

Supplementary Report - Road Alteration – Lawrence Avenue West at Dufferin Street and Corona Street / Via Bagnato

Date: March 27, 2018

To: North York Community Council

From: Acting Director, Transportation Infrastructure Management

Wards: Ward 15 - Eglinton-Lawrence

SUMMARY

Transportation Services is requesting approval, on behalf of the Toronto Transit Commission (TTC), to alter Lawrence Avenue West from Dufferin Street to a point 70 metres (m) east of Corona Street / Via Bagnato in order to provide a transit queue jump lane designated as an extended right-turn lane, buses excepted. This change would allow TTC buses to bypass lengthy queues of westbound through vehicles extending back from the Lawrence Avenue West / Dufferin Street intersection, reducing delays and improving service reliability.

Transportation Services, City Planning, and the TTC have evaluated the benefits and impacts of the proposed queue jump lane according to established criteria in the context of both existing conditions and planned changes in the area.

This lane can be accommodated by moving the existing curb on the south side of Lawrence Avenue by up to 2.2m, reducing existing lane widths, and extending existing turn lanes. These modifications will not result in the loss of any travel lanes, as the current two eastbound and two westbound lanes will be maintained.

The implementation of the Official Plan and Lawrence Allen Secondary Plan policies may require further changes to the right of way configuration at this location as future development occurs.

As TTC operates bus service on both Lawrence Avenue West and Dufferin Street, City Council approval of this report is required.

RECOMMENDATIONS

The Acting Director, Transportation Infrastructure Management recommends that:

1. City Council approve the alteration of Lawrence Avenue West from Dufferin Street to a point 70 metres east of Corona Street / Via Bagnato, providing a westbound transit queue jump lane/right-turn lane (buses excepted), generally as shown in Attachment 1 of the report entitled "Supplementary Report - Road Alteration – Lawrence Avenue West at Dufferin Street and Corona Street / Via Bagnato", dated March 27, 2018 from the Acting Director, Transportation Infrastructure Management.
2. City Council designate the newly created westbound lane at Lawrence Avenue West and Corona Street / Via Bagnato as right-turn only, buses excepted.

FINANCIAL IMPACT

All costs associated with the alteration of Lawrence Avenue West from Dufferin Street to a point 70m east of Corona Street / Via Bagnato will be the responsibility of the TTC. Federal Public Transit Infrastructure Funds would be used to pay for 50% of the total.

DECISION HISTORY

This report addresses a new initiative.

COMMENTS

Queue-Jump Lanes

The provision of queue-jump lanes allows TTC vehicles to bypass general traffic at intersections and other locations, reducing delays and improving service reliability. It is noted that such queue jump lanes not only improve transit operations, they also reduce delays to general traffic, although they may also increase the width of the road at crosswalks and require pedestrians to walk across an additional lane when crossing the intersection where there is not already a right-turn lane.

Transportation Services, City Planning, and the TTC are undertaking a review of locations where it is operationally feasible to provide bus queue jump lanes that also serve as extended right turn lanes, and where the benefits in terms of travel time savings to transit vehicles would outweigh the impacts to other road users, including pedestrians and cyclists. The evaluation is based on a framework with quantitative and qualitative targets that was developed by Transportation Services, City Planning, and TTC staff and a consensus decision must be reached between Transportation Services, City Planning and the TTC before a new queue-jump lane location is recommended.

The intersection of Lawrence Avenue West and Dufferin Street was identified as a potential candidate for a queue-jump lane review.

Traffic modelling of the proposed westbound queue-jump lane has demonstrated that expected transit travel time savings during peak hours would reduce transit travel time by more than 20% of scheduled headway (time between buses) for the 52 Lawrence TTC bus route. The design would provide sufficient queue length and sidewalk width to accommodate pedestrian volumes. Given the existing right-turn lane, overall crossing distance will not be increased for pedestrians.

Official Plan Direction

In the Official Plan, Dufferin Street (between Eglinton Avenue West and Wilson Avenue) and Lawrence Avenue West (between Allen Road and Apex Road) are both identified as Avenues (Map 2: Urban Structure Map). The City's Official Plan encourages growth to be directed towards Avenues, which are major arterial streets that often differ in terms of lot sizes and configuration, street width, existing uses, neighbouring uses, transit service and streetscape potential.

The Lawrence-Allen area is bounded by Highway 401 to the north, Bathurst Street to the east, Lawrence Avenue West to the south and Dufferin Street to the west. Adopted by Council in 2011, the Lawrence-Allen Secondary Plan confirms the urban structure to direct where growth will occur, provides a policy context to guide growth and change, and sets the stage for revitalization by providing a comprehensive planning framework for a new community.

