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**TO:** GENERAL COMMITTEE

**SUBJECT:** INTERSECTION SAFETY INVESTIGATION – ANNE STREET NORTH AND HANMER STREET WEST

**WARD:** 4

**PREPARED BY AND KEY CONTACT:** A. PURCELL, SENIOR TRANSPORTION OPERATIONS TECHNOLOGIST, EXT. 4884

**SUBMITTED BY:** S. ROSE, CET, TSOS, MANAGER OF TRAFFIC AND ROWA SERVICES

**EXECUTIVE DIRECTOR APPROVAL:** M. BANFIELD, RPP, EXECUTIVE DIRECTOR OF DEVELOPMENT SERVICES

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

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**RECOMMENDED MOTION**

1. That Staff Report DEV049-24 concerning Intersection Safety Investigation – Anne Street North and Hanmer Street West, be received for information purposes.

**PURPOSE & BACKGROUND**

Report Overview

2. Staff in Development Services Department received motion 24-G-132 regarding an investigation at the intersection of Anne Street North and Hanmer Street West as follows:  
  
“That staff in the Development Services Department investigate the feasibility of intersection safety improvements at the intersection of Anne Street North and Hanmer Street West and report back to General Committee in the form of a Staff Report.”
3. Within the study area, Anne Street North is a 9 metre wide arterial roadway with one (1) lane of travel in each direction and sidewalks along both sides. The average daily traffic in this area is approximately 5,800 vehicles.
4. Within the study area, Hanmer Street West is an 8.5 metre wide minor collector roadway with one (1) lane of travel in each direction and sidewalks along both sides. The average daily traffic is approximately 900 vehicles. West Bayfield Elementary School is located approximately 400 metres east on Ford Street. Please refer to Appendix “A” for the map of the study area.
5. The Highway Traffic Act (HTA) identifies the rights and responsibilities of pedestrians and motorists at different forms of pedestrian crossings.
  - a) Controlled Crossing – Where vehicles are required to stop or yield to traffic legally in the crossing which includes pedestrians, or

- b) Uncontrolled Crossings – Where pedestrian must wait for a safe gap in traffic sufficient for them to cross the road, prior to entering.
6. Anne Street North in the vicinity of Hanmer Street West has one (1) controlled crossing at the signalized intersection of Anne Street North and Livingstone Street West located approximately 185 metres south of the intersection.

**ANALYSIS**

**Pedestrian Crossing**

7. Staff utilize Ontario Traffic Manual (OTM) Book 15 – Pedestrian Crossing Treatments (PXO) to help provide information and guidance for uniformity treatment in design of traffic control devices across Ontario. The Decision Support Tool – Preliminary Assessment in OTM Book 15 is used to determine whether PXOs are warranted. The Preliminary Assessment provides a flow chart that requires the following criteria to be met for a site to be a candidate for a PXO.
- a) 8-hour pedestrian volume  $\geq 100$  pedestrians with vehicle volume  $\geq 750$  vehicles;
  - b) The site is  $>200\text{m}$  from another traffic control device; and
  - c) Requirement for connectivity or pedestrian desire lines.
8. An 8-hour pedestrian count was completed on June 4, 2024, at Anne Street North and Hanmer Street West for the investigation of a PXO. The results of the investigation are as follows.

<b>Decision Support Tool - Preliminary Assessment (OTM Book 15)</b>			
<b>Requirements</b>		<b>Data</b>	<b>Criteria Met</b>
Pedestrian Volume (8 Hours)	$\geq 100$ Pedestrians	19	✘
Vehicle Volume (8 Hours)	$\geq 750$ Vehicles	3,224	✔
Distance from Traffic Control Device	$>200\text{m}$	185m	✘
Connectivity or Desire Lines	Yes/No	No	✘

