

Corridor Safety Review - Queen Street East

Date: May 9, 2022

To: Toronto and East York Community Council

From: Director, Traffic Management, Transportation Services

Wards: Ward 19, Beaches-East York

SUMMARY

This staff report is about a matter that Community Council has delegated authority from City Council to make a final decision.

Toronto and East York Community Council directed Transportation Services to conduct a review of various safety and operational concerns for road users on Queen Street East, between Silver Birch Avenue and Victoria Park Avenue. This report provides an overview of the assessments and improvements proposed or undertaken by Transportation Services.

RECOMMENDATIONS

The Director, Traffic Management, Transportation Services recommends that:

1. Toronto and East York Community Council receive this report for information.

FINANCIAL IMPACT

All costs associated with the safety and operational improvements are included in the Transportation Services 2022 Capital Budget.

DECISION HISTORY

On September 9, 2021, Toronto and East York Community Council adopted Item TE27.65 (Road safety improvements needed on Queen Street East around Neville Park Streetcar Loop), directing Transportation Services to undertake a road safety review for Queen Street East, between Silver Birch Avenue and Victoria Park Avenue. The Community Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.TE27.65>

COMMENTS

In response to the direction from Toronto and East York Community Council's adoption of the item TE27.65, Transportation Services conducted a road safety review and studied operational and safety measures on Queen Street East between Silver Birch Avenue and Victoria Park Avenue.

Existing Conditions

Queen Street East between Silver Birch Avenue and Victoria Park Avenue is characterized by the following conditions:

- It is a four-lane, east-west, roadway that is classified as a minor arterial
- It operates two-way traffic on a pavement width of approximately 13 metres
- there are streetcar tracks in both directions that operate on a shared right of-way with general traffic
- The daily two-way traffic volume is approximately 6,000 vehicles
- The speed limit is 40 km/h
- Heavy trucks are prohibited between Nursewood Road and Fallingbrook Road
- The Toronto Transit Commission (TTC) service is provided by 501 streetcars and 301 bus routes
- There are sidewalks provided on both sides of the street

The parking regulations on Queen Street East, between Silver Birch Avenue and Victoria Park Avenue are generally as follows:

North side

- Permit parking, between Silver Birch Avenue and Nursewood Road, from 2:00 a.m. to 7:00 a.m., except no stopping from 7:00 a.m. to 9:00 a.m., Monday to Friday
- Pay and display parking, between Silver Birch Avenue and Neville Park Boulevard
- No stopping, between Silver Birch Avenue and Nursewood Road, from 7:00 a.m. to 9:00 a.m., Monday to Friday
- Maximum twelve-hour parking, from 7:00 p.m. to 7:00 a.m., between a point 45 metres west of Victoria Park Avenue and 15 metres further west

South side

- Permit parking, between Silver Birch Avenue and Nursewood Road, from 2:00 a.m. to 7:00 a.m., except no stopping from 4:00 p.m. to 6:00 p.m., Monday to Friday
- Pay and display parking, between Silver Birch Avenue and Nursewood Road
- No stopping, between Silver Birch Avenue and Nursewood Road, from 4:00 p.m. to 6:00 p.m., Monday to Friday
- Maximum twelve-hour parking, from 7:00 p.m. to 7:00 a.m., between Nursewood Road and Victoria Park Avenue

The area, along Queen Street East, is generally comprised of low-rise residential buildings and mixed-use properties with retail stores on the first floor. The R.C. Harris Water Treatment Plant and Neville Park TTC Loop is located southeast of the study area.

The study area consists of eight intersections controlled by stop signs at Queen Street East (listed west to east):

- Silver Birch Avenue
- Scarborough Road ("T" type intersection)
- Munro Park Avenue ("T" type intersection)
- Kingswood Road ("T" type intersection)
- Neville Park Boulevard (east intersection)
- Neville Park Boulevard (west intersection)
- Nursewood Road
- Victoria Park Avenue ("T" type intersection)

There are two Pedestrian Crossovers on Queen Street East located at Silver Birch Avenue and Neville Park Boulevard. A map of the area is included in Attachment 1.

Collision Review

A review of the Toronto Police Service collision records, with specific emphasis for pedestrian, cyclist and Killed or Seriously Injured (KSI) collisions within the study area was undertaken for the five year period ending January 1, 2022. The results of the review are summarized in Table 1.