Policy 4.1.1, requires that the transportation system in the Secondary Plan Area be balanced for all modes of travel, including walking, cycling, transit, and driving, and will be an integrated extension of the surrounding existing and planned transportation system in the city.

Policy 4.5.1 of the Lawrence Allen Secondary Plan states that the transit system, public streets, open spaces, and development in the Secondary Plan Area should be consistent with the transit-supportive principles as listed in the Secondary Plan.

Pedestrian and bicycle infrastructure improvements in the Secondary Plan area will provide networks of direct and safe routes that connect important destinations in the Secondary Plan Area. High volumes of pedestrian and cycling activity are anticipated in this area and as such the Secondary Plan identifies that high quality facilities and amenities for pedestrians and cyclists should be provided. The Lawrence-Allen Secondary Plan (Map 32-10) identifies a concept for a "Major On-Street Bicycle Route" on Lawrence Avenue West from Bathurst Street to Dufferin Street and beyond.

Lawrence Avenue West is not currently identified as a cycling route in the City's Ten Year Cycling Network Plan. Provision for cycling facilities at this single intersection was not included in the design of the queue-jump lane. Opportunities to introduce a cycling facility and other elements of the Lawrence-Allen Secondary Plan - Public Realm Master Plan would be considered as new development occurs in the area, and may require further reconfiguration to Lawrence Avenue as future development occurs.

Existing Conditions

Both Lawrence Avenue West and Dufferin Street are major arterial roads, with two through lanes in all directions approaching the intersection. Dedicated left turn lanes are provided on all approaches and nearside bus bays/right turn lanes are provided in all directions, except in the northbound direction, which operates with a shared through/right-turn curb lane. Current lane widths in the area vary between 3.5 and 3.8m.

TTC buses travelling westbound on Lawrence Avenue West currently service a near-side stop at Corona Street / Via Bagnato from a mixed traffic curb lane. The buses then proceed in the curb lane, before transitioning into the existing nearside bus bay/right-turn lane to service the stop at Dufferin Street.

Transit service on this section of Lawrence Avenue West is provided by the 52 Lawrence West, the 59 Maple Leaf, and the 352 Lawrence West Overnight bus routes.

The 52 Lawrence West route is the busiest TTC bus route in the City, carrying nearly 44,000 customers on a typical weekday. The 52 Lawrence West bus route operates at a frequency of:

- every 3 minutes (20 buses per hour) during the morning peak period;
- every 3 minutes 15 seconds (18 buses per hour) during the day; and
- every 2 minutes 52 seconds (21 buses per hour) during the afternoon peak period.

During the afternoon peak period, westbound buses experience highly variable delays, greater than the scheduled headway of the 52 Lawrence West route. Such variability in delay at a single intersection on a route with frequent service makes the service slow and unreliable and the cumulative delay at several such intersections requires the deployment of additional buses to carry the same number of customers.

The 59 Maple Leaf bus route carries over 3,500 customers on a typical weekday and operates at a frequency of every 12 minutes (5 buses per hour) during the morning peak period and every 13 minutes 30 seconds (4 buses per hour) in the afternoon peak period.

Proposed Conditions

Widening the south side of Lawrence Avenue West by up to 2.2m and reducing lane widths generally to 3.3m for through lanes and 3.0 for turn lanes would provide sufficient room to extend the existing westbound right-turn lane at Dufferin Street back to the intersection at Corona Street / Via Bagnato. In addition, a new westbound right-turn lane is proposed at this intersection. This turn lane would be designated for right turns only, with a through movement exception provided for TTC vehicles.

The proposed alterations are shown in Attachment 1. As part of this work, the concrete sidewalk on the south side of Lawrence Avenue West would be brought to a pedestrian clearway width of 2.1 metres.

Providing the combination of the new right turn lane at Corona Street / Via Bagnato (with TTC exemption) and extending the existing right turn lane from Dufferin Street would provide a new continuous westbound lane throughout the area that would allow TTC vehicles to bypass traffic congestion, improving service reliability.

The other existing lanes would shift southward into the newly widened space in order to accommodate the new lane. This design has been developed with input from City Planning, with consideration for the boulevard zone uses on the north side of the street. The boulevard on the north side of Lawrence Avenue would not be impacted.

As all current travel lanes would be maintained, no impacts to vehicular traffic are anticipated. In addition, minor vehicular traffic improvements may be realized as servicing of TTC passengers at the nearside stop at Corona Street / Via Bagnato would now occur out of the through lanes.

Related Initiatives

City staff and the TTC are also undertaking a series of Surface Transit Operational Improvement Studies (STOIS) on key bus corridors with high ridership and documented delays or low reliability. These studies will develop recommendations to reduce delays through various measures, including modified traffic regulations, queue-jump lanes, and modified transit operating practices. A study of the entire Dufferin Street corridor is underway, which will consider the potential for northbound and southbound queue-jump lanes at Lawrence Avenue West, along with other transit priority measures.

