

## **Supplementary Report: Congestion Management Plan - 2025 Update**

**Date:** April 22, 2025  
**To:** City Council  
**From:** General Manager, Transportation Services  
**Wards:** All

### **SUMMARY**

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At its meeting of April 7, 2025 of the Infrastructure and Environment Committee received a number of deputations regarding Transit Signal Priority (TSP) policies within the City and the need to ensure that the new Light Rapid Transit (LRT) such as Line 5 Eglinton and Line 6 Finch West are supported by TSP.

TSP is a technology system that alters traffic signal timings to give transit vehicles a faster path through intersections by extending 'green times'. The infrastructure to support TSP includes roadside detection for transit vehicles approaching the intersection as well as modifications to the traffic signal equipment to accept transit detections and adjust the signal timings to prioritize transit. TSP can be either Conditional or Unconditional: Unconditional TSP, which always grants priority to transit vehicles, and Conditional TSP, which grants priority based on specific criteria, such as schedule adherence.

Transportation Services has always supported the implementation of TSP within the City to improve the reliability and efficiency of the operation of TTC streetcars and buses, and it is a critical component of the Congestion Management Plan. To date there are 420 transit signal priority locations in the City with over 80 installed over the past two years. All of the City's current TSP locations are 'unconditional' in their operation.

Regarding the use of TSP on the new Light Rapid Transit (LRT) lines in the City, Transportation Services and Transit Expansion Office staff have worked very closely over the years with both Metrolinx and their consortia building the new transit lines to ensure that the City's policies and practices that support TSP are incorporated as requirements within their projects.

The application of TSP for the new LRT lines is different than traditional streetcar and bus operations. Given the higher speeds that LRT trains travel and the frequency of LRTs traversing the line, Conditional TSP can enable better schedule adherence and help reduce vehicle bunching. The other key reason for implementing Conditional TSP

along the LRT lines is the need to support public safety and transit flow both along the LRT corridor as well as on the north-south connection points. Given the high volume of riders transferring to and from the LRT from connecting buses, Conditional TSP better supports safe transfers for transit passengers. For these reasons, and in consultation with the City and TTC the Metrolinx consortia are implementing Conditional TSP on Line 5 Eglinton and Line 6 Finch West.

This supplemental report provides more details with regards to TSP in Toronto and specific details around the proposed plans for TSP on Line 5 and Line 6.

## **RECOMMENDATIONS**

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The General Manager, Transportation Services recommends that:

1. City Council receive this report for information.

## **FINANCIAL IMPACT**

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There are no financial implications with respect to this report.

## **DECISION HISTORY**

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City Council, at its meeting of November 25, 2020, adopted the Move TO 2021-25 - Congestion Management Interim Action Plan and Non-Competitive Contract for Smart Signals Report.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.IE17.6>

## **COMMENTS**

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### **Transit Signal Priority in Toronto**

Transit signal priority (TSP) is a technology that modifies traffic signals to provide extended green time to help TTC streetcars and buses move more reliably on routes by minimizing instances whereby they get stopped at a red light. This technology has been adopted in Toronto since the mid-1990s, and to date, approximately 420 signalized intersections operate with TSP, primarily along busy streetcar and bus routes.

In 2020, as part of the Congestion Management Plan, the City and TTC accelerated the investigation and implementation of TSP across the network to improve speed and reliability for customers. Based on the current surface transit network, the TTC and City teams have identified approximately 380 additional locations where TSP upgrades to

signals would be beneficial for transit speed and reliability, resulting in approximately 800 TSP intersections at full build out. The current program resources, between the City of Toronto and TTC, enable staff to upgrade approximately 50 locations per year.

In addition to building out the TSP system, Transportation Services and the TTC are implementing updated technology to detect transit vehicles and provide signal priority for transit. This updated technology will replace the early installations which rely on in-pavement detectors that do not provide as much operational flexibility and can also be impacted by construction projects. Currently, of the 420 existing TSP locations, approximately 100 are not currently operational because of construction impacts.

There are two priority strategies related to TSP operations:

- Unconditional - where transit is always given extended green times; or,
- Conditional - whereby transit priority is only given under certain circumstances for example if the transit vehicle is running late and behind schedule or if the headway between buses is not being maintained and there is a need to control 'bunching' which also creates delays and inefficiencies to transit operations.

All of the City's current TSP serving streetcars and buses are Unconditional in their operation.

### **TSP on Line 5 Eglinton and Line 6 Finch West**

Line 5 Eglinton and Line 6 Finch are being delivered by Metrolinx, and as specified in the project agreements between Metrolinx and its constructors, TSP has been installed at all intersections on the at-grade sections of Line 5 and Line 6. Specifically, TSP is installed on the Line 5 surface segment on Eglinton Avenue from east of Laird Station to Kennedy Station; and on Line 6, TSP is installed on the surface segment between Humber College and Finch West Station.

The LRT lines implement Conditional TSP whereby priority is only given when vehicles are behind schedule to help schedule adherence and maintain service reliability. The amount of extension provided varies by time of day based on the available time that can be taken from other movements. Conditional TSP on the LRT lines achieves the following:

- helps maintain schedule adherence LRT operations and helps minimize bunching on the transit lines;
- maintains safety for pedestrians, ensuring that there is sufficient opportunity to allow pedestrians to safely cross the street and board transit; and,
- balances coordination between both east-west and north south transit transfers which will allow customers to safely transfer between bus routes and the LRTs.

The responsibility of TSP design and commissioning currently rests with Metrolinx until Line 5 and 6 are completed. Once the two lines are complete, and hand-over of the new lines has occurred, the City of Toronto Transportation Services and the TTC will continue to refine TSP strategies through the Train Operating Funding Agreement and Train Operating Services Agreement, including looking at any appropriate opportunity for unconditional TSP, to provide customers with fast and reliable service on the new LRT lines.

## **CONTACT**

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## **SIGNATURE**

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