

## **Pedestrian Crossing Protection - Birchmount Road and Chaldean Street/Glendower Circuit**

**Date:** October 2, 2023

**To:** Scarborough Community Council

**From:** Director, Traffic Management, Transportation Services

**Wards:** Ward 22, Scarborough-Agincourt

### **SUMMARY**

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As the Toronto Transit Commission (TTC) operates a transit service on Birchmount Road, City Council approval of this report is required.

Transportation Services has reviewed the need for pedestrian crossing protection (PXO) at the intersection of Birchmount Road and Chaldean Street/Glendower Circuit. Based on the assessment undertaken, Transportation Services does not recommend the installation of either a PXO or traffic control signals at this intersection as the warrant criteria was not met.

### **RECOMMENDATIONS**

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The Director, Traffic Management, Transportation Services recommends that:

1. City Council not authorize the installation of traffic control signals at Birchmount Road and Chaldean Street/Glendower Circuit.

### **FINANCIAL IMPACT**

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There is no financial impact resulting from the adoption of the recommendation in the report.

If Scarborough Community Council amends the recommendation in this report and authorizes the installation of traffic control signals at the intersection of Birchmount Road and Chaldean Street/Glendower Circuit, the estimated cost is \$250,000.00. Funding would be subject to availability and competing priorities within the Transportation Services 2024 Capital Budget.

## **DECISION HISTORY**

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This report addresses a new initiative.

## **COMMENTS**

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In response to pedestrian crossing concerns, Transportation Services was requested by the Ward Councillor and local residents to investigate the feasibility of installing pedestrian crossing protection at the intersection of Birchmount Road and Chaldean Street/Glendower Circuit.

### **Existing Conditions**

Birchmount Road is characterized by the following conditions:

- It is a five lane, north-south major arterial roadway
- It operates two-way traffic on a pavement width of approximately 14 metres
- The daily two-way traffic volume is approximately 25,000 vehicles
- The speed limit is 50 km/h
- Heavy trucks are permitted at all times
- TTC service is provided by the 17 Birchmount bus
- There are sidewalks located on both sides of the street

Chaldean Street is characterized by the following conditions:

- It is a two-lane, east-west collector roadway
- It operates two-way traffic on a pavement width of approximately 9.2 metres
- The daily two-way traffic volume is approximately 800 vehicles
- The speed limit is 40 km/h
- Heavy trucks are prohibited at all times
- There is no TTC service provided
- There are sidewalks located on both sides of the street

Glendower Circuit is characterized by the following conditions:

- It is a two-lane, east-west collector roadway
- It operates two-way traffic on a pavement width of approximately 9.2 metres
- The daily two-way traffic volume is approximately 1,200 vehicles
- The speed limit is 40 km/h
- Heavy trucks are prohibited at all times
- There is no TTC service provided
- There are sidewalks located on both sides of the street

The intersection of Birchmount Road and Chaldean Street/Glendower Circuit is a four-leg intersection that currently operates with side street stop controls on Chaldean Street and Glendower Circuit.

The adjacent land use in this area is generally comprised of single family residential, with transit stops located at the north-west and south-east corners of the intersection.

The closest adjacent traffic controls are located approximately 325 metres to the south at Huntingwood Drive in the form of traffic control signals, and approximately 425 metres to the north at Timberbank Boulevard/Glendower Circuit in the form of traffic controls signals.

A map of the area is included in Attachment 2.

### **Pedestrian Crossover (PXO)**

To determine whether pedestrian crossing protection is warranted at the intersection of Birchmount Road and Chaldean Street/Glendower Circuit pedestrian data for the intersections was analysed against the justification criteria as outlined in the Ontario Traffic Manual (OTM) Book 12. The OTM justification criteria includes two main factors: the volume of vehicles and pedestrians; and pedestrian delay to cross traffic. Based on the traffic volume on Birchmount Road, the warrants require a minimum of 268 pedestrian crossings over eight hours. Also, based on the pedestrian crossing volume, at least 93 pedestrians must be delayed more than 10 seconds.

Eight-hour pedestrian volume and delay studies were conducted on Birchmount Road at Timberbank Blvd/Glendower Circuit on March 28, 2018. Although the study is several years old, consistency has been noted between turning movement counts undertaken at this intersection in 2018 and 2022, resulting in the count being deemed representative.

Seniors, unassisted children and people with disabilities that are observed crossing are given a higher weighting by a factor of two. The adjusted volume of pedestrians observed crossing was 35; of these, 25 experienced a delay greater than 10 seconds. The compliance level of the study results in relation to the warrant criteria at the two intersections is shown in Table 1 below.

Table 1: Pedestrian Crossover Warrant Criteria and Compliance at Birchmount Road at Chaldean Street/ Glendower Circuit

<b>Criteria</b>	<b>Compliance</b>
Pedestrian Volume	13 percent
Pedestrian Delay	27 percent

In order to meet the warrant criteria, 100 percent compliance is required in both categories. Based on the results of the study, a PXO is not technically justified at either intersection as both the pedestrian volume and delays have not met the minimum requirements.

In addition to the technical criteria, consideration is given to the surrounding area and the collision history and in some cases engineering judgement may be applied to recommend a PXO even if the number of pedestrians does not meet the threshold of the technical warrants.

