



**STAFF REPORT
ACTION REQUIRED**

Road Alterations – Coxwell Avenue and Fairford Avenue/Gerrard Street East

Date:	October 17, 2011
To:	Toronto and East York Community Council
From:	Director, Transportation Services Toronto and East York District
Wards:	Toronto-Danforth, Ward 30 Beaches-East York, Ward 32
Reference Number:	Ts2011205te.top.doc

SUMMARY

In 2009, City Council approved alterations to the intersection of Coxwell Avenue and Fairford Avenue/Gerrard Street East which included the removal of the uncontrolled two-way channel, generally as shown on the attached Drawing No. 421F-9140, dated December 2007.

After considerable consultation with the Ward Councillors and residents of the area, and a review of the pedestrian safety and walkability of the intersection by an independent consultant, a revised option for the reconfiguration of the intersection of Coxwell Avenue and Fairford Avenue/Gerard Street East has been developed.

The proposed reconfiguration of the intersection includes diverting the north leg of Fairford Avenue approximately 30 metres southerly and creating a fully signalized offset intersection with Coxwell Avenue and Gerrard Street East. This proposal will improve pedestrian safety by reducing the intersection by at least one leg. The parkette on the northwest corner of the intersection can be expanded. There may be a reduction in commuter traffic through the community to the west of Coxwell Avenue, although access and egress for residents will be maintained. While providing the positive benefits noted, the proposed 3-phase operation of the intersection will result in an increase in queues and delays for traffic and transit on both Coxwell Avenue and Gerrard Street East.

RECOMMENDATIONS

Transportation Services recommends that:

1. City Council rescind the alteration of the roadway by removing the uncontrolled two-way channel on the southwest corner of the intersection of Coxwell Avenue and Fairford Avenue, generally as shown on Drawing No. 421F-9140 dated December 2007 and attached to the report from the Director of Transportation Services of Toronto and East York District dated October 17, 2011.
2. City Council approve the alteration of the intersection of Coxwell Avenue and Fairford Avenue/Gerrard Street East, by diverting the north leg of Fairford Avenue approximately 30 metres southerly and creating a fully signalized offset intersection, generally as shown in Drawing No. 421G-0471, dated October 2011, attached to the report from the Director of Transportation Services of Toronto and East York District dated October 17, 2011, in order to achieve the design deriving pedestrian and community traffic benefits favoured by area residents and recommended by the independent transportation and safety consultant retained to assess various alternatives.
3. City Council, upon completion of the proposed reconfiguration of the intersection, prohibit right turns on a red signal from northbound Coxwell Avenue to Gerrard Street East, from southbound Coxwell Avenue to Fairford Avenue, and from eastbound Fairford Avenue to Coxwell Avenue.

Financial Impact

Preliminary cost estimates for the proposed reconfiguration of the intersection of Coxwell Avenue and Fairford Avenue/Gerrard Street East, including all civil work, utility relocations and signal modifications are in the order of \$500,000.00. The funds for this work will be requested in the 2012 Transportation Services Capital Budget under the Safety and Operational Improvement Program and construction would be subject to available funding and competing priorities. A portion of the costs related to development of the parkette on the northwest corner will be funded by Urban Design, Civic Improvements.

DECISION HISTORY

At its meeting of April 6, 2009, City Council approved the alteration of the roadway by removing the uncontrolled two-way channel on the southwest corner of the intersection of Coxwell Avenue and Fairford Avenue, generally as shown on the attached Drawing No. 421F-9140 dated December 2007 (Item TE24.74).

ISSUE BACKGROUND

When initiating the detailed design of the approved road alteration at this intersection, Transportation Services staff consulted with the Ward Councillors and residents of the area. It became apparent that residents, particularly those in the community west of Coxwell Avenue, were not in support of the approved design. In the Spring 2010, at the request of Councillor Paula Fletcher, Transportation Services conducted a pilot project

that simulated conditions at the intersection under two scenarios: the approved plan (closure of the uncontrolled two-way channel) and an optional plan (diversion of Fairford Avenue southerly, maintaining access via only the two-way channel).

