Barrie

TO:	**GENERAL COMMITTEE**
SUBJECT:	**ALL-WAY STOP REID DRIVE AND KING STREET**
WARD:	**7**
PREPARED BY AND KEY CONTACT:	**M. KAVECKAS, TRANSPORTATION OPERATIONS TECHNOLOGIST, EXT. 4876**
SUBMITTED BY:	**M. BANFIELD, RPP, DIRECTOR OF DEVELOPMENT SERVICES**
GENERAL MANAGER APPROVAL:	**B. ARANIYASUNDARAN, P.ENG., PMP, GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH MANAGEMENT**
CHIEF ADMINISTRATIVE OFFICER APPROVAL:	**M. PROWSE, CHIEF ADMINISTRATIVE OFFICER**

RECOMMENDED MOTION

1.   That Traffic By-Law 2020-107, Schedule '19', "Providing for the Erection of Stop Signs at Intersections" be amended by adding the following:

> "King Street and Reid Drive   Eastbound and Westbound on King Street. Northbound and Southbound on Reid Drive."

PURPOSE & BACKGROUND

2.   Staff in the Development Services Department have received the request to investigate the feasibility of implementing an All-Way Stop at the northerly intersection of Reid Drive and King Street.

3.   The existing traffic operations at Reid Drive and King Street require vehicles travelling east/west on King Street to stop at Reid Drive. Both roadways are classified as Local Industrial roads. Please refer to Appendix "A" for a map of the study area. As the adjacent road uses are industrial and commercial the intersection experiences several large turning vehicles.

ALL-WAY STOP ANALYSIS

4.   Staff have investigated the intersection of Reid Drive at King Street to determine if an All-Way Stop is warranted based on criteria within the Ontario Traffic Manual (OTM) Book 5 – Regulatory Signs.

5.   The OTM warrant is based on volume, collision history, and stopping sight distance at the intersection. There are two classes of warrants identified in the OTM. Each class is based on the classifications of roadways; Minor Roadways (Locals) and Major Roadways (Collectors and Arterials). Road classification is determined by using the City of Barrie Official Plan, Schedule D – Road Plan.

6.   Based on the classification of Reid Drive and King Street both being local industrial roads, the Minor Roadways warrant is used. Each component of the All-Way Stop Warrant can satisfy the warrant independently.

- **Volume** - The total vehicle volume on all approaches exceeds 350 vehicles for the highest hour recorded in the 8-hour count, and the volume split does not exceed 65/35.

- **Collision History** – Reviews high collision frequency. There must be an average of four collisions per year over a three-year period. Only collisions that are correctable through All-Way Stop control (i.e., right angle and turning type collisions) and reported to the Barrie Police Service are considered for the review.

- **Stopping Sight Distance** - The distance required for a driver to see ahead to stop if necessary.

7.   Turning movement counts over the eight (8) busiest hours of the day were completed at the intersections of Reid Drive and King Street.

8.   The results of the turning movement count for the All-Way Stop analysis are summarized below.

Description	All-Way Warrant	Recorded Data	Satisfied All-Way Warrant	
			Yes	No
Part 1a – Total Volume Hourly Traffic Volume	Greater than 350 vehicles in the peak hour	267 vehicles in the peak hour		
Part 1b – Side Street Volume Volume of Traffic on Reid Drive (Minor Street)	Volume split does not exceed 65/35 at the intersection	99 vehicles on side street (63/37)		X
Part 2 – Collisions Intersection Collision History	Average 4 per year over 3 years	4 collisions total over a 3-year period		X
Part 3 – Visibility Stopping Sight Distance from Reid Drive	Less than 105m	No restrictions		X

9.   Staff have identified through the turning movement count the peak hour of the day was in the PM during 4:45 pm – 5:45 pm. This time period had 267 vehicles entering the intersection. There were 99 vehicles entering northbound and southbound (Reid Drive) and 168 vehicles entering eastbound and westbound (King Street). This gives the intersection a volume split of 63/37 (63% on the major street, 37% on the minor street). This volume split exceeds the warrant's recommendation. However, the total volume from Part 1a is short of triggering this component by 83 vehicles in the peak hour. Therefore, the current traffic volumes do not satisfy the intersection volume warrant for an all-way stop.

10.   Staff investigated the collision history and found there were four correctable collisions in the past 3 years, taken from January 1, 2019, to the current date. Staff also made site visits at the intersection to analyze if vehicles stopped northbound and southbound at the current stop control had sight line restrictions. Staff found that there were no restrictions and motorists had clear vision to proceed into the intersection when safe to do so.

11.   Transportation Planning Staff generate projected traffic volumes for the future build out along Reid Drive and King Street. Two methods where used, ITE trip generate rate and proxy site (Commerce Park subdivision); based on the projected volumes using ITE trip generate rate and the proxy site

(Commerce Park subdivision) it is anticipated that future traffic volumes utilizing the intersection of Reid Drive and King Street will warrant an All-Way Stop in the near future.

12.   Based on the current traffic data and future project volume at the intersection, it is recommended that the following amendments be made to the Traffic By-law.

13.   That Traffic By-Law 2020-107, Schedule '19', "Providing for the Erection of Stop Signs at Intersections" be amended by adding the following:

  "King Street and Reid Drive   Eastbound and Westbound on King Street. Northbound and Southbound on Reid Drive."

14.   In addition to the installation of an All-way Stop the intersection will see enhancements to the existing pavement markings, including painted centre lines and left turning lanes on all approaches.

15.   Barrie Police Service, Barrie Fire and Emergency Service and Municipal Law Enforcement Staff do not oppose to the recommendation.

ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS

16.   There are no environmental and climate change impact matters related to the recommendation.

ALTERNATIVES

17.   The following alternatives are available for consideration by General Committee:

  Alternative #1   General Committee could not install an All-Way Stop at the intersection of Reid Drive and King Street.

  This alternative is not recommended as the intersection will warrant an All-Way Stop based on the projected traffic volumes for the future build out along Reid Drive and King Street.

FINANCIAL

18.   The costs associated with the installation of the All-Way Stop and associated pavement markings are approximately $2,000.00 and can be accommodated with funds from the 2022 Operating budget.

LINKAGE TO 2018–2022 STRATEGIC PLAN

19.   The recommendation(s) included in this Staff Report support the following goals identified in the 2018-2022 Strategic Plan:

  •   Improving the Ability to Get Around Barrie – Create Safer Streets

20.   The recommendation of installing an All-Way Stop at the intersections of Reid Drive and King Street will improve safety and traffic operations for all road users. This recommendation correlates directly with Council's 2018-2022 strategic priorities by creating safer streets.

APPENDIX "A"

Reid Drive and King Street
All-Way Stop Investigation