The surrounding area provides some contextual considerations that support a controlled crossing. Specifically, the following considerations support the enhancement of existing pedestrian crossing protection:

- Pedestrians desire lines between neighbourhoods, schools and parks on either side of Morningside Avenue (Timberbank Junior Public School, Timberbank Park, Highland Heights Junior Public School and Highland Heights Park)

Environmental safety characteristics were also evaluated to determine if a PXO would be appropriate. Details of the evaluation are included in Attachment 1. Based on the evaluation, a PXO may not be a suitable type of pedestrian crossing protection on Birchmount Road for the following reasons:

- Five-lane cross-section results in wide crossing distances
- Significant volumes of turning traffic on to and off of Birchmount Road
- TTC stops are present on both sides of Birchmount Road

Although there is some contextual consideration that support a crossing at this location, existing pedestrian crossings are considerably below requirements and environmental safety concerns are present. Based on the above results, pedestrian crossing protection and the installation of a PXO is not justified at Birchmount Road and Chaldean Street/Glendower Circuit.

## **Traffic Control Signals**

To determine the need for traffic control signals at the intersection of Birchmount Road and Chaldean Street/Glendower Circuit, staff rely on the justification criteria as outlined in the Ontario Traffic Manual (OTM) Book 12. The OTM justification criteria includes factors such as volume of vehicles and pedestrians, delay to cross traffic, and collision history. In addition to these technical justifications, staff consider an environmental checklist which includes: consideration of road width, posted speed limit, operating speeds, adjacent land uses, pedestrian desire lines and demographics, presence of a transit stop, sight lines, and distance between existing crossing opportunities.

As part of the investigation, staff conducted vehicle and pedestrian counts on March 29, 2018 and June 16, 2022 at the intersection of Birchmount Road and Chaldean Street/Glendower Circuit. The results of the counts and collision hazard are summarized in Table 1. The "Collision hazard" criterion is based on the number of collisions potentially preventable by the installation of traffic control signals. Collision history provided by the Toronto Police Service for the three-year period ending August 31, 2023 disclosed one collision at the subject intersection that was potentially preventable by the installation of traffic control signals. This collision involved a pedestrian crossing Birchmount Road and a southbound vehicle. The collision report indicated minimal injuries were incurred by the pedestrian.

Table 2: Warrant Compliance - Birchmount Road and Chaldean Street/Glendower Circuit

Justification	March 29, 2018 Studies	June 16, 2022 Studies
Minimum vehicle volume	32%	37%
Delay to cross traffic (pedestrians and vehicles)	33%	43%
Collision hazard	13%	7%

To meet the justification criteria for the installation of traffic control signals, one of the justifications must be 100 percent satisfied or both the minimum vehicular volume and delay to cross traffic justifications must be at least 80 percent satisfied. Based on the technical warrant criteria, the installation of traffic control signals is not justified.

The TTC has been consulted but has not yet provided feedback on this request at the timing of writing this report.

Based on the above, Transportation Services does not recommend the installation of a PXO or traffic control signals at Birchmount Road and Chaldean Street/Glendower as they are not justified based on the criteria that was evaluated.

### Other Considerations

If, despite the findings above, Scarborough Community Council decides to proceed with installing traffic control signals, the following impacts should be noted:

- There will be a loss of approximately two on-street parking spaces on Chaldean Street and approximately four on-street parking spaces on Glendower Circuit associated with the installation of traffic control signals at this intersection.
- There is potential for increase in delays to transit service on Birchmount Road.

The Ward Councillor has been advised of the recommendation in this report.

## **CONTACT**

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## **SIGNATURE**

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Roger Browne, M.A.Sc., P. Eng.  
Director, Traffic Management, Transportation Services

## **ATTACHMENTS**

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Attachment 1: Environmental Safety Audit - PXO - Birchmount Road  
Attachment 2: Map - Traffic Control Signals - Birchmount Road and Chaldean Street/Glendower Circuit

Attachment 1: Environmental Safety Audit - PXO - Birchmount Road

Standard	Comments	Standard Met/Not Met
Vehicle operating <b>speed</b> less than 60 km/h	The current speed limit on Birchmount Rd is 50 km/h	Met
Not more than four lanes <b>wide</b> on a two-way street or more than three lanes wide on a one-way street	Birchmount Rd operates with two lane in each direction and a two-way left-turn lane	Not Met
Traffic <b>volume</b> not more than 35,000 vehicles per day	Birchmount Rd carries approximately 25,000 vehicles per day.	Met
No significant volume of <b>turning</b> movements	Significant volumes of turning traffic off of and onto Birchmount Rd	Not Met
No <b>visibility</b> problems exist for either pedestrians or motorists	There are no visibility concerns along this segment of Birchmount Rd.	Met
No <b>loading</b> zones (including TTC) in the immediate area	There are TTC stop at the north-west and south-east corners of the intersection	Not Met
No <b>driveways</b> or entrances nearby	There are no nearby driveways or entrances	Met
<b>Spacing</b> is not less than 200 metres to another pedestrian crossover or traffic control signal	<p>There are no pedestrian crossovers or traffic control signals within 200 metres of the segment.</p> <p>Huntingwood Dr (traffic control signals) - 325 metres south</p> <p>Timberbank Blvd/ Glendower Circuit (traffic control signal) - 425 metres north</p>	Met

Attachment 2: Map - Pedestrian Crossing Protection - Birchmount Road and Chaldean Street/Glendower Circuit

