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**TO:** GENERAL COMMITTEE

**SUBJECT:** PEDESTRIAN CROSSING ANALYSIS – MAPLETON AVENUE AND HURST DRIVE

**WARD:** 6 AND 10

**PREPARED BY AND KEY CONTACT:** M. KAVECKAS, SENIOR TRANSPORTATION OPERATIONS TECHNOLOGIST, EXT. 4876

**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 a pedestrian crossing in the form of a Pedestrian Crossover (PXO) Level 2 Type B is installed at the north leg of Mapleton Avenue and Batteaux Street/Silvercreek Crescent.

**PURPOSE & BACKGROUND**

2. Staff in the Development Services Department have received requests to investigate the feasibility of installing pedestrian crossings on Mapleton Avenue and Batteaux Street/Silvercreek Crescent and on Hurst Drive and Manor Gate and report back to General Committee.
3. Mapleton Avenue, is located in the southwest end of the City of Barrie and is a north/south Major Collector Road. Within the study area, Mapleton Avenue is an 11 metre wide roadway and has one (1) lane of travel in either direction and a two-way centre left turn lane. Sidewalks are located on both sides of the roadway and Barrie Transit stops are within the study area. The Average Annual Daily Traffic on Mapleton Avenue is approximately 5,400 vehicles. On the east side of Mapleton Avenue there is St. Joan of Arc Catholic High School and the Mapleton Plaza complex. On the west side, there is Parkside Townhome complex and Batteaux Park Soccer Field. Please refer to Appendix "A" for a map of the study area.
4. Hurst Drive is located in the south end of the City of Barrie and is a 14 metre east/west Arterial Roadway. Within the study area, Hurst Drive has one (1) travel lane and one (1) bike lane in either direction with a two-way centre left turn lane. Sidewalks are located on both sides of the roadway with Barrie Transit service stops. The Average Annual Daily Traffic through this area on Hurst Drive is approximately 11,600 vehicles. On the north and south side of Hurst Drive there are single family detached homes with driveway accesses. On the south side 170m east of Cox Mill Road, there is the Kingswood Plaza. Please refer to Appendix "B" for a map of the 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. Mapleton Avenue in the vicinity of the study area, has one (1) controlled crossing at the signalized intersection of Mapleton Avenue and Ardagh Road. All other crossings on Mapleton Avenue in this area are considered uncontrolled.
7. Hurst Drive in the vicinity of the study area, has one (1) controlled crossing at the signalized intersection of Hurst Drive and Cox Mill Road. All other crossings on Hurst Drive in this area are considered uncontrolled.

**PEDESTRIAN CROSSOVER ANALYSIS**

8. Staff utilized Ontario Traffic Manual (OTM) Book 15 – Pedestrian Crossing Treatments 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; and
  - b) The site is located  $>200\text{m}$  from another traffic control device or there are requirements for connectivity or pedestrian desire lines.
9. 8-hour pedestrian counts were completed on October 3, 2023, at Mapleton Avenue and on October 17, 2023, at Hurst Drive for the investigation of PXOs. The results and analysis of each location are as follows.

**Mapleton Avenue and Batteaux Street/Silvercreek Crescent**

<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	168	✓
Vehicle Volume (8 Hours)	$\geq 750$ Vehicles	2,963	✓
Distance from Traffic Control Device	$>200\text{m}$	280m	✓
Connectivity or Desire Lines	Yes/No	School/Park	✓

10. Staff have analysed the 8-hour pedestrian and vehicle volume on Mapleton Avenue. In the total 8-hours, there were 168 pedestrians crossing east/west on Mapleton Avenue and 2,963 vehicles travelling through the study area. This exceeds the minimum pedestrian and vehicle volume and allows staff to proceed through the warrant criteria of the Decision Support Tool.

