

Turn Prohibitions: Avenue Road at Castlefield Avenue

Date:	April 7, 2016
To:	North York Community Council
From:	Director, Transportation Services, North York District
Wards:	Ward 16 – Eglinton-Lawrence
Reference Number:	<i>p:/2016/ClusterB/TRA/NorthYork/ny16043</i>

SUMMARY

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

Transportation Services has reviewed the safety of the intersection of Avenue Road and Castlefield Avenue. Although traffic control signals are not justified due to low traffic volumes, a pattern of collisions has been identified involving eastbound or westbound vehicles entering or crossing Avenue Road. Therefore, we are requesting approval to implement through and turn restrictions at the intersection of Avenue Road and Castlefield Avenue during peak periods.

The proposed through and turn restrictions will address the safety concerns regarding the through and left-turning movements at the intersection of Avenue Road and Castlefield Avenue.

RECOMMENDATIONS

Transportation Services recommends that:

1. City Council prohibit eastbound left turns from 6:00 a.m. to 10:00 a.m. and from 3:00 p.m. to 6:00 p.m., Monday to Friday, at Avenue Road and Castlefield Avenue.
2. City Council prohibit westbound left turns from 6:00 a.m. to 10:00 a.m. and from 3:00 p.m. to 6:00 p.m., Monday to Friday, at Avenue Road and Castlefield Avenue.

3. City Council prohibit eastbound through traffic movements from 6:00 a.m. to 10:00 a.m. and from 3:00 p.m. to 6:00 p.m., Monday to Friday, at Avenue Road and Castlefield Avenue.
4. City Council prohibit westbound through traffic movements from 6:00 a.m. to 10:00 a.m. and from 3:00 p.m. to 6:00 p.m., Monday to Friday, at Avenue Road and Castlefield Avenue.

Financial Impact

All costs associated with the installation of the proposed turn prohibitions are included within the Transportation Services 2016 Operating Budget.

ISSUE BACKGROUND

Transportation Services was requested by the Ward Councillor, on behalf of area residents, to conduct an intersection safety review at the intersection of Avenue Road and Castlefield Avenue. This request was based on the residents' concerns with regards to a continued collision pattern involving eastbound and westbound through and left- turning motorists attempting to cross Avenue Road.

COMMENTS

Existing Conditions

Avenue Road is a four-lane arterial road with a daily two-way traffic volume of approximately 42,000 vehicles and a regulatory speed limit of 50 km/h, with the exception of a "40 km/h when flashing" zone during school hours from Briar Hill Avenue to 20 metres south of Castlefield Avenue in both directions. Castlefield Avenue is a two-lane local roadway with a posted speed limit of 40 km/h. The right-of-way for traffic on Castlefield Avenue at Avenue Road is controlled by stop signs for eastbound and westbound traffic. Traffic control signals are located on Avenue Road 100 metres to the north at St. Clements Avenue and 100 metres to the south at Roselawn Avenue. Located on the northwest corner of the intersection is Allenby Public School and on the northeast corner is North Toronto Early Years Learning Centre.

The TTC transit service on Avenue Road operates all days of the week, however no transit stops are located at this intersection.

A review of the sightlines at this intersection has indicated that motorist and pedestrian visibility is clear for all approaches. Stop signs are clearly visible and crosswalks are provided for pedestrians crossing north and south on Avenue Road.

Parking is currently prohibited on Avenue Road as follows:

East Side, north and south of Castlefield Avenue

- No Stopping from 4:00 p.m. to 6:00 p.m., Monday to Friday
- Three hour parking all other times of the day

West Side, south of Castlefield Avenue

- No Stopping from 7:00 a.m. to 9:00 a.m., Monday to Friday
- Three hour parking all other times of the day

West Side, north of Castlefield Avenue

- No Stopping from 7:00 a.m. to 9:00 a.m., Monday to Friday
- No Parking Anytime

Staff has noted that corner parking prohibitions are in place on the west and east sides of Avenue Road at Castlefield Avenue.

Collision Review

Our review of the Toronto Police Service collision records revealed that over a three-year period ending January 1, 2016, there were a total of 24 collisions at this intersection. Twelve collisions involved eastbound and westbound motorists either turning left onto Avenue Road or travelling through on Castlefield Avenue and being struck by northbound or southbound vehicles. This type of collision could be considered preventable by the installation of traffic control signals. Of these 12 collisions, 7 collisions occurred during the a.m. peak (6:00 a.m. to 10:00 a.m.) and p.m. peak (3:00 p.m. to 6:00 p.m.). The results of this data are summarized in the following table:

Time Period	2013	2014	2015
6AM-10AM	1	2	1
3PM-6PM	2	0	1
Off Peak	1	1	3
Total	4	3	5

Traffic Control Signals

Transportation Services conducted a detailed investigation of the intersection with regards to the feasibility of installing traffic control signals.

The most recent eight-hour turning movement count conducted on April 25, 2016 at the intersection of Avenue Road and Castlefield Avenue has indicated that the technical warrants for the installation of traffic control signals are satisfied to the following extent:

Warrant 1	Minimum Vehicular Volume	58%
Warrant 2	Delay to Cross Traffic	41%
Warrant 3	Collision Hazard	87%

To satisfy the installation of a traffic control signal, one of either the Minimum Vehicular Volume or Delay to Cross Traffic warrants must be 100 percent satisfied, or both must be satisfied to the extent of 80 percent. Accordingly, the installation of a traffic control signal is not justified.

It should be noted that in order for the Collision Hazard component of the warrant to be met a total of 15 collisions in a three-year period, susceptible to correction by the installation of a traffic control signal, must occur. As noted earlier, there were 12 collisions that could potentially have been prevented by the installation traffic control signals. While this warranted option is not met, further review of other measures to reduce these collisions were done.

Turn Prohibitions

Transportation Services reviewed the feasibility of introducing turn prohibitions at the intersection of Avenue Road and Castlefield Avenue.

A review of the turning movement count has indicated that the westbound and eastbound through movements during the a.m. and p.m. peak period are relatively low as illustrated in the following table:

Direction of Travel	Time Period	Left Turn Movement	Through Movement
Westbound Traffic	2 hr. A.M Peak	23	38
Eastbound Traffic		16	29
Westbound Traffic	2 hr P.M. Peak	15	31
Eastbound Traffic		12	49

If these movements are prohibited, it should be expected that the existing traffic will be displaced to other adjacent intersections during this time period. Given the layout of the roadways in this area it is anticipated that this traffic will utilize either St. Clements Avenue or Roselawn Avenue at Avenue Road, which are currently controlled by traffic control signals. Given the low volumes, there should be minimal impact on these streets. Both of these intersections are part of the adaptive control system along Avenue Road. As such the signal operation at each of the intersections will be adjusted automatically to reflect any increased demand from traffic diverted from the intersection of Avenue Road and Castlefield Avenue.

The installation of eastbound and westbound left-turn and through prohibitions during the a.m. peak period of 6:00 a.m. to 10:00 a.m. and p.m. peak period of 3:00 pm to 6:00 pm, Monday to Friday, should reduce the number of vehicle conflicts thus reducing the collision hazard at the intersection of Avenue Road and Castlefield Avenue.

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

CONTACT

Shawn Dillon
Manager, Traffic Operations
Transportation Services Division, North York District
Tel: 416-395-7463 Fax: 416-395-7544
Email: sdillon2@toronto.ca

SIGNATURE

Jacqueline White P.Eng
Director

ATTACHMENTS

Attachment 1: Map – Avenue Road at Castlefield Avenue