

Staff Report



To	General Committee
Subject	W.C. Little Pedestrian Crossing Improvements
Date	September 10, 2025
Ward	7
From	M. Banfield, RPP, Executive Director of Development Services
Executive Member Approval	M. Banfield, RPP, Executive Director of Development Services
CAO Approval	M. Prowse, Chief Administrative Officer
Staff Report #	DEV036-25

Recommendation(s):

1. That a Pedestrian Crossover (PXO) Level 2 Type D be installed on the east leg of Sundew Drive and Violet Street.
2. That a Pedestrian Crossover (PXO) Level 2 Type D be installed on the west leg of Sundew Drive and Holly Meadow Road/Lee Crescent.
3. That a Pedestrian Crossover (PXO) Level 2 Type D be installed on the south leg of Holly Meadow Road and Timothy Lane.
4. That Traffic By-law 2020-107, Schedule '19', "Providing for the erection of stop signs at the intersections" be amended by adding the following:

"Timothy Lane and Butternut Drive Northbound, Southbound on Butternut Drive
and Westbound on Timothy Lane"

Executive Summary:

The purpose of this report is to recommend pedestrian safety and operational improvements in the form of Pedestrian Crossovers (PXO) and an All-Way Stop at various intersections around W.C. Little Elementary School and Bear Creek Park.

Key Findings:

Sundew Drive and Violet Street

The pedestrian volume and vehicle volume warrant a controlled crossing in the form of a PXO Level 2 Type D on the east leg of the intersection. Please refer to Appendix A for a map of the study area and proposed PXO.

Sundew Drive and Holly Meadow Road/Lee Crescent

The pedestrian volume and vehicle volume warrant a controlled crossing in the form of a PXO Level 2 Type D on the west leg of the intersection. Please refer to Appendix B for a map of the study area and proposed PXO.

Holly Meadow Road and Timothy Lane

The pedestrian volume warrants a controlled crossing in the form of a PXO Level 2 Type D on the south leg of the intersection. The vehicle volume was below the threshold. However, given the intersection's location at Bear Creek Park and W.C. Little Elementary School, staff recommend installing the controlled crossing. Please refer to Appendix C for a map of the study area and proposed PXO.

Holly Meadow Road and Timothy Lane

Staff recommend installing an All-Way Stop at this intersection to improve both vehicle and pedestrian safety and to eliminate motorist confusion with the right-of-way. The existing operations at Timothy Lane (Major Street) and Butternut Drive (Minor Street) require vehicles travelling eastbound/westbound on Timothy Lane to Stop at Butternut Drive. Please refer to Appendix D for a map of the study area.

Based on the warrant criteria outlined in the Ontario Traffic Manual (OTM), Book 5 – Regulatory Signs, an All-Way Stop is not technically warranted at the intersection of Timothy Lane and Butternut Drive. However, analysis of the turning movement count data suggests that a change to the current right-of-way should be considered. Existing traffic volumes indicate that the major street, which carries the majority of volume, is currently being stopped, while the minor street has free-flow conditions. Additionally, there is a high number of pedestrians crossing the minor street at the south leg, which is currently an uncontrolled crossing.

Financial Implications:

The estimated cost for installing a PXO Level 2 Type D at the intersections of Sundew Drive and Violet Street, Sundew Drive and Holly Meadow/Lee Crescent, and Holly Meadow Road and Timothy Lane, as well as an All-Way Stop at Timothy Lane and Butternut Drive, is \$15,000 and can be accommodated within the 2025 operating budget.

Alternatives:

The following alternatives are available for consideration by General Committee:

Alternative #1 – General Committee could choose to not install the PXO Level 2 Type D at the studied intersections (i.e. Status Quo).

This alternative is not recommended, as traffic data shows a high number of pedestrians crossing at uncontrolled locations. Staff have identified there is a need for safe pedestrian connectivity to W.C. Little Elementary School and Bear Creek Park.

Alternative #2 – General Committee could maintain the existing stop control at Timothy Lane and Butternut Drive (i.e. Status Quo).

This alternative is not recommended, as the current right-of-way stops the majority of traffic on the major street, which carries the highest volume, while allowing free-flow movement on the minor street. Additionally, staff have concerns about the high volume of pedestrians crossing at an uncontrolled leg of the intersection.

Alternative #3 – General Committee could implement a stop sign reversal, where vehicles travelling northbound/southbound on Butternut Drive would be required to stop, and eastbound/westbound on Timothy Lane would have free-flow traffic.

This alternative is not recommended due to potential safety concerns during a stop sign reversal and the high number of pedestrians accessing W.C. Little Elementary School and Bear Creek Park.

Strategic Plan Alignment:

Affordable Place to Live		
Community Safety	X	It is recommended to implement controlled crossings in the form of PXO Level 2 Type D around W.C. Little Elementary School and Bear Creek Park, and to amend the Traffic By-law to install an All-Way Stop at the intersection of Timothy Lane and Butternut Drive. These measures will clearly assign right-of-way, enhance traffic operations, and improve safety for both motorists and pedestrians, supporting Council's goal of creating safer streets.
Thriving Community		
Infrastructure Investments		
Responsible Governance		

Additional Background Information and Analysis:

PXO Analysis

The Highway Traffic Act (HTA) identifies the rights and responsibilities of pedestrians and motorists at different forms of pedestrian crossings and provides the rules of the road. There are two distinct categories 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 Crossing – where pedestrians must wait for a safe gap in traffic, sufficient for them to cross the road prior to entering.