11. The closest controlled crossing, located at Mapleton Avenue and Ardagh Road is approximately 280m north of Mapleton Avenue and Batteaux Street/Silvercreek Crescent. This is greater than the threshold of 200m distance where a proposed PXO would not have a negative effect with the existing traffic control device.
12. The intersection of Mapleton Avenue and Batteaux Street/Silvercreek Crescent is located close to Batteaux Park and St. Joan of Arc Catholic High School. These are two high pedestrian generators where the need for pedestrian connectivity is warranted.
13. All Criteria through the Decision Support Tool – Preliminary Assessment are met where the intersection of Mapleton Avenue and Batteaux Street/Silvercreek Crescent is a suitable site for a PXO.
14. Staff utilized the selection matrix from OTM Book 15 – Pedestrian Crossing Treatments to determine the appropriate variation of pedestrian crossing. Based on vehicle volume, posted speed limit, and roadway cross-section, the recommended treatment for Mapleton Avenue and Batteaux Street/Silvercreek Crescent is a PXO Level 2 Type B. Please refer to Appendix “C”.

Location	Lower Limit 8-Hours	Upper Limit 8-Hours	Posted Speed Limit	Number of Lanes	Recommended Device
Mapleton Avenue and Batteaux Street/Silvercreek Crescent	2250	4500	≤50	3	Level 2 Type B

15. Based on the analysis through the Decision Support Tool – Preliminary Assessment and the selection matrix, staff recommend that a pedestrian crossing in the form of a PXO Level 2 Type B be installed at Mapleton Avenue and Batteaux Street/Silvercreek Crescent.

**Hurst Drive and Manor Gate**

Decision Support Tool - Preliminary Assessment (OTM Book 15)			
Requirements		Data	Criteria Met
Pedestrian Volume (8 Hours)	≥100 Pedestrians	7	<input checked="" type="checkbox"/>
Vehicle Volume (8 Hours)	≥750 Vehicles	6,444	✓
Distance from Traffic Control Device	<200m	330m	✓
Connectivity or Desire Lines	Yes/No	No	<input checked="" type="checkbox"/>

16. Staff have analysed the 8-hour pedestrian and vehicle volume on Hurst Drive. In the total 8-hours, there were 7 pedestrians crossing north/south on Hurst Drive and 6,444 vehicles travelling through the study area. This does not meet the minimum pedestrian volume requirements but does meet the vehicle volume.
17. At the proposed intersection, pedestrian volume crossing Hurst Drive is low (7 pedestrians in 8-hours) and there is no evidence of pedestrian desire lines. Staff do not consider the Kingswood Plaza a requirement for system pedestrian connectivity based on the data.
18. Based on the minimum pedestrian volume requirements not being met and no pedestrian system connectivity required, staff do not recommend a PXO at the intersection of Hurst Drive and Manor Gate as it is not a suitable location for a pedestrian crossing.

19. Barrie Police Service, Barrie Fire and Emergency Service and Municipal Law Enforcement staff do not oppose the recommendation in this report.

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

20. There are no environmental and climate change impacts related to the recommendation.

### **ALTERNATIVES**

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

#### **Alternative #1**

General Committee could choose not to install pedestrian crossing on Mapleton Avenue and Bateaux Street/Silvercreek Crescent. (i.e., Status Quo)

This alternative is not recommended as the site meets minimum pedestrian and vehicle volume and has been identified by staff that there is a need for pedestrian connectivity with St. Joan of Arc Catholic High School, and Batteaux Park Soccer Field located close to the intersection. All parts of the warrant criteria were satisfied for the installation of a pedestrian crossing.

#### **Alternative #2**

General Committee could proceed with installing a pedestrian crossing at Hurst Drive and Mannor Gate.

This alternative is not recommended as the site did not meet minimum pedestrian volume and does require the need for pedestrian connectivity at the intersection. Installing a PXO at this location could result in low compliance from motorists and result in a dangerous pedestrian crossing.

### **FINANCIAL**

22. That the approximate cost of \$150,000 for the design, permitting and construction of the PXO Level 2 Type B at Mapleton Avenue and Bateaux Street/Silvercreek Crescent be included in the 2025 Capital Budget.

### **LINKAGE TO 2022–2026 STRATEGIC PLAN**

23. The recommendation included in this Staff Report supports the following goal identified in the 2022-2026 Strategic Plan:

- Community Safety – Address speeding and aggressive driving to ensure street and pedestrian safety.