Table 1: Collision Summary - Queen Street East, between Silver Birch Avenue and Victoria Park Avenue

Type of Collision	2017	2018	2019	2020	2021
Collision involving Pedestrian	0	0	0	0	0
Collision involving Cyclist	0	0	1	0	1
Killed or Seriously Injured (KSI)	0	0	0	0	1

As shown in the above table, there were two collisions involving a cyclist. These two collisions are described in more detail below:

- August 20, 2021, at around 3:00 p.m. - at the intersection of Queen Street East and Silver Birch Avenue, a cyclist and motorist travelling westbound on Queen Street East collide. The cyclist fell to the ground and the motorist drove away.
- August 13, 2019, at around 6:00 p.m. - at the intersection of Queen Street East and Victoria Park Avenue, a cyclist travelling westbound was hit by an eastbound left-turning vehicle. Due to the injuries suffered, this collision is classified as a KSI.

Additionally, this review did not disclose any collisions related to speeding or aggressive driving between vehicles and TTC Streetcars or transit users.

Road Safety Review

Traffic Operations' Staff conducted a detailed safety review on Queen Street East, between Silver Birch Avenue and Victoria Park Avenue. This review included all aspects of the road's operation. The results are summarized below.

A. Signage

The signage within the study area were generally found to be in good condition, appropriate and clearly visible to road users. Staff have placed requests to replace a few faded parking signs and to adjust the signs that were not properly facing traffic, e.g. a No Passing sign, on the north side of Queen Street East, in advance of the pedestrian crossover at Neville Park Blvd and a No Heavy Trucks Sign at Nursewood Road.

The existing street name sign for Victoria Park Avenue on the south side of Queen Street East is clearly visible and identifies Victoria Park Avenue as the crossing roadway, similar to the rest of the intersections in its vicinity.

B. Pavement markings

The pavement markings, within the study area were in good condition. These markings, when required, will be refreshed as part of Transportation Services' annual painting program.

C. Sight lines

All sightlines along Queen Street East and at its intersections with side streets within the study area were reviewed and there were no impediments identified for road users.

D. Sidewalks

Sidewalks on Queen Street East, within the study area, were in good condition.

E. Street lighting

Street lighting is the responsibility of Toronto Hydro. However, Transportation Services' review did note that there are street lights provided along Queen Street East within the study area.

F. Parking Regulations

A review of the existing parking regulations revealed that they both effectively allow for safe and efficient traffic operations and serve the community and businesses within the study area. These regulations can be categorized as follows:

- Corner parking prohibition to provide unobstructed sightlines at intersections
- No standing anytime at TTC stops to ensure passenger boarding and alighting is done without any impediments
- No stopping anytime 15m on the approach side and nine meters beyond the pedestrian crossovers
- Stopping prohibition during peak hours to ensure a smooth flow of traffic
- Pay and Display parking to support the local community and area businesses by encouraging a regular turnover in the on-street parking supply
- No parking anytime in front of the TTC loop to provide unobstructed view of traffic in its vicinity

In light of the above, no changes are recommended to the existing parking regulations.

G. Community Safety Zone

A Community Safety Zone is created by designating the frontage of an eligible school within the City as such. The study area cannot be designated a Community Safety Zone as there is no school fronting on Queen Street East.

H. Traffic Control Devices

The existing pedestrian crossovers on Queen Street East at Neville Park Boulevard and Silver Birch Avenue were found to be appropriately functional and in accordance with the City's standards.

G. Speed and Volume Data

The most recent speed and volume study, conducted in November 2021, revealed that the average speed (39 km/h) of vehicles on Queen Street East, within the study area is in compliance with the speed limit of 40 km/h. Additionally the daily traffic volume (6,000 vehicles) is below the range, set out in the City of Toronto guidelines for a minor arterial road, between 8,000 and 20,000 vehicles per day (both directions).

Pedestrian Crossing Protection Warrant Studies

Transportation Services staff, at the request of the Ward Councillor, conducted Pedestrian Crossing Protection Warrant Justification studies at the intersection of Queen Street East and Victoria Park Avenue. The studies provide an assessment of the need for a traffic control signal, a pedestrian crossover, or all-way-stop control. The need for these devices is based on recent field traffic studies determining existing pedestrian volumes, vehicle volumes, pedestrian delays, and conflicts. The results of the field studies and warrant justification studies are provided below.

A. Traffic Control Signal

To determine the need for traffic control signals at the intersection of Queen Street East and Victoria Park Avenue, staff rely on the justification criteria as outlined in the 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, vehicle operating speeds, adjacent land uses, pedestrian desire lines and demographics, presence of a transit stop, sight lines, and distance between existing crossing opportunities.

Using traffic volumes recorded during the peak eight hours on Tuesday, December 14, 2021, the following results were obtained:

Table 2: Warrant Compliance - Queen Street East at Victoria Park Avenue

Justification	Compliance Level
Minimum Vehicular Volume	26%
Delay To Cross Traffic	35%
Collision Hazard	7%

For traffic control signals to be numerically justified, one of the “Minimum Vehicular Volume” or “Delay to Cross Traffic” or “Collision Hazard” warrants must be 100% satisfied, or both the “Minimum Vehicular Volume” and “Delay to Cross Traffic” warrants must be at least 80% satisfied.

