



**STAFF REPORT
ACTION REQUIRED**

**Traffic Control Signals – Dufferin Street, between
Dundas Street West and Peel Avenue**

Date:	May 25, 2011
To:	Toronto and East York Community Council
From:	Acting Director, Transportation Services Toronto and East York District
Wards:	Davenport, Ward 18
Reference Number:	Ts2011138te.top.doc

SUMMARY

Transportation Services has undertaken an operational review and safety audit along Dufferin Street, between Dundas Street West and Peel Avenue. The intent of this review was to determine if the extension of Dufferin Street from Peel Avenue to Queen Street West, which eliminated the "Dufferin Street Jog", has promoted higher operating speeds and changed traffic characteristics in this area sufficiently to justify the installation of traffic control signals. The intersections reviewed for signalization were Dufferin Street at Florence Street, at Gordon Street, and at Bank Street.

Pedestrian crossovers (PXOs) are located on Dufferin Street at Bank Street/Stonehouse Crescent and at Florence Street. There is no crossing control device at Gordon Street. The current PXOs provide pedestrians with two control measures in which to cross Dufferin Street, between Dundas Street West and Peel Avenue. Both PXOs are monitored by adult crossing guards during normal school hours to assist students crossing Dufferin Street on route to/from Alexander Muir/Gladstone Avenue Junior and Senior Public School.

The safety audit revealed that the PXOs are generally operating safely, with clear sight lines in all approach directions for all road users. Speed surveys indicated that the operational speed of traffic on Dufferin Street ranges between 46 km/h and 53 km/h. This is relatively low for an arterial road. Evaluation of the traffic control signal installation warrants indicated that the installation of traffic control signals to replace either of the existing PXOs at Bank Street or Florence Street or provide a new intersection control measure at Gordon Street is not technically warranted or recommended. No further action is recommended by staff at this time.

RECOMMENDATIONS

Transportation Services recommends that:

1. City Council not authorize replacing the pedestrian crossover at the intersection of Dufferin Street and Bank Street/Stonehouse Crescent or the intersection of Dufferin Street and Florence Street with traffic control signals.
2. City Council not authorize the installation of traffic control signals at the intersection of Dufferin Street and Gordon Street.

FINANCIAL IMPACT

The adoption of the above-noted recommendations has no financial impact.

However, if City Council recommends the installation of traffic control signals on Dufferin Street, at Florence Street, Gordon Street or Bank Street and the removal of one of the PXOs at either Florence Street or Bank Street to accommodate this installation, the estimated cost would be approximately \$150,000.00

Funds in the amount of \$2,725,000.00 have been allocated in the 2011 Transportation Services Capital Budget for installation of traffic control signals. The installation of traffic control signals based on Council's decision of this report is subject to competing priorities and available funding.

ISSUE BACKGROUND

Transportation Services was recently requested by Councillor Ana Bailão, in response to local residents concerns about increased traffic volume and speed on Dufferin Street in conjunction with the elimination of the Dufferin Street jog, to undertake a safety audit on Dufferin Street, between Dundas Street West and Peel Avenue and to consider installing traffic control signals at an appropriate location in this area.

COMMENTS

Current conditions

Dufferin Street, between Dundas Street West and Peel Avenue is a minor arterial roadway with a daily two-way traffic volume of approximately 14,000 vehicles and a speed limit of 50 km/h. This section of Dufferin Street mostly operates with a single lane of traffic in each direction, since parking is allowed on both sides of the street except during the rush hour periods, Monday to Friday. TTC service on Dufferin Street is provided by the "29 and 402-Dufferin" bus service, with transit stops located nearside at Gordon Street and at Dundas Street West near Alma Avenue.

Pedestrian crossovers (PXOs) are located along this section of Dufferin Street at its intersection with Florence Street and in the off-set between the intersections of Bank Street/Stonehouse Crescent. These PXOs are about 200 metres apart. Adult school crossing guards are assigned to these pedestrian crossovers during normal school hours

providing students attending Alexander Muir/Gladstone Avenue Junior and Senior Public School (No. 108 Gladstone Avenue) with supervised crossing areas in which to cross Dufferin Street. The rear of these schools abuts the east side of Dufferin Street between Waterloo Avenue and a point about 30 metres north of Gordon Street.