The recommendation of installing pedestrian crossing in the form of a PXO Level 2 Type B at the intersection of Mapleton Avenue and Bateaux Street/Silvercreek Crescent will improve safety for pedestrians by providing a controlled crossing where motorists are required to stop by law. This prioritizes Council's goal of creating safer streets.

Attached: Appendix "A" – Pedestrian Crossing Study Area – Mapleton Avenue  
Appendix "B" – Pedestrian Crossing Study Area – Hurst Drive  
Appendix "C" – PXO Level 2 Type B

APPENDIX "A"

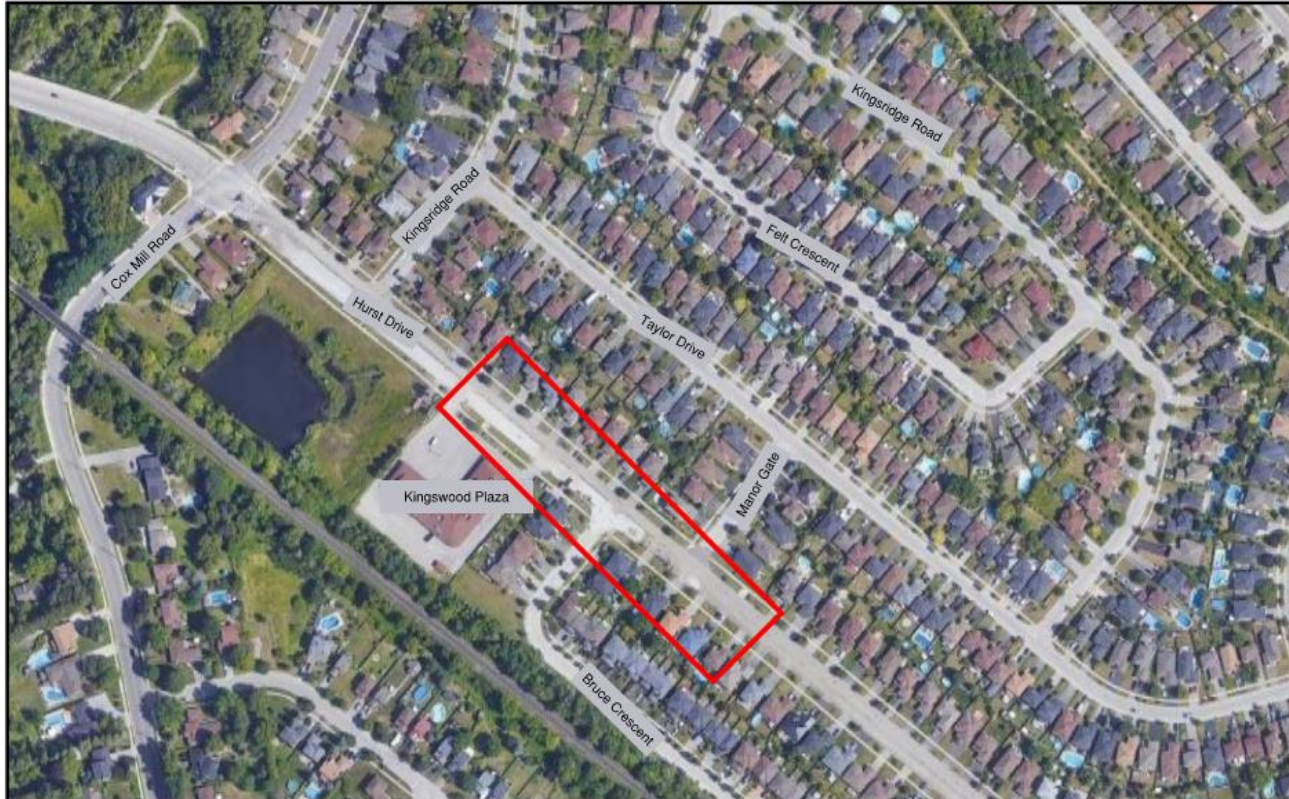
**Pedestrian Crossing Study Area – Mapleton Avenue**