9. Staff have analysed the 8-hour pedestrian and vehicle volume on Anne Street North. In the total 8 hours, there were 19 pedestrians crossing east/west on Anne Street North and 3,224 vehicles travelling through the study area. This meets the vehicle volume warrant but does not meet the minimum pedestrian volume warrant.
10. The intersection of Anne Street North and Hanmer Street West is located approximately 400 metres from West Bayfield Elementary School. Of the 19 pedestrians observed crossing Anne Street North, 6 were school aged children. Based on the volume of school aged children and pedestrians in general, the criteria for a pedestrian desire line is not satisfied.
11. The closest controlled crossing, located at Anne Street North and Livingstone Street West is approximately 185 metres south of Anne Street North and Hanmer Street West. This is less than the threshold of 200 metres from the proposed PXO location and could have a negative effect with a possible reduced stopping compliance at the PXO should it be installed.
12. Staff do not recommend installing a PXO at the intersection of Anne Street North and Hanmer Street West as the pedestrian volume at this location does not meet the minimum pedestrian

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volume to warrant a PXO. The installation of a PXO with such low-pedestrian traffic often leads to poor compliance rates. Specifically, the low volume of pedestrians means that the crossing is unlikely to be used frequently, which can result in minimal adherence to its presence and function.

### **All-Way Stop**

13. Staff have investigated the intersection of Anne Street North and Hanmer Street West to determine if an All-Way Stop is warranted based on criteria within the Ontario Traffic Manual (OTM) Book 5 – Regulatory Signs.
14. The OTM warrant is based on volume, collision history, and stopping sight distance at the intersection. There are three classes of warrants identified in the OTM. Each class is based on the classifications of roadways.
  1. Urban Arterial Roads
  2. Collector Roads and Rural Arterial Roads
  3. Local Roads
15. Based on the classification of Anne Street North and Hanmer Street West, the Urban Arterial Roads warrant is used. Below are the components of the warrant. Each can satisfy the warrant independently.

### **Minimum Volume Warrant**

- a) The total vehicle volume on all approaches exceeds 500 vehicles per hour for each of the highest eight hours of the day; and,
- b) The combined vehicle and pedestrian volume on the minor street exceeds 200 units per hour for the same eight hours; and,
- c) The volume split does not exceed 75/25. The minor street must not be less than 25% of the total volume entering the intersection.

**Collision Warrant** - Reviews high collision frequency. Only right angle and turning movement collisions that are reported to Barrie Police Services are considered. The threshold for a high collision frequency for urban arterial roads is four collisions per year over three years (i.e., 12 collisions in 36 months).

**Visibility Warrant** - The distance required for a driver to see ahead to stop if necessary. If all efforts have been exhausted and stopping sight distance cannot be brought up to the guidelines (less than 105m), conversion of the intersection to an all-way stop may be considered.

An eight (8) hour turning movement count was completed on October 23, 2024, for the purpose of completing an All-Way Stop Warrant. The results of the warrant analysis are summarized below:



Description	All-Way Warrant	Recorded Data	Satisfied All-Way Warrant	
			Yes	No
<b>Part 1a – Total Volume</b> Total vehicle volume on all approaches	500 vehicles per hour for each of the highest eight hours of the day.	338 Vehicles (7:00-8:00) 452 Vehicles (8:00-9:00) 289 Vehicles (11:00-12:00) 333 Vehicles (12:00-13:00) 306 Vehicles (13:00-14:00) 509 Vehicles (15:00-16:00) 592 Vehicles (16:00-17:00) 432 Vehicles (17:00-18:00)		
<b>Part 1b – Minor Street Volume</b> Combined vehicle and pedestrian volume on (Minor Street)	200 units per hour wishing to enter the intersection for each of the same 8 hours as the total volume.	74 Units (7:00-8:00) 108 Units (8:00-9:00) 55 Units (11:00-12:00) 57 Units (12:00-13:00) 70 Units (13:00-14:00) 111 Units (15:00-16:00) 100 Units (16:00-17:00) 74 Units (17:00-18:00)		X
<b>Part 1c – Volume Split</b> Volume of Traffic on (Minor Street) (Minor Street must not be less than 30% of the total volume entering the intersection)	Volume split does not exceed 75%/25% at the intersection (Minor Street must not be less than 25% of the total volume entering the intersection). Measured over the entire 8-hour count. Volume on Major Street is vehicles only.	80%/20% Volume Split		
<b>Part 2 – Collision</b> Intersection Collision Frequency	4 collisions per year over three years (*example* 12 collisions in 36 months)	2 reported collisions over a 3-year period		X
<b>Part 3 – Visibility</b> Stopping Sight Distance from Minor Street	Less than 105m	No restrictions		X