All locations studied in this report for PXOs are currently uncontrolled crossings.

Staff utilized OTM Book 15 – Pedestrian Crossing Treatments to provide information and guidance for uniformity treatment design of traffic control devices in Ontario. The decision support tool was used to determine whether a PXO is warranted. The following criteria should be met for a site to be a candidate for a PXO.

- a) 8-hour pedestrian volume ≥ 100 pedestrians with a vehicle volume ≥ 750 vehicles; and
- b) The site is located $\geq 200\text{m}$ from another traffic control device or there are requirements for connectivity or pedestrian desire lines.

Sundew Drive and Violet Street

8-hour pedestrian counts were completed as part of the annual traffic count contract at Sundew Drive and Violet Street. The results of the pedestrian volumes are shown in the following chart.

Decision Support Tool - Preliminary Assessment			
Requirements		Data	Criteria Met
Pedestrian Volume (8 Hours)	≥ 100 Pedestrians	118	✓
Vehicle Volume (8 Hours)	≥ 750 Vehicles	1,456	✓
Distance from Traffic Control Device	$> 200\text{m}$	70m	☒
Connectivity or Desire Lines	Yes/No	School/Park	✓

Staff have analyzed the 8-hour pedestrian and vehicle volumes on Sundew Drive. In the total 8-hours, there were 118 pedestrians crossing north/south and 1,456 vehicles travelling east/west through the study area.

The distance from the All-Way Stop at Sundew Drive and Ginger Street is below the warrant criteria (70m). The absence of a sidewalk on the south side of Sundew Drive forces pedestrians travelling north/south on Violet Street to cross at an uncontrolled location. For this reason, staff recommend installing a controlled crossing.

Location	Lower Limit 8-Hours	Upper Limit 8-Hours	Posted Speed Limit	Number of Lanes	Recommended Device
Sundew Drive and Violet Street	750	2,250	≤ 50	2	Level 2 Type D

Sundew Drive and Holly Meadow Road/Lee Crescent

8-Hour pedestrian counts were completed as part of the annual traffic count contract, at Sundew Drive and Holly Meadow Road/Lee Crescent. The results of the pedestrian volumes are shown in the following chart.

Decision Support Tool - Preliminary Assessment			
Requirements		Data	Criteria Met
Pedestrian Volume (8 Hours)	≥ 100 Pedestrians	105	✓
Vehicle Volume (8 Hours)	≥ 750 Vehicles	1,286	✓
Distance from Traffic Control Device	$> 200\text{m}$	67m	☒
Connectivity or Desire Lines	Yes/No	School/Park	✓

Staff have analyzed the 8-hour pedestrian and vehicle volumes on Sundew Drive. In the 8-hours total, there were 105 pedestrians crossing north/south and 1,286 vehicles travelling east/west through the study area.

The distance from the All-Way Stop at Sundew Drive and Ginger Street is below the warrant criteria (67m). The absence of a sidewalk on the south side of Sundew Drive forces pedestrians travelling north/south on Holly Meadow Road/Lee Crescent to cross at an uncontrolled location. For this reason, staff recommend installing a controlled crossing.

Location	Lower Limit 8-Hours	Upper Limit 8-Hours	Posted Speed Limit	Number of Lanes	Recommended Device
Sundew Drive and Holly Meadow Road/Lee Crescent	750	2,250	≤50	2	Level 2 Type D

Holly Meadow Road and Timothy Lane

8-Hour pedestrian counts were completed as part of the annual traffic count contract at Holly Meadow Road and Timothy Lane. The results of the pedestrian volumes are shown in the following chart.

Decision Support Tool - Preliminary Assessment			
Requirements		Data	Criteria Met
Pedestrian Volume (8 Hours)	≥100 Pedestrians	120	✓
Vehicle Volume (8 Hours)	≥750 Vehicles	372	☒
Distance from Traffic Control Device	>200m	170m	☒
Connectivity or Desire Lines	Yes/No	School/Park	✓

Staff have analyzed the 8-hour pedestrian and vehicle volumes on Holly Meadow Road. In the total 8-hours there were 120 pedestrians crossing east/west and 372 vehicles travelling north/south through the study area.

The vehicle volume and the distance from other traffic control devices are below the warrant criteria. However, due to the high pedestrian volume and the south leg of the intersection leading into Bear Creek Park and W.C. Little Elementary School, staff recommend installing a controlled crossing.

Location	Lower Limit 8-Hours	Upper Limit 8-Hours	Posted Speed Limit	Number of Lanes	Recommended Device
Holly Meadow Road and Timothy Lane	750	2,250	≤50	2	Level 2 Type D

All-Way Stop Analysis

Timothy Lane and Butternut Drive

Timothy Lane at Butternut Drive is an 8.5-metre-wide Local Road. There are sidewalks on the south side of Timothy Lane and on the east side of Butternut Drive. The south sidewalk along Timothy Lane provides access from Marsellus Road to Bear Creek Park and W.C. Little Elementary School.