The warrant Collision Hazard is based on three years collision history review ending January 1, 2022.

As outlined in the above table, the traffic volumes do not satisfy the requirements to install traffic control signals.

B. Pedestrian Crossover (PXO)

To determine the need for a PXO on Queen Street East at Victoria Park Avenue, staff rely on 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.

Table 3 summarizes the results of traffic volumes collected during the peak eight hours of a typical weekday on Tuesday, December 14, 2021.

Table 3: Pedestrian Crossover Warrant Criteria and Compliance on Queen Street East and Victoria Park Avenue

Type A - Pedestrian Crossover Warrant	Compliance Level
Pedestrian Volumes	11%
Pedestrian Delays	8%

For a Pedestrian Crossover to be numerically justified, both the “Pedestrian Volumes” and “Pedestrian Delays” warrants must be 100% satisfied. As outlined above, the pedestrian volumes and delays do not satisfy the requirements to install a Pedestrian Crossover at this intersection at this time.

The minimum required pedestrian volume to meet the Pedestrian Volume warrant is 409 pedestrian, however only 43 pedestrians (11%) were observed crossing the road over the eight-hour study period. Also, based on the pedestrian crossing volume, at least 130 pedestrians must be delayed more than 10 seconds, to meet the Pedestrian Delay Warrant, however total of 11 pedestrian delays (8%) were observed crossing the road.

As outlined in the above table, the traffic volumes do not satisfy the requirements to install a pedestrian crossover.

C. All-Way Stop Control

In order for all-way stop control to be warranted at an intersection, established criteria must be satisfied. The warrants consist of four components, including: collision history, total vehicle volume, combined vehicle and pedestrian volumes crossing the major road and the percentage of traffic on the major road.

Collision history provided by the Toronto Police Service for the three-year period ending January 1, 2022, disclosed that total 13 reported collisions occurred at this intersection and none of these collisions involved pedestrians. Out of the total 13 reported collisions, two were considered potentially preventable by the installation of all-way stop control.

Transportation Services conducted an all-way stop control study on Tuesday, December 14, 2021 at the subject intersection. The results of the study were evaluated against the warrant criteria for all-way stop control as adopted by City Council. The evaluation is summarized in Table 4.

Table 4: All-Way Stop Control Study at Queen Street East and Victoria Park Avenue

No.	Warrant Type	Actual	Required	Satisfied (Yes/No)
A	Number of Potentially Preventable Collisions (January 1, 2019 to January 1, 2022)	2	9	No
B1	Average Vehicle Volumes	505/hour	375/hour	Yes
B2	Combined Vehicle & Pedestrian Volumes Crossing Major Road (Average)	103/hour	150/hour	No
B3	Percentage of Traffic on Major Street	83%	≤70%	No

In order for the all-way stop control to be technically warranted, either Warrant A must be met or Warrant B1 or B2 combined with Warrant B3 must be achieved. Based on the study results, the technical warrants for the installation of all-way stop control are not satisfied. Therefore, it is not recommended that all-way stop control be installed at the intersection of Queen Street East and Victoria Park Avenue.

In summary, as a result of the findings of the assessments above and since this location does not meet the minimum warrant requirements, all-way stop control is not recommended on Queen Street East at Victoria Park Avenue.

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

CONTACT

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SIGNATURE

for
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ATTACHMENTS

Attachment 1: Environmental Safety Audit - PXO - Queen Street East and Victoria Park Avenue
Attachment 2: Area Map - Queen Street East, between Victoria Park Avenue and Silver Birch Avenue

Attachment 1: Environmental Safety Audit - PXO - Queen Street East and Victoria Park Avenue

Standard	Comments	Standard Met/Not Met
Vehicle operating speed less than 60 km/h	The posted speed limit on Queen Street East is 40 km/h.	Met
Not more than four lanes wide on a two-way street or more than three lanes wide on a one-way street	Queen Street East operates with two lanes in each direction.	Met
Traffic volume not more than 35,000 vehicles per day	Queen Street East carries approximately 6,000 vehicles per day.	Met
No significant volume of turning movements	The volume of traffic turning to/from Queen Street East is high (approx. 1200 vehicles over busiest eight hours)	Not Met
No visibility problems exist for either pedestrians or motorists	Example: No vertical or horizontal curves at intersection.	Met
No loading zones (including TTC) in the immediate area	No TTC stops	Met
No driveways or entrances nearby	No driveways in the vicinity.	Met
Spacing is not less than 200 metres to another pedestrian crossover or traffic control signal	Neville Park Avenue (PXO) - 179 metres west	Not Met

Attachment 2: Area Map - Queen Street East, between Victoria Park Avenue and Silver Birch Avenue

