

Road Safety Review - Knox Avenue

Date: May 9, 2022

To: Toronto and East York Community Council

From: Director, Traffic Management, Transportation Services

Wards: Ward 14, Toronto - Danforth

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 reviews of various safety and operational concerns for road users on Knox Avenue. This report provides an overview of the assessments and investigations 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

There are no financial impacts resulting from the adoption of the recommendation in this report.

DECISION HISTORY

On September 16, 2019, Toronto and East York Community Council adopted Item TE8.74 (Knox Avenue: Slowing Down Traffic and Keeping People Safe), directing Transportation Services to report back on:

- Reviewing signage;
- Additional separation between the Cycle Lane and traffic

- Investigate if reversing the direction of Knox Avenue would reduce cut-through traffic;
- Curb radius reduction at Queen Street East and Knox Avenue; and
- Additional speed humps between the existing humps.

The Toronto and East York Community Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.TE8.74>

On November 19, 2013, Toronto and East York Community Council adopted Item TE28.71 (Additional Speed Hump - Knox Avenue), authorizing the installation of an additional speed hump on Knox Avenue, between Queen Street East and Eastern Avenue. The Toronto and East York Community Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.TE28.71>

On June 22, 2011, Toronto and East York Community Council adopted Item TE8.63, authorizing the prohibition of westbound left turns from Queen Street East to Knox Avenue, from 6:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m., daily. The Toronto and East York Community Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2011.TE8.63>

On September 9, 2008, Toronto and East York Community Council adopted Item TE18.76 as amended, authorizing the installation of two speed humps on Knox Avenue, between Queen Street East and Eastern Avenue, and the reduction of speed limit from 40 km/h to 30 km/h. The Toronto and East York Community Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2008.TE18.76>

On June 26, 2007, Toronto and East York Community Council adopted Item TE7.72, authorizing the installation of a northbound contraflow bicycle lane on the east side of Knox Avenue, from Eastern Avenue to Queen Street East. The Toronto and East York Community Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2007.TE7.72>

COMMENTS

In response to the direction from Toronto and East York Community Council through the adoption of item TE8.74, Transportation Services has studied measures to enhance safety and operations on Knox Avenue, between Queen Street East and Eastern Avenue.

Existing Conditions

Knox Avenue, between Queen Street East and Eastern Avenue, is characterized by the following conditions:

- It is a one-lane, north-south, roadway that is classified as a local roadway
- It operates one-way southbound traffic on a pavement width of approximately 7.3 metres
- The daily one-way traffic volume is approximately 900 vehicles
- The speed limit is 30 km/h
- Heavy trucks are prohibited at all times
- There is no Toronto Transit Commission (TTC) service provided on the street
- There are sidewalks provided on both sides of the street

There is a contraflow bike lane on the east side of the street. Traffic calming is present in the form of three speed humps on Knox Avenue between Queen Street East and Eastern Avenue.

The parking regulations on Knox Avenue, between Queen Street East and Eastern Avenue are as follows:

East Side

- No stopping anytime

West Side

- Permit parking, from 12:01 a.m. to 7:00 a.m., daily
- Maximum three-hour parking is permitted at all other times

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 on Knox Avenue, between Queen Street East and Eastern Avenue, was undertaken for the five year period ending January 1, 2022 and did not reveal any collisions.

Additionally, this review did not disclose any collisions that could be attributed to excessive speeding or aggressive driving along Knox Avenue.

Road Safety Review

Traffic Operations' Staff conducted a detailed safety review on Knox Avenue, between Queen Street East and Eastern Avenue. This review included all aspects of the road's operation. The results are summarized as follows:

A. Signage

The signage within the study area were generally, found to be in good condition, appropriate and clearly visible to all road users. Staff have placed requests to replace a few faded parking signs and to replace a damaged stop sign.

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 Knox Avenue and at its intersections with Memory Lane and Sears Street, were reviewed and there were no impediments identified for road users.

D. Sidewalks

Sidewalks on both sides of Knox Avenue, were found to be 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 Knox Avenue.

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 area residents.