Investigation

In response to the safety concerns expressed by local residents through Councillor Ana Bailão, staff undertook the following technical reviews:

- a 7-day volume and speed surveys on Dufferin Street;
- safety audit and operational review of the pedestrian crossovers at Bank Street/Stonehouse Crescent and at Florence Street;
- intersection traffic surveys to determine the need for traffic control signals at Bank Street/Stonehouse Crescent, Florence Street and Gordon Street.

The results of our studies are detailed as follows:

Dufferin Street

A comparison of the 24-hour total traffic volume on Dufferin Street, between Dundas Street West and Peel Avenue dating back to 1993 determined that the traffic volume has remained relatively unchanged, ranging between 14,000 and 16,000 vehicles daily. The most recent 2011 survey recorded traffic volumes towards the lower end of this range. In general, the elimination of the Dufferin Street jog has not contributed to a change in traffic volumes. These traffic volumes are within the range that a minor arterial roadway is expected to carry, between 8,000 and 20,000 vehicles per day.

The operating speed of traffic was surveyed for a continuous 7-day period and recorded an average 85th percentile speed ranging between 48 and 52 km/h. These study results indicate that the majority of motorists travelling on Dufferin Street, between Dundas Street West and Peel Avenue are complying with the 50 km/h speed limit. Higher rates of speed were recorded in the late evening and overnight hours, which also is typical of most arterial roads at times when traffic volume is much lower.

Bank Street/Stonehouse Crescent

Bank Street and Stonehouse Crescent are local roadways operating one-way westbound. These streets form an "off-set" intersection with Dufferin Street. Stonehouse Crescent is "Stop" controlled for westbound traffic at Dufferin Street. A pedestrian crossover is located in the off-set of Stonehouse Crescent and Bank Street. Each of these minor streets has a daily traffic volume of approximately 500 vehicles. Bank Street has a speed limit of 40 km/h, while Stonehouse Crescent has a legal speed limit of 50 km/h. There is no TTC on either local street.

Survey results at the PXO during the busiest eight-hour period of a typical weekday, revealed that about 300 pedestrians and 30 cyclists crossed Dufferin Street at the pedestrian crossover.

Based on the vehicular and pedestrian traffic count data obtained at the intersection of Dufferin Street and Bank Street/Stonehouse Crescent, the technical warrants for the installation of traffic control signals are satisfied to the following extent:

- Warrant 1: Minimum Vehicular Volume 18 percent
- Warrant 2: Delay to Cross Traffic 61 percent
- Warrant 3: Collision Hazard 0 percent

Collision statistics provided by the Toronto Police Service for the period from January 1, 2008 to December 31, 2010 indicate that 3 collisions have been reported at the intersection of Dufferin Street and Bank Street/Stonehouse Crescent. None of these collisions were of a type that would have been prevented by the presence of traffic control signals.

Florence Street

Florence Street is a local roadway that operates two-way in an east/west direction forming a "T-type" intersection at Dufferin Street. Florence Street is "Stop" sign controlled for eastbound traffic at Dufferin Street. A pedestrian crossover is located on Dufferin Street at the south side of Florence Street. Florence Street has a daily traffic volume of approximately 1500 vehicles and a speed limit of 40 km/h. There is no TTC service on this street.

Survey results at the PXO during the busiest eight-hour period of a typical weekday revealed that about 450 pedestrians and 80 cyclists crossed Dufferin Street at the pedestrian crossover.

Based on the vehicular and pedestrian traffic count data obtained at the intersection of Dufferin Street and Florence Street, the technical warrants for the installation of traffic control signals are satisfied to the following extent:

- Warrant 1: Minimum Vehicular Volume 20 percent
- Warrant 2: Delay to Cross Traffic 77 percent
- Warrant 3: Collision Hazard 0 percent

Collision statistics provided by Toronto Police Service for the period from January 1, 2008 to December 31, 2010 indicate one collision having been reported at the intersection of Dufferin Street and Florence Street. This collision was of a type that would not have been prevented by the presence of traffic control signals.

