



Staff Report for Committee of the Whole Meeting

Date of Meeting: December 4, 2019

Report Number: SRPRS.19.172

Department: Planning and Regulatory Services
Division: Development Engineering & Transportation

Subject: SRPRS.19.172 - Pedestrian Crossing Improvements on Bernard Avenue between Yonge Street and Yorkland Street

Purpose:

To address concerns from residents of the Richmond Hill Retirement Residence regarding safe pedestrian crossing of Bernard Avenue to the Upper Yonge Place plaza.

Recommendation(s):

- a) That staff be authorized to implement the pavement marking, signage, and crossing improvements on Bernard Avenue (between Yonge Street and Yorkland Street), as recommended in staff report SRPRS.19.172;
- b) That a budget in the amount of \$70,000 be approved to implement the works identified in Recommendation a); and
- c) That this budget be established from the Federal Gas Tax Reserve Fund.

Contact Person:

Rob Cowie, Senior Traffic Analyst, Development Engineering, 905-771-6455 and/or
Hubert Ng, Acting Manager of Transportation, Development Engineering, 905-771-6501

Report Approval:

Submitted by: Kelvin Kwan, Commissioner of Planning and Regulatory Services

Approved by: Neil Garbe, Chief Administrative Officer

All reports are electronically reviewed and/or approved by the Division Director, Treasurer (as required), Town Solicitor (as required), Commissioner, and Chief Administrative Officer. Details of the reports approval are attached.

Page 2

Background:

Transportation staff have received a number of concerns from residents of the Richmond Hill Retirement Residence regarding their ability to safely cross Bernard Avenue midblock between Yonge Street and Yorkland Street.

Bernard Avenue is an east-west collector road extends easterly from Yonge Street. The road segment of interest between Yonge Street and Yorkland Street has a five-lane cross section (two lanes in each direction and a two-way left turn lane) with 30.0 m Right-of-Way and 19.0 m pavement width. Sidewalks are located on both sides of Bernard Avenue. The posted speed limit for this stretch of the road is 50 km/h. The average daily traffic volume on Bernard Avenue is approximately 8,600 vehicles. Both intersections of Bernard Avenue at Yonge Street and at Yorkland Street are signalized. The length of this segment of Bernard Avenue is approximately 300 m.

Data Collection and Field Observations

Staff have investigated these concerns and have found that there is a well-established pedestrian desire line between the Richmond Hill Retirement Residence, on the north side of Bernard Avenue, and the commercial plaza, on the south side of Bernard Avenue.

A pedestrian crossing and traffic volume count was conducted on Bernard Avenue between Yonge Street and Yorkland Street to assess warrants for a north-south pedestrian crossing facility over the peak crossing periods from 11:00 am to 1:00 pm and from 3:00 pm to 7:00 pm. Turning movement counts were conducted at the same time at the Richmond Hill Retirement Residence and commercial plaza driveways, to gauge the amount of vehicular traffic near this crossing during these peak times.

Motorist sightlines, motorist/pedestrian interactions, pedestrian activities, and types of users were also assessed in the general vicinity.

The collected data indicates that a significant number of pedestrians cross Bernard Avenue between gaps in Bernard Street traffic throughout the day. The majority of north-south pedestrian crossings occurred at the east sidewalk of the retirement home driveway to the commercial plaza, demonstrating a clear desire line of pedestrian activity.

A pedestrian crossover assessment was conducted for the midblock of Bernard Avenue in accordance with the Ontario Traffic Manual (OTM) Book 15 – Pedestrian Crossing Treatments warrants.

This assessment is a tool that takes into account four-hour pedestrian and vehicle volumes, distance of the site from another traffic control devices, and system connectivity.

The four highest hours of observed pedestrian activity were used for this assessment.

Page 3

The technical criteria for the installation of a pedestrian crossover is shown below, along with the count results for this location.