	Pedestrian Crossing Study Area	Ward: 6	
	Mapleton Avenue	Design: MK	
	Study Area	Date: Feb 2024	

APPENDIX "B"

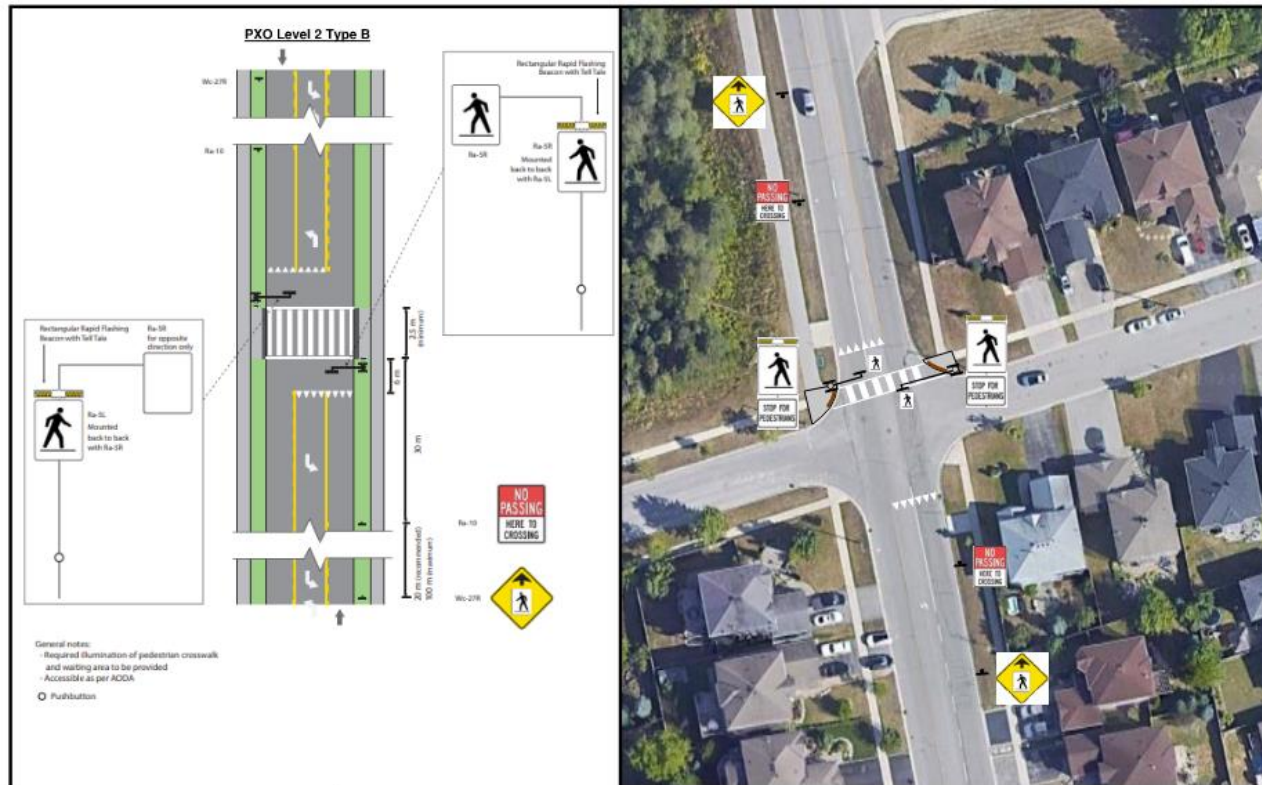
**Pedestrian Crossing Study Area – Hurst Drive**



	Pedestrian Crossing Study Area	Ward: 10	
	Hurst Drive	Design: MK	
	Study Area	Date: Feb 2024	

APPENDIX "C"

PXO Level 2 Type B



	PXO Level 2 Type B	Ward: 6	
	Mapleton Avenue	Design: MK	
		Date: Feb 2024	