersection of Madelaine Drive and Country Lane to determine if an all-way stop is warranted based on criteria within the Ontario Traffic Manual (OTM) Book 5 – Regulatory Signs.

The Ontario Traffic Manual (OTM) warrant is based on volume, collision history, and stopping sight distance at the intersection. There are two (2) classes of Minimum Volume Warrants identified in the OTM; each class is based on the classifications of roadways; Minor Roadways (Local Roadways) and Major Roadways (Collector and Arterial Roadways). A road classification is determined by using the City of Barrie Official Plan, Schedule "D" – Road Plan.

Based on the classification of Madelaine Drive, as a Major Collector Roadway, the Major Roadway Minimum Volume Warrant was used. Each component of the all-way stop warrant has the ability to satisfy the warrant independently.

- **Volume** - For an all-way stop to be warranted the total vehicle volume on all intersection approaches must exceed 500 vehicles per hour for each of any eight hours of the day with a volume split that does not exceed 70/30.
- **Collision History** – For the purpose of the collision warrant there must be a high collision frequency which is an average of four collisions per year over a three-year period, only those collision susceptible to relief through all-way stop control are taken into consideration (i.e. right angle and turning type collisions) and which are reported to Barrie Police Service.
- **Stopping Sight Distance** – The distance required for a driver to see ahead in order to stop if necessary. An all-way stop requires a stopping sight distance less than 105m to be warranted. Each component of the All-Way Stop Warrant has the ability to satisfy the warrant independently.



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A traffic count was completed on October 3, 2019 for the purpose of completing an all-way stop warrant. The results of the investigation are summarized below:

<u>Description</u>	All-Way Warrant	Recorded Data	Satisfied All-Way Warrant	
			Yes	No
Part 1a – Total Volume Hourly Traffic Volume ⁽¹⁾	Greater than 500 vehicles per hour ⁽²⁾	456 vehicles in the peak hour ⁽³⁾		
Part 1b – Volume Split Percentage of Traffic on Country Lane (Minor Street)	Greater than 200 vehicles and pedestrians in the per hour – Greater than 30% ⁽²⁾	93 vehicles (20%) in the peak hour		X
Part 2 – Collisions Intersection Collision History	Average 4 per year over 3 years	5 collisions over a 3 year period		X
Part 3 – Visibility Stopping Sight Distance from Country Lane	Less than 65m	No restrictions		X

(1) *Peak Hour Volume is the maximum number of vehicles that pass through the intersection during a one hour period.*

(2) *1a & 1b must both be satisfied to warrant an All-Way stop.*

(3) *Over the 8 hour count, the average hourly traffic volume is 365 vehicles.*

An All-Way Stop Survey was prepared and mailed to 30 property owners on Madelaine Drive, Country Lane and surrounding area. Results of the All-Way Stop Survey are as follows:

Madelaine Drive and Country Lane Street All-Way Stop Survey	Response Received	Percentage of Responses
Option A - Leave as is (traffic along Country Lane stops at Madelaine Drive)	4	45%
Option B – Install an All-Way Stop at Madelaine Drive and Country Lane.	5	55%
TOTAL (Out of 30)	9	30%

Residents, have expressed concerns regarding vehicles speeding in the vicinity of Madelaine Drive and Country Lane. Staff considered this concern however, do not support the installation of an all-way stop for this purpose. The application of right of way control should not be used for the intended purpose of slowing down vehicles.

The Ontario Traffic Manual Book 5 – Regulatory Signs states:

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. This concern can usually be addressed by other means; and
- As a speed control device.



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Historically, Staff have implemented radar speed boards in Ward 9 to display motorist's speeds and to gather data at specific locations. Generally, this results in a slight drop in motorist's speed. Staff will put Madelaine Drive and Country Lane in consideration for a radar speed board in 2020.

Staff have analysed the data from the intersection count report. Warrants from the Ontario Traffic Manual Book 5 were not met. Volume in the peak hour did not reach 500 vehicles as well every hour during the count, the volume split was 80/20, and in the past three years there were not enough collisions to support the implementation of an all-way stop.

Sight Lines at the intersection of Madelaine Drive and Country lane did not pose a concern with Staff. There were no geometric issues as both streets are straight and cross perpendicularly. There is also no foliage or physical features that would obstruct the view of the driver of oncoming traffic.

Unwarranted all-way stops create operational and safety concerns for both pedestrians and vehicles entering the intersection. The unwarranted all-way stop makes drivers feel the stop is unnecessary and motorists do not comply with the stop control, as there is little to infrequent side street traffic encountered. This also creates a disregard for other traffic control devices because drivers soon learn to ignore the stop control device, as they feel the signs are not required.

Staff do not support the implementation of an unwarranted all-way stop. There have been numerous engineering studies that show the implementation of unwarranted all-way stops result in an increase in aggressive driving. Motorists do not feel they are required to stop since they do not encounter vehicles on the side street. Studies also indicate there is usually an increase in vehicles speeds as drivers attempt to make up for lost time at the stop location.

Staff have reviewed the intersection of Madelaine Drive and Country Lane for the installation of an all-way stop. Based on the results of the investigation, the installation of an all-way stop at this intersection does not satisfy the warrants identified in the Ontario Traffic Manual (OTM) at this time.

In accordance with the Council approved All-Way Stop Policy a memorandum is provided to advise of the results of an investigation when the Ontario Traffic Manual (OTM) warrants have not been satisfied.

Appendix "A"