CONTACT

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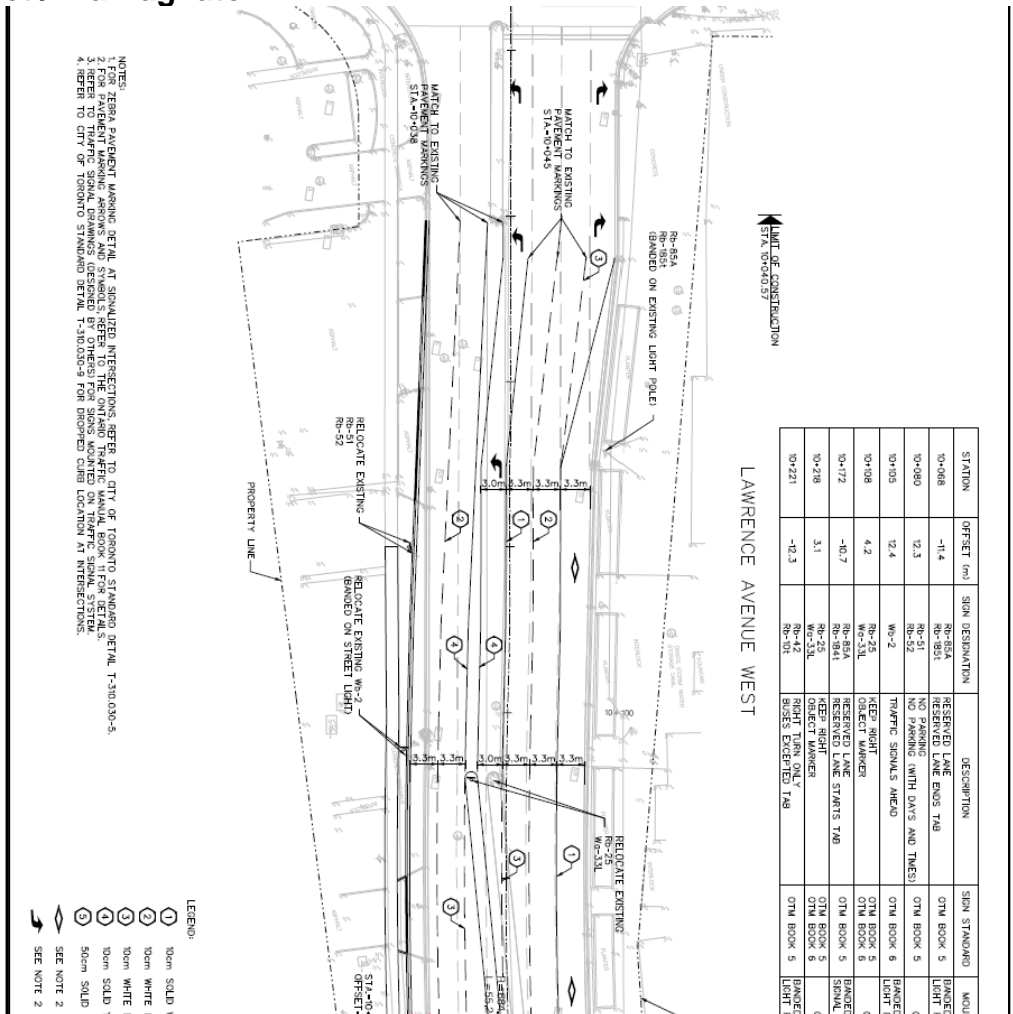
SIGNATURE

Jacquelyn Hayward Gulati
Acting Director, Transportation Infrastructure Management

ATTACHMENTS

Attachment 1 - Proposed Road Alterations - Lawrence Avenue West at Dufferin Street and Corona Street / Via Bagnato

