
TO: GENERAL COMMITTEE

SUBJECT: BRIAR ROAD/WOODCREST ROAD AND GREENFIELD AVENUE
STOP SIGN REVERSAL REVIEW

WARD: 8

PREPARED BY AND KEY CONTACT: J. MACDONALD, C.E.T.
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SUBMITTED BY: C. MORTON, C.E.T., PMP.
DIRECTOR OF ROADS, PARKS AND FLEET (ACTING)

GENERAL MANAGER APPROVAL: D. FRIARY
GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH
MANAGEMENT (ACTING)

CHIEF ADMINISTRATIVE OFFICER APPROVAL: M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That Traffic By-law 80-138, Schedule "M", "Through Highways and Through Streets" be amended by adding the following:

<u>"Briar Road</u>	South side of Greenfield Avenue"
<u>"Woodcrest Road</u>	North side of Greenfield Avenue"
2. That Traffic By-law 80-138, Schedule "M", "Through Highways and Through Streets" be amended by deleting the following:

<u>"Greenfield Avenue</u>	West side of Briar Road"
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PURPOSE & BACKGROUND

3. Staff in the Roads, Parks and Fleet Department received direction from the Ward Councillor to investigate the feasibility of reversing the current stop control on Greenfield Avenue at Briar Road/Woodcrest Road. Currently, Greenfield Avenue stops at Briar Road/Woodcrest Road.
4. Briar Road/Woodcrest Road is a two (2) lane local roadway with a pavement width of 8.5 metres with a sidewalk on the west side south of Greenfield Avenue, and a daily traffic volume of approximately 200 vehicles per day. Please refer to Appendix "A".
5. Greenfield Avenue is a two (2) lane local road with a pavement width of 8.5 metres with a sidewalk on the south side east of Briar Road/Woodcrest Road with a daily traffic volume of approximately 500 vehicles per day. Please refer to Appendix "A".

ANALYSIS

6. A comment sheet was prepared and mailed to fifty four (54) property owners along Briar Road/Woodcrest Road and Greenfield Avenue to provide comments. Eighteen (18) responses were received and of these responses fifteen (15) supported the proposed stop sign reversal.
7. The majority of the responses recommended implementing an All-Way Stop at the intersection Briar Road/Woodcrest Road and Greenfield Avenue. An All-Way stop would need to meet satisfy the minimum provincial warrants for installation.
8. Residents also expressed concerns regarding the need for sidewalks along Greenfield Avenue to access Greenfield Park. Currently the sidewalk along Greenfield Avenue stops at Briar Road/Woodcrest Road.
9. Residents expressed concerns regarding vehicles disregarding the stop control along Greenfield Avenue at Briar Road/Woodcrest Road creating operational and safety concerns.
10. An All-Way Stop is warranted based on criteria within the Ontario Traffic Manual (OTM) Book 5 – Regulatory Signs. The OTM warrant is based on volume, collision history, and stopping sight distance of the intersection.
 - **Volume** - the total number of vehicles entering an intersection during the peak hour as well as the percentage of vehicles on the minor street during the peak hour.
 - **Collision History** - reviews collisions over a three-year period, which are only correctable through All-Way Stop control (i.e. right angle and turning type collisions) and which are reported to the Barrie Police Service.
 - **Stopping Sight Distance** - the distance required for a driver to see ahead in order to stop if necessary. Each component of the All-Way Stop Warrant has the ability to satisfy the warrant independently.
11. A traffic count was completed on June 22, 2017 for the purpose of completing an All-Way Stop warrant. The results of the investigation are summarized below:

Description	All-Way Warrant	Recorded Data	Satisfied All-Way Warrant	
			Yes	No
Part 1a – Total Volume Peak Hour Traffic Volume ⁽¹⁾	Greater than 350 vehicles in peak hour	56 vehicles in the peak hour		
Part 1b – Volume Split Percentage of Traffic on Briar Road/Woodcrest Road (Minor Street)	Greater than 35%	17 vehicles (30%)		X
Part 2a – Collisions Intersection Collision History	Average 4 per year over 3 years	0 collisions over a 3 year period		X
Part 2b – Visibility Stopping Sight Distance from Briar Road/Woodcrest Road	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.*

12. Staff have reviewed the intersection of Briar Road/Woodcrest Road and Greenfield Avenue for the installation of an All-Way Stop. Based on the results of the investigation, the installation of an All-Way Stop is not recommended as minimum warrants are not satisfied.
13. Staff did review the volume of the intersection of Briar Road/Woodcrest Road and Greenfield Avenue to determine the directional split of vehicles to improve traffic operations. The results of the investigation are as follows:
 - a) Briar Road/Woodcrest Road – 205 vehicles per day (free flow – no stop control);
 - b) Greenfield Avenue – 460 vehicles per day (stop control).
14. Staff reviewed the collision history of Briar Road/Woodcrest Road and Greenfield Avenue and found two reported collisions that would not be corrected by an All-Way stop installation:
 - a) A vehicle turning off of Briar Road onto Greenfield Avenue slid on ice into a vehicle stopped at Greenfield Avenue;
 - b) A rear end collision occurred between two (2) vehicles travelling westbound.
15. Staff did not find any trends related to the collision history review and determined these collisions would not be correctable by the implementation of an All-Way Stop.
16. Level of Service is a criteria used to evaluate the average control delay (measured in seconds) per vehicle during the peak hour. This is measured using a rating system of Level of Service A (free flow) to a Level of Service E (unstable flows).
17. Staff completed a review of the level of service and overall delay of the intersection of Briar Road/Woodcrest Road and Greenfield Avenue to review the effectiveness of a potential stop sign reversal. The results of the study are as follows:

Stop Control	Level of Service	Delay
Level of Service on Greenfield Avenue based on current stop control - vehicles stop at Briar Road/Woodcrest Road (Current Configuration)	A (AM Peak Hour)	6.2 seconds (AM Peak Hour)
	A (PM Peak Hour)	6.7 seconds (PM Peak Hour)
Level of Service on Greenfield Avenue based on proposed stop control – vehicles stop at Greenfield Avenue - (Proposed configuration)	A (AM Peak Hour)	4.1 seconds (AM Peak Hour)
	A (PM Peak Hour)	3.3 seconds (PM Peak Hour)

18. The review of the stop sign reversal at the intersection of Briar Road/Woodcrest Road and Greenfield Avenue maintained the same level of service, but with the stop control reversed to Briar Road/Woodcrest Road the intersection delay could be reduced by 50% in the PM Peak Hour.
19. As a result of the investigation staff recommend that existing stop control at the intersection of Briar Road/Woodcrest Road and Greenfield Avenue be reversed to improve the operation of the traffic flows at the intersection.

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20. The recommendation to reverse the stop control along Briar Road/Woodcrest Road and Greenfield Avenue is also in accordance with best engineering practices which stipulates the stop control must be for the minor street which is the roadway with a lower traffic volume, which is Briar Road/Woodcrest Road, and the major street would be under free flow (no stop control). The major roadway at this intersection is Greenfield Avenue as it has the higher traffic volume. Based on the current traffic volumes along Briar Road/Woodcrest Road and Greenfield Avenue, the stop control is on the major roadway which is contradictory to best engineering practices.
21. The current stop control along Briar Road/Woodcrest Road and Greenfield Avenue can create a false sense of security for both pedestrians and vehicles entering the intersection as motorists tend to have an increase disregard for the stop control device when there is little to infrequent side street traffic encountered.
22. The proposed stop sign reversal will also address residents' concerns regarding motorists being noncompliant with the current stop control configuration along Briar Road/Woodcrest Road and Greenfield Avenue. Motorists will encounter more frequent traffic along Greenfield Avenue validating the requirement to stop.
23. There has been numerous studies that have shown that the implementation of unwarranted stop signs (which are stop controls in contradiction to best engineering practices) have an increase in aggressive driving. Motorists do not feel they are required to stop since there is not a need for the stop control. Therefore, there is usually an increase in vehicle speeds as drivers attempt to make up for lost time from the stop location.
24. To ensure the safe and efficient operation of the roadway staff recommend that Traffic By-law 80-138, Schedule "M", "Through Highways and Through Streets" be amended
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| <u>"Briar Road"</u> | South side of Greenfield Avenue" |
| <u>"Woodcrest Road"</u> | North side of Greenfield Avenue" |
- And removing the following:
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| <u>"Greenfield Avenue"</u> | West side of Briar Road" |
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25. An introductory period is required to safely carry out the transition from stopping on Greenfield Avenue to stopping on Briar Road/Woodcrest Road. The process is to create an All-Way stop for 30 days at which time the "STOP" signs are to be removed from Greenfield Avenue. Warning signs stating "CROSS TRAFFIC DOES NOT STOP" complete with "NEW" tabs and date of reassignment are to be installed when the "STOP" signs have been installed for Briar Road and removed 60 days after they have been installed.
26. Staff reviewed the sidewalk infill program and noted Greenfield Avenue has been identified for additional sidewalks to be installed, however there is no time line for this installation.
27. Staff reviewed signage along Greenfield Avenue in the vicinity of Greenfield Park and as a result have arranged to have "Child at Play" warning signs installed for both eastbound and westbound directions in advance of the park.

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28. Staff have requested stop sign compliance enforcement from Barrie Police regarding residents' concerns about non-compliance for the current stop control at Briar Road/Woodcrest Road and Greenfield Avenue.
29. Barrie Police Service, Barrie Fire and Emergency Service and Municipal Law Enforcement staff do not oppose the recommended motion.

ENVIRONMENTAL MATTERS

30. There are no environmental matters related to the recommendation.

ALTERNATIVES

31. There are two (2) alternatives available for consideration by General Committee:

Alternative 1 General Committee could decide to leave the current stop control in place on Greenfield Avenue at Briar Road/Woodcrest Road.

This alternative is not recommended as the current stop control along Briar Road/Woodcrest Road and Greenfield Avenue is contradictory to best engineering practises which states the major roadway must be free flow (no stop control) and the minor street is to be under stop control. Based on the current traffic volumes of the intersection, the current stop control is stopping the major street. This creates a false sense of security for both pedestrians and vehicles entering the intersection as motorists tend to have an increased disregard for the stop control device as drivers feel the stop is unwarranted and do not comply with the stop control as there is little to infrequent side street traffic encountered.

Alternative 2 General Committee could decide to implement All-Way Stop control at the intersection of Greenfield Avenue and Briar Road/Woodcrest Road.

This alternative is not recommended as it does not meet Ontario Traffic Manual warrants and with low side street traffic could lead to vehicles not stopping at the stop signs over time.

FINANCIAL

32. The cost to implement the proposed stop sign reversal at Briar Road/Woodcrest Road and Greenfield Avenue is approximately \$500 which can be accommodated in the 2018 Operating Budget.

LINKAGE TO 2014-2018 STRATEGIC PLAN

33. The recommendations included in this Staff Report are specifically related to goals identified in the 2014-2018 Strategic Plan:
- a) Improved Drive Safety;
34. The proposed recommendations will ensure the safe and efficient operation of the roadways by having the appropriate roadway no longer in stop control.

APPENDIX "A"