Councillors Fletcher and McMahon and area residents were consulted further once the results of the pilot project were compiled, and concerns with the recommended design persisted. After a competitive process, an independent consultant was hired in Spring 2011 to conduct a pedestrian safety and walkability review of the intersection, review Transportation Services staff's work; assess alternatives; consult with residents and suggest a course of action. As a result of all of this work a revised recommended design has been developed for the intersection of Coxwell Avenue and Fairford Avenue/Gerrard Street East.

COMMENTS

Existing Conditions

Coxwell Avenue is a north/south four-lane minor arterial roadway with a daily traffic volume of approximately 15,000 vehicles. Gerrard Street East is a four-lane east/west minor arterial roadway, with a daily traffic volume of approximately 12,000 vehicles, that intersects Coxwell Avenue at two locations, approximately 300 metres apart, to form two separate intersections. The "lower branch" of Gerrard Street East connects with the west side of Coxwell Avenue to form a four-leg intersection with Eastwood Avenue on the east side. The upper branch of Gerrard Street East connects with the east side of Coxwell Avenue, with Fairford Avenue forming the west leg of the intersection. Both intersections are controlled by traffic signals. Daily traffic volumes on Eastwood Avenue and Fairford Avenue are approximately 3,500 and 5,500 vehicles, respectively. The existing design of the Coxwell Avenue and Fairford Avenue/Gerrard Street East intersection is shown in the attached Drawing No. 421G-0469 dated October 2011. The TTC operates the 22 Coxwell bus route on Coxwell Avenue and the 506 Carlton streetcar which turns at Coxwell Avenue and Gerrard Street East.

Previously Approved Intersection Design

The redesign of the Coxwell Avenue and Fairford Avenue/Gerrard Street East intersection that was approved in April of 2009 consisted of the closure of the uncontrolled two-way channel on the southwest corner of the intersection of Coxwell Avenue and Fairford Avenue.

With the implementation of these improvements, pedestrian safety would have been improved with the removal of the pedestrian crossing across an additional leg of the intersection and relocation of the northbound transit stop on Coxwell Avenue closer to the intersection. Closure of the two-way channel created an area on the southwest corner of the intersection that could be landscaped, improving the aesthetics of the area.

The through movement between Gerrard Street East and Fairford Avenue was maintained in this design. As a result there would have been minimal impacts to the level of service provided for motorists and transit service through the intersection. However, this design

did not address concerns with the amount of traffic infiltrating through the community to the west of Coxwell Avenue via Fairford Avenue.

Simulation of Intersection Changes

Transportation Services undertook a pilot project in Spring 2010 to simulate traffic conditions under two scenarios: (1) closure of Fairford Avenue with access via only the uncontrolled two-way channel; and (2) closure of the uncontrolled two-way channel as was previously approved but with a narrowing of Fairford Avenue. The objectives of the pilot project were to demonstrate visually what was being proposed, to measure impacts to the traffic patterns on local streets in the area, and to determine operational impacts to traffic and transit. Traffic barrels and barricades were used for the closures. The simulation for the closure of Fairford Avenue was in place from about March 22, 2010 to April 23, 2010 and the simulation for the closure of the two-way channel was in place from about May 3, 2010 to May 28, 2010.

The review process consisted of traffic counts undertaken before and during both scenarios at the intersections and on local roadways in the communities east and west of Coxwell Avenue. The TTC also undertook transit delay studies in the area. We also compiled comments from the public received by email and telephone, and participated in on-site meetings with residents.

Traffic Impacts associated with the closure of Fairford Avenue

Due to the constraints of the existing placement of poles and crosswalks at this intersection, only Coxwell Avenue and Gerrard Street East were included in the signalized intersection. The two-way channel on Fairford Avenue was controlled by a stop sign for eastbound traffic at Coxwell Avenue and eastbound left turns were prohibited.