Gordon Street

Gordon Street is a local roadway operating in a one-way eastbound direction and is located about 90 metres south of Bank Street/Stonehouse Crescent and 110 metres north of Florence Street, forming a "T-type" intersection at Dufferin Street. Gordon Street is "Stop" controlled for eastbound traffic at Dufferin Street. It has a daily traffic volume of approximately 1000 vehicles and a speed limit of 40 km/h. There is no TTC service on

Gordon Street, however, bus stops are located on Dufferin Street at Gordon Street for the "29 and 402-Dufferin Street" bus service.

Survey results during the busiest eight-hour period of a typical weekday, revealed that about 180 pedestrians and 20 cyclists crossed Dufferin Street at this uncontrolled crossing area.

Based on the vehicular and pedestrian traffic count data obtained at the intersection of Dufferin Street and Gordon Street, the technical warrants for the installation of traffic control signals are satisfied to the following extent:

- Warrant 1: Minimum Vehicular Volume 40 percent
- Warrant 2: Delay to Cross Traffic 82 percent
- Warrant 3: Collision Hazard 0 percent

Collision statistics provided by the Toronto Police Service for the period from January 1, 2008 to December 31, 2010 indicate that 2 collisions have been reported at the intersection of Dufferin Street and Gordon Street. One of these collisions was of a type considered preventable by the presence of traffic control signals.

Of note, a more recent collision involving a pedestrian was recorded in February 2011. Although the motorist had no opportunity to avoid this collision and was not considered in any way at fault, this collision was of a type that might have been prevented had traffic control signals been present.

Analysis

Based on the results of the surveys undertaken along Dufferin Street, between Dundas Street West and Peel Avenue, the pedestrian crossovers are functioning relatively safely and generally as expected. Further, the number of pedestrians and vehicles crossing or entering Dufferin Street, at Bank Street/Stonehouse Crescent and/or Florence Street did not satisfy the technical criteria at this time to replace either pedestrian crossover with traffic control signals.

Staff has applied various operational scenarios in evaluating the technical requirements for the installation of traffic control signals at the intersection of Dufferin Street and Gordon Street, yet no operational scenario satisfied the installation warrants for traffic control signals.

The daily traffic volume on Dufferin Street, between Dundas Street West and Peel Avenue is comparable to traffic volumes recorded over the past 18 years on this section of the road and has not increased as a result of the elimination of the Dufferin Street jog. The typical operating speed of traffic on Dufferin Street is within a range that suggests compliance with the legal speed limit of 50 km/h is good.

Summary

Based on staff's investigation and analysis, the installation of traffic control signals at any location between Dundas Street West and Peel Avenue is not recommended at this time.

We are aware that there is strong public support for the installation of traffic control signals along Dufferin Street, between Dundas Street West and Queen Street West. If despite staff's recommendation this matter is considered further, it would be best to consider signaling a location that: facilitates the crossing needs of the area schools; would potentially consolidate vehicle egress from the residential neighbourhood west of Dufferin Street onto Dufferin Street; and facilitate safe crossing of Dufferin Street by transit users. In this case, the intersection of Dufferin Street and Gordon Street satisfies the criteria and is the most appropriate location. However, in conjunction with this, at least one of the existing pedestrian crossovers should be removed. The presence of three crossing control measures on Dufferin Street at three consecutive intersections over a 200-metre stretch of roadway is operationally problematic and raises safety concerns. Based on staff's investigation, the PXO in the off-set at the Bank Street/Stonehouse Crescent location is the most appropriate candidate to be removed.

Should City Council deem it advisable and in the best interests of the community to install traffic control signals on Dufferin Street at Gordon Street it should adopt the following alternate recommendations:

1. City Council authorize the installation of traffic control signals at the intersection of Dufferin Street and Gordon Street; and
2. City Council, contingent upon the adoption of alternate Recommendation 1, authorize removal of the pedestrian crossover on Dufferin Street at Bank Street/Stonehouse Crescent.

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SIGNATURE

Angie Antoniou,
Acting Director, Transportation Services
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LIST OF ATTACHMENTS

- (1) Drawing No. 421G-0364, dated May 2011

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