Contraflow Bike Lane:

The northbound contraflow bike lane adjacent to the east curb of Knox Avenue, between Queen Street East and Eastern Avenue, was approved by TEYCC in June 2007 to facilitate northbound cyclists, by making a connection between multi-use path on Lake Shore Boulevard East and the bike lanes on Greenwood Avenue via Queen Street East; while with the existing one-way southbound designation, cyclists are able to travel southbound on Knox Avenue in mixed traffic.

The geometry of contraflow bicycle lanes depends on the operating speed and traffic volume of the roadway, as well as the presence of on-street parking and available right-of-way for the roadway corridor.

The width of the contraflow bike lane on Knox Avenue follows the specifications outlined in Ontario Traffic Manual Book 18 - Cycling Facilities. A width of 2 metres is recommended to allow cyclists to overtake one another within the contraflow lane. Separation between the cycling facility and motor vehicle may be provided along the bike lane if the speed of oncoming vehicles exceeds 40 km/h or the volume exceeds 3,000 vehicles per day. Both the operating speed (33 km/h) of vehicles and the daily traffic volume (900 vehicles) on Knox Avenue are below these thresholds. Consideration should also be given to the available right-of-way and to ensure that both the travel lane and the parking lane meet at least the minimum design requirements to ensure safety for all road users. Transportation Services does not recommend any additional separation between the contraflow bike lane and the southbound travel lane.

Reversing the direction of Knox Avenue

Knox Avenue, between Queen Street East and Eastern Avenue, is a one-way southbound roadway. Laing Street, between Queen Street East and Eastern Avenue is a one-way northbound street, west of Knox Avenue. These two streets form a one-way pair that, while limiting the volume of vehicles travelling along, provide a connection between Queen Street East and Eastern Avenue. Changes to the direction of travel on one street would negatively impact the road network connectivity.

It should also be noted that there is a left-turn prohibition in effect daily from 6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m., for westbound vehicles on Queen Street East at Knox Avenue which further prevents through traffic on Knox Avenue. According to the traffic volume data collected in March 2022, the daily traffic volume on Knox Avenue is approximately 900 vehicles per day. This is within the acceptable range for a local road. As per the City of Toronto guidelines, the typical daily vehicle volume of a local road is less than 2,500 vehicles per day (both directions). As such, reversing the direction of travel on Knox Avenue is not recommended without extensive community consultation and concurrence.

Curb Radius Reduction at Queen Street East and Knox Avenue

When considering geometric improvements such as curb radius reduction, the proposal should address safety-related or operational problems and opportunities. Collision patterns or frequency, excessive traffic volumes, risk to pedestrians or cyclist and intersection geometric alignment issues are some of the operational problems that may be mitigated by these improvements.

During the course of the investigation, staff did not identify any operational or safety concerns; based on the data available and the existing conditions, traffic operations are satisfactory on Knox Avenue between Queen Street and Eastern Avenue. It should also be noted that permanent changes to the curb alignment are typically looked at, in conjunction with planned road work. There does not appear to be any work scheduled in the near future (2022-2027) at this intersection.

Additional speed humps:

Toronto and East York Community Council, in September 2008, approved the installation of two speed humps on Knox Avenue, between Queen Street East and Eastern Avenue. Later in November 2013, an additional speed hump was approved north of Eastern Avenue.

To evaluate the effectiveness of the speed humps and in order to confirm whether there is excessive speeding on Knox Avenue, a three-day mid-block speed and volume study was conducted from March 22 to 24, 2022. Data was gathered within two midblock locations on Knox Avenue, between the existing speed humps.

Based on the study results, the operating speed, which is the speed at which 85 percent of traffic is travelling at or below, was observed at 33 km/h.

The investigation determined that the three existing speed humps are operating satisfactorily and additional speed humps are not recommended.

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

CONTACT

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SIGNATURE

A handwritten signature in blue ink that reads "Dan Clement". The signature is cursive and stylized.

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

ATTACHMENTS

Attachment 1: Map - Area Map-Knox Avenue, between Queen Street East and Eastern Avenue

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