There were significant traffic impacts during this stage of the pilot project. Prohibition of the eastbound left-turn movement and, by default, the eastbound through movement at the intersection, inconvenienced motorists wanting to travel north and/or east and resulted in many unsafely disobeying the prohibition. We recorded increased delays to traffic and transit on both Coxwell Avenue and upper and lower Gerrard Street East. We also observed illegal double westbound left-turns which resulted in conflicts with pedestrians in the south crosswalk, and between vehicles changing lanes to continue west on Fairford Avenue. A significant volume of traffic was diverted from local roadways west of Coxwell Avenue to local roadways east of Coxwell Avenue. The table below shows the 24-hour change in traffic volumes on these roadways:

<i>Roadways West of Coxwell Avenue</i>		<i>Roadways East of Coxwell Avenue</i>	
<i>Roadway</i>	<i>24-Hour Reduction</i>	<i>Roadway</i>	<i>24-Hour Increase</i>
Fairford Road	- 2049 vehicles	Gainsborough Road	+ 699 vehicles
Woodfield Road	- 80 vehicles	Beaton Avenue	+ 251 vehicles
Hiawatha Road	- 93 vehicles	Bowmore Road	+ 139 vehicles
Ashdale Avenue	- 201 vehicles		
Craven Road	- 479 vehicles		
Rhodes Avenue	- 18 vehicles		

We received many complaints from residents of the streets east of Coxwell Avenue that experienced increased traffic volumes, and from motorists and residents objecting to the prohibition of the eastbound left-turn movement.

Impacts associated with the closure of the uncontrolled two-way channel

During this stage of the pilot project, all existing traffic movements at the intersection of Coxwell Avenue and Gerrard Street East/Fairford Avenue were maintained, resulting in minimal impact to the level of service provided to traffic and transit. Reduction of the width of Fairford Avenue to a single lane in each direction and the elimination of the two-way channel on the southwest corner of the intersection did not significantly reduce traffic capacity. Furthermore, because of these minimal impacts at the intersection, nearby local roadways did not experience significant changes in traffic volumes. The TTC noted minimal impact on their service in the area. The few public comments received were generally positive although the volume of traffic continuing to use Fairford Avenue was noted by local residents.

Pedestrian Safety and Walkability Review and Public Consultation

In Spring 2011, after a competitive process, Hatch Mott McDonald was retained by the City of Toronto to:

- (1) Conduct a technical review of the pilot study undertaken by Transportation Services staff in 2010 for the intersection reconfiguration;
- (2) Conduct an on-site walkability and pedestrian safety assessment of the area;
- (3) Meet with the community to discuss reconfiguration options for the intersection; and
- (4) Provide an independent assessment of the reconfiguration options and recommend a preferred reconfiguration option.

As requested, the consultant assessed the area for pedestrian safety and walkability. They developed alternatives for reconfiguring the intersection and a meeting was held with the community on June 23, 2011. The Consultant's evaluation of the reconfiguration options was based on the following criteria which considered core concerns received from the public:

- "(1) Improve pedestrian safety and walkability;
- (2) Ensure the community roads perform as per their roadway classification; and

- (3) Improve the aesthetics of the intersection."

The Consultant considered the input received from the community and developed a recommended option for reconfiguring the intersection of Coxwell Avenue and Fairford Avenue/Gerrard Street East.

Recommended Option

The Consultant's recommended option is shown in Drawing No. 421G-0471 dated October 2011. This proposal includes the expansion of the parkette on the northwest corner of the intersection. The north leg of Fairford Avenue is diverted southerly and a two-way street is provided along the south leg of Fairford Avenue at the current location of the two-way channel. The south side crosswalk across Coxwell Avenue is relocated to immediately south of the south leg of Fairford Avenue, incorporating both Fairford Avenue and Gerrard Street East in a fully signalized offset intersection with Coxwell Avenue.