The Average Annual Daily Traffic on Timothy Lane is approximately 670 vehicles.

The OTM warrant is based on volume, collision history, and stopping sight distance at the intersection. There are three classes of warrant identified in the OTM. Each class is based on the classification of roadways:

- Urban Arterial Roads
- Collector Roads and Rural Arterial Roads
- Local Roads

Based on the classification of Local Road on Timothy Lane, the Local Roads warrant is used. Below are the components of the warrant. Each part can satisfy the warrant independently.

1. Minimum Volume Warrant

- a. The total vehicle volume on all approaches exceeds 200 vehicles per hour for each of the highest four hours of the day.
- b. The combined vehicle and pedestrian volume on the minor street exceeds 75 units per hour for the same four hours.
- c. The volume split does not exceed 70/25. The minor street must not be less than 30% of the total volume entering the intersection.

2. 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 local roads is three collisions per year over three years.

3. Visibility Warrant – The distance requested 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 guidelines, conversion of the intersection to an All-Way Stop may be considered.

An 8-hour Turning Movement Count was completed as part of the annual traffic count contract at Timothy Lane and Butternut Drive 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
Part 1a – Total Volume Total vehicle volume on all approaches	Greater than 200 vehicles per hour for each of the highest 4 hours of the day	63 Vehicles (7:00-8:00) 108 Vehicles (8:00-9:00) 77 Vehicles (16:00-17:00) 72 Vehicles (17:00-18:00)		X
Part 1b – Minor Street Volume Combined vehicle and pedestrian volume on (Minor Street)	75 units per hour wishing to enter the intersection for each of the same 4 hours as the total volume	42 Units (7:00-8:00) 53 Units (8:00-9:00) 31 Units (16:00-17:00) 28 Units (17:00-18:00)		
Part 1c – Volume Split Minor Street must not be less than 30% of the total volume entering the intersection	Volume split does not exceed 70%/30% at the intersection (Minor Street must not be less than 30% of the total volume entering the intersection). Measured over the entire 4 hours.	29%/71% Volume Split Traffic stops at Timothy Lane – Which has the higher volume		
Part 2 – Collision Intersection Collision Frequency	3 collisions per year over three years (*example* 9 collisions in 36 months)	0 reported collisions over a 3-year period		X
Part 3 – Visibility Stopping Sight Distance from (Minor Street)	Less than 85m	No restrictions		X

The warrant analysis for installing an All-Way Stop at the intersection of Timothy Lane and Butternut Drive shows no criteria are met. Part 1a, which requires a total vehicle volume of at least 200 vehicles per hour over highest four hours, is not satisfied, with volumes consistently below the threshold. Part 1b is not met, as the minor street volume falls below the required 75 units per hour for the same four hours.

Part 1c, the major street has 71% of the total volume and the minor street has 29%. In a typical intersection scenario, major streets will have free-flow traffic and minor streets will have stop control. Due to the volume split, a stop sign reversal is warranted at this intersection. This would have the right-of-way reassigned from Timothy Lane to Butternut Drive. A stop sign reversal requires the intersection to be converted into an All-Way Stop for a minimum of 30 days prior to reassigning the stop control. This is required so motorists have an adjustment period to the new right-of-way.

Staff are not in support of a stop sign reversal at the intersection of Timothy Lane and Butternut Drive. However, staff propose an All-Way Stop be installed at the intersection. The installation would correct the issue of 71% of the total volume stopping on the major

street which is not typical at intersections. The All-Way Stop would also provide a controlled crossing as there was a high number of pedestrians found crossing the south leg of the intersection.

Part 2, relating to collision history, is not met, as no collisions were reported in the past three years.

Part 3, concerning visibility and stopping sight distances, is not warranted, as there are no sightline restrictions on Timothy Lane or Butternut Drive.

Based on staff analysis of the intersection operations and traffic volumes, it is recommended that an All-Way Stop be installed, despite the warrant criteria not being fully satisfied. The addition of an All-Way Stop would work in conjunction with the proposed new PXO crossings to improve the overall safety and operation in this area around the school and park.

Environmental and Climate Change Impact Matters:

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

Appendix:

Appendix A – PXO Level 2 Type D – Sundew Drive and Violet Street

Appendix B – PXO Level 2 Type D – Sundew Drive and Holly Meadow Road/Lee Crescent

Appendix C – PXO Level 2 Type D – Holly Meadow Road and Timothy Lane

Appendix D – All-Way Stop – Timothy Lane and Butternut Drive

Report Author:

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File #:

Not Applicable

Pending #:

Not Applicable

Appendix A – PXO Level 2 Type D – Sundew Drive and Violet Street



Appendix B – PXO Level 2 Type D – Sundew Drive and Holly Meadow Road/ Lee Crescent



Appendix C – PXO Level 2 Type D – Holly Meadow Road and Timothy Lane



Appendix D – All-Way Stop – Timothy Lane and Butternut Drive