Four-hour Pedestrian Volume

Threshold Value: 65
Observed Value: 170
Criteria Met 100%

Four-hour Traffic Volume

Threshold Value: 395
Observed Value: 1,575
Criteria Met: 100%

Distance from nearest Traffic Control Device

Threshold Value: 200m
Observed Value: 130m
Criteria Met 65%

Based on the warrant assessment, the subject midblock location on Bernard Avenue fully satisfies the pedestrian and traffic volume criteria of the warrant, but does not satisfy the distance criteria. However, it was observed that the majority of the pedestrian crossing activity was by senior and mobility-challenged pedestrians from the retirement residence, which are considered vulnerable users and at higher risk for potential pedestrian-vehicle conflicts. Also, as noted previously there is a clear desire line at this location.

Based on the above context-specific factors and the satisfaction of the pedestrian and traffic criteria, staff recommend that a pedestrian crossover be implemented at this midblock location on Bernard Avenue, between Yonge Street and Yorkland Street.

Selection of the Type of Pedestrian Crossover

The appropriate type of pedestrian crossover treatment is selected based on four specific criteria:

1. Four-hour two-way vehicular volume of the roadway at the location of the crosswalk,
2. Posted speed limit of the roadway,
3. Total number of lanes for the roadway cross section, and
4. Presence of raised pedestrian refuge.

The four-hour vehicular volume for Bernard Avenue during the peak pedestrian period was 170 vehicles. The posted speed limit is 50 km/h for the five-lane road. There is no

Page 4

raised pedestrian refuge in the area. Based on the matrix of facility types in OTM Book 15, a Level 2 Type B pedestrian crossing treatment is warranted for this location.

The components of a Pedestrian Crossover Level 2 Type B include zebra pavement markings, flashing beacon lights, overhead mounted pedestrian crossover signage and other appropriate regulatory signage.

A clear area of 65m is required on each approach to the crosswalk in order to improve visibility and safety for the users of the pedestrian crosswalk. Attachment 1 provides an illustration of the recommended crosswalk and required signage.

Financial/Staffing/Other Implications:

The implementation of this pedestrian crossover at the midblock on Bernard Avenue is estimated to cost \$70,000. The recommended source of funding for this project is the Federal Gas Tax Reserve Fund.

Relationship to the Strategic Plan:

The recommendations of this report are consistent with the City's Strategic Plan to enhance community safety. It leads to achieving the objectives Goal One of the City's Strategic Plan of providing "stronger connections in Richmond Hill by improving the function of buildings, streets, and neighborhoods" and Goal Two by providing "better choices" of mobility for our residents.

Conclusion:

The implementation of a north-south pedestrian crossover at the midblock of Bernard Avenue, between Yonge Street and Yorkland Street, is recommended to provide better access between the retirement residence and the commercial plaza across the street.

Based on the criteria established in the Ontario Traffic Manual Book 15, a Level 2 Type B pedestrian crossover consisting of zebra crossing pavement markings, rapid rectangular flashing beacons, and appropriate signage is recommended as a remedial measure at the midblock of Bernard Avenue between Yonge Street and Yorkland Street.

Attachments:

The following attached documents may include scanned images of appendixes, maps and photographs. If you require an alternative format please call contact person listed in this document.

- Attachment 1: Pedestrian Crossing Improvements at Bernard Avenue

Page 5

Report Approval Details

Document Title:	SRPRS.19.172 - Bernard Avenue Pedestrian Crossover.docx
Attachments:	- SRPRS.19.172 Attachment 1.pdf
Final Approval Date:	Nov 25, 2019

This report and all of its attachments were approved and signed as outlined below:

Dan Terzievski - Nov 22, 2019 - 1:23 PM

Kelvin Kwan - Nov 22, 2019 - 2:35 PM

David Dexter - Nov 25, 2019 - 11:18 AM

Neil Garbe - Nov 25, 2019 - 3:04 PM