The following reasons were given by the consultant for this choice:

- (1) The proposal "reduces the intersection by at least one leg, ultimately making the intersection safer."
- (2) "Infiltration into Ward 30 can be reduced as commuters will no longer be able to drive straight through the intersection, but it does allow residents' access and egress from their community via Fairford Avenue."
- (3) "The surrounding roads will be able to function as per their classification."
- (4) "A three-phase light will allow for manoeuvrability at the intersection."

The consultant's report also recommended that:

- (1) Toronto Transit Commission (TTC) review the location of its bus and streetcars stops and review the location for driver exchange which occurs at the corner of Coxwell Avenue and lower Gerrard Street East.
- (2) Transportation Services review the operation of Coxwell Avenue and Gerrard Street East to ensure that they can function as arterial roadways, and review signal timing plans that are appropriate to manage the traffic and transit operations at the intersections.
- (3) Transportation Services develop a plan for signs and pavement markings for the reconfigured intersection which would identify that Gerrard Street East continues via Coxwell Avenue and includes zebra stripes to show drivers where pedestrians are crossing the street.
- (4) The Toronto District School Board develop a Transportation Demand Management Plan for the Roden Junior Public School. This school is located in the community

to the west of Coxwell Avenue and attracts motorists bringing students to the school from outside of the immediate area.

- (5) The reconfigured intersection should operate as a multi-phase protected intersection (3 or 4 signal phase operation) and should include the prohibition of right turns on a red signal for both northbound traffic turning right from Coxwell Avenue to Gerrard Street East and eastbound traffic turning right from Fairford Avenue to Coxwell Avenue, and the prohibition of parking on Fairford Avenue.

Operational Impacts of Recommended Option

The proposed operation of the intersection as a fully signalized offset with three signal phases will, to some degree, be accompanied by similar impacts as the first stage of the pilot project conducted by Transportation Services. A mitigating difference, however, is that the eastbound left-turn movement will be maintained so there will not be the inconvenience to motorists leaving the community to the west of Coxwell Avenue. Also, since the through movement between Fairford Avenue and Gerrard Street East is maintained, albeit through a left- and then right-turn movement, there may not be the same degree of diversion of traffic, from the local roads west of Coxwell Avenue, to those roads east of Coxwell Avenue. However, we do expect the following operational impacts:

- Implementation of three signal phases will result in increased queues and delays to traffic using the intersection, and may increase the wait time for pedestrians crossing Coxwell Avenue.
- TTC streetcars and bus service will experience an increase in delays resulting in reduced service levels and compromised travel schedules.
- Since all westbound vehicles approaching Coxwell Avenue on upper Gerrard Street East will be required to turn left or right, there is still a potential for double westbound left turns and the resultant conflicts between these motorists and vehicles changing lanes to access Fairford Avenue, and also between left turns and pedestrians in the south side crosswalk.

Conclusions

The development of a recommended option for the reconfiguration of the intersection of Coxwell Avenue and Fairford Avenue/Gerrard Street East has been an exhaustive process involving Transportation Services staff, the two Ward Councillors, and residents of the area. After an initial operational review, two potential configurations were tested. Extensive public consultation was done through on-site meetings and a larger community meeting. A detailed review of the pedestrian safety and walkability of the intersection, and alternatives for reconfiguring the intersection, was conducted by an independent transportation and safety consultant. The consultant's recommended option of diverting the north leg of Fairford Avenue southerly to create a fully signalized offset intersection will provide the pedestrian and community benefits favoured by area residents.

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SIGNATURE

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LIST OF ATTACHMENTS

- (1) Drawing No. 421F-9140, December 2007 – Previously Approved Proposed Intersection Redesign
- (2) Drawing No. 421G-0471, October 2011 – Proposed Fully Signalized Offset Intersection
- (3) Drawing No. 421G-0469, October 2011 – Existing Conditions
- (4) Drawing No. 421G-0468, October 2011 – Existing Traffic Controls

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