16. To satisfy Part 1a – Total Volume the hourly combined vehicle volume totals must exceed the 500 combined vehicles per hour for each of the 8 busiest hours. During the study only two (2) time periods satisfied the warrant values.
17. To satisfy Part 1b – Minor Street Volume the combined vehicle and pedestrian volume on the minor street must total 200. The minimum volume of 200 vehicles and pedestrians on the minor street was not met during the 8-hour study period.
18. To satisfy Part 1c – Volume Split the volume of traffic on the minor street must not be less than 25% of the total volume entering the intersection. During the study period, only 20% of traffic was recorded on the minor street which does not meet the warranty requirements.
19. Staff have performed 8-hour turning movement counts at this intersection three times in the past 12 months with similar results.

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20. The intersection's collision history was reviewed with two (2) reported collisions at the intersection in the past three years that would be correctable with an all-way stop. This does not satisfy the Urban Arterial Roads All-Way Stop warrant.
  21. Staff reviewed the stopping sight distance for vehicles on Hanmer Street West. When stopped at the stop sign on Hanmer Street West and proceeding to the projected curb of Anne Street North, staff found that there were no sight restrictions.
  22. Based on the analysis of vehicular volume, collision history and stopping sight distance all fail to satisfy the warrant requirements at this time. Staff do not recommend the installation of an all-way stop at the intersection of Anne Street North and Hanmer Street West. Implementing an unwarranted all-way stop could result in low compliance and pose operational and safety concerns for both pedestrians and motorists.
  23. During the site investigation, staff observed vehicles parking in close proximity to the intersection. Vehicles parking in this location can cause operational and safety concerns for motorists and pedestrians. Staff are moving forward with installing "No Parking Anytime" on the north and south side of Hanmer Street West and the east side of Anne Street North. These parking restrictions will be installed under section 4.2.2 of the Traffic By-Law 2020-107, which states no person shall park within 30 metres of any intersection or any through highway where signs are displayed. No amendment to the Traffic By-law is required as it is under the general provision portion of the by-law. Please refer to Appendix "B" for the map of the proposed "no parking" area.

#### **ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS**

24. There are no environmental and/or climate change impact matters related to the recommendation.

#### **ALTERNATIVES**

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

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**Alternative #1**

General Committee could proceed with installing a PXO at Anne Street North and Hanmer Street West and that an approximate cost of \$150,000 be included in the 2025 Capital Budget.

This alternative is not recommended as the site did not meet minimum pedestrian volume and is in close proximity to one (1) controlled crossings. Installing a PXO at this location could result in low compliance from motorists and potentially result in a dangerous pedestrian crossing.

**Alternative #2**

General Committee could proceed with installing an all-way stop at Anne Street North and Hanmer Street West.

This alternative is not recommended as the site does not meet the minimum criteria warrant set out in Ontario Traffic Manual (OTM) Book 5 – Regulatory Signs. Installing an unwarranted all-way stop can result in low compliance as well as safety and operational concerns.

**FINANCIAL**

26. There are no financial implications for the Corporation resulting from the proposed recommendation.

APPENDIX "A"

Intersection Improvement Study Area



APPENDIX "B"

Proposed 30 metre No Parking Anytime Restrictions