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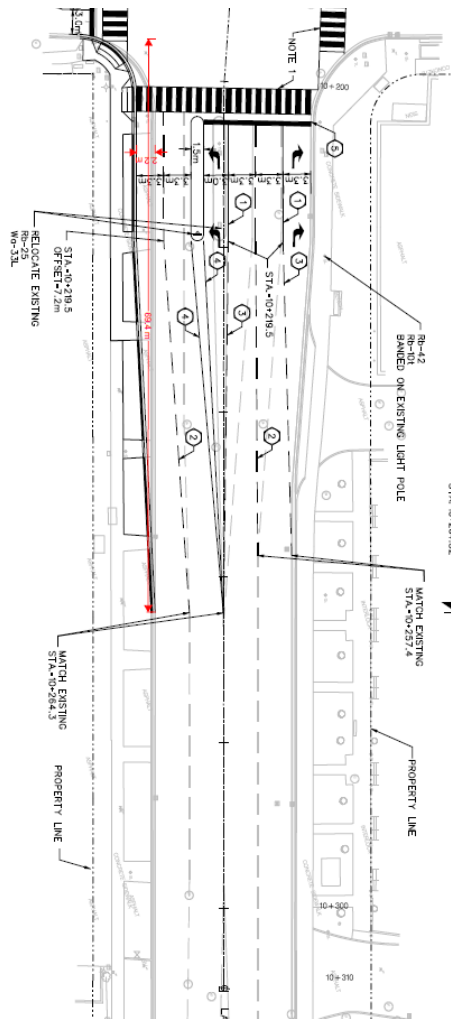
STATION	OFFSET (m)	SIGN DESIGNATION	DESCRIPTION	SIGN STANDARD	WOU
10+068	-11.4	Rb-85A Rb-51L	RESERVED LINE ENDS TMB	OTM BOOK 5	BANDE LANT
10+080	-2.3	Rb-51	NO PARKING (WITH DAYS AND TIMES)	OTM BOOK 5	LANT
10+105	2.4	Wb-2	TRAFFIC SIGNALS AHEAD	OTM BOOK 6	BANDE LANT
10+108	4.2	Rb-25 Wb-31L	KEEP RIGHT OBJECT WORKER	OTM BOOK 6	BANDE LANT
10+172	-10.7	Rb-85A Rb-84L	RESERVED LINE STARTS TMB	OTM BOOK 5	BANDE LANT
10+218	3.1	Rb-25 Wb-31L	KEEP RIGHT OBJECT WORKER	OTM BOOK 6	BANDE LANT
10+221	-12.3	Rb-42 Rb-01	RIGHT TURN ONLY BUSES EXCEPTED TMB	OTM BOOK 6	BANDE LANT

NOTES:
 1. FOR ZEBRA PAVEMENT MARKING DETAIL AT SIGNALIZED INTERSECTIONS, REFER TO CITY OF TORONTO STANDARD DETAIL T-310.030-5.
 2. FOR ZEBRA PAVEMENT MARKING DETAIL AT UNSIGNALIZED INTERSECTIONS, REFER TO CITY OF TORONTO STANDARD DETAIL T-310.030-6.
 3. REFER TO CITY OF TORONTO STANDARD DETAIL T-310.030-9 FOR DROPPED CURB LOCATION AT INTERSECTIONS.
 4. REFER TO CITY OF TORONTO STANDARD DETAIL T-310.030-9 FOR DROPPED CURB LOCATION AT INTERSECTIONS.

- LEGEND:
- ① 10cm SOLID
 - ② 10cm WHITE
 - ③ 10cm WHITE
 - ④ 10cm SOLID
 - ⑤ 50cm SOLID
- SEE NOTE 2

LAWRENCE AVENUE WEST

LIMIT OF CONSTRUCTION
STA. 0+000.00



STATION	OFFSET (m)	SIGN DESIGNATION	DESCRIPTION	SIGN STANDARD	MOD.
W-008	-11.4	Rb-52A Rb-52B Rb-52C	RESERVED LANE BIDS TAB	QTY BOOK 5	BANDED LIGHT 1
W-080	12.3	Rb-52	NO PARKING (WITH DAYS AND TIMES)	QTY BOOK 5	C
W-105	12.4	Wb-2	TRAFFIC SIGNALS AHEAD	QTY BOOK 6	BANDED LIGHT 1
W-108	4.2	Rb-35 Wb-33L	KEEP RIGHT OBJECT MARKER	QTY BOOK 6	C
W-172	-10.7	Rb-52A Rb-52B Rb-52C Wb-33L	RESERVED LANE STARTS TAB	QTY BOOK 5	BANDED LIGHT 1
W-218	3.1	Rb-42 Wb-33L	RESERVED LANE STARTS TAB OBJECT MARKER	QTY BOOK 6	C
W-221	-12.3	Rb-42 Rb-101	RIGHT TURN ONLY BIDS EXCEPTED TAB	QTY BOOK 5	BANDED LIGHT 1

- NOTES:
1. FOR ZEBRA PAVEMENT MARKING DETAIL AT SIGNALIZED INTERSECTIONS REFER TO CITY OF TORONTO STANDARD DETAIL T-310.030-5.
 2. FOR ZEBRA PAVEMENT MARKING DETAIL AT UNSIGNALIZED INTERSECTIONS REFER TO CITY OF TORONTO STANDARD DETAIL T-310.030-5.
 3. REFER TO TRAFFIC SIGNAL DRAWINGS (BY OTHERS) FOR SIGNS MOUNTED ON TRAFFIC SIGNAL SYSTEM.
 4. REFER TO CITY OF TORONTO STANDARD DETAIL T-310.030-9 FOR DROPPED CURB LOCATION AT INTERSECTIONS.

