

Congestion Management Plan – Update

Date: October 24, 2019

To: Infrastructure and Environment Committee

From: General Manager, Transportation Services

Wards: All

SUMMARY

The purpose of this report is to provide a status update for projects being undertaken as part of the Congestion Management Plan (the 'CMP'). The City of Toronto's CMP objectives are to better manage congestion (e.g. reduce delays and the number of stops) and improve safety through innovations in policy, operations and technology that will maximize the efficiency, reliability and sustainability of the road network for all users while reducing the impacts on the environment.

The overall vision of the CMP is: Through innovation and technology maximize the safety, efficiency, reliability and sustainability of the transportation network for all users while reducing the impact on the environment.

To accomplish this vision, the CMP is comprised of a series of projects to be completed over a multi-year period (currently scheduled 2016-2020), covering nine key focus areas. As part of the program mandate, City Council has directed the General Manager, Transportation Services, to report back to the Infrastructure and Environment Committee on the status of the CMP on a regular basis.

This report provides a status overview for the various projects within the Congestion Management Plan. Attachment 1 summarizes these projects and their planned completion dates. Attachment 2 provides an overview of Congestion Management Plan accomplishments that have been delivered since the start of the program in 2014 (inclusive of those completed in the review period).

It should be noted that the projects described in this report do not represent the total number of projects within the CMP, as there are a number of projects that are not scheduled to start until future years (i.e. 2020 and 2021).

RECOMMENDATIONS

The General Manager, Transportation Services recommends that:

1. The Infrastructure and Environment Committee receive this report for information.

FINANCIAL IMPACT

There are no financial implications resulting from adoption of the recommendation contained in this report.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting of December 16-18, 2013, City Council endorsed in principle a five-year Congestion Management Plan (CMP) to manage congestion in the City of Toronto.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.PW27.12>

At its meeting of April 9, 2014, Public Works and Infrastructure Committee requested the Deputy City Manager, Cluster B, to report to the Public Works and Infrastructure Committee on an annual basis on the research projects undertaken using the authority under Schedule A of the Financial Control By-law.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.PW30.6>

At its meeting of January 6, 2015, Public Works and Infrastructure Committee received a CMP Status Update and directed the General Manager, Transportation Services, to (a) provide regular CMP updates, (b) report back on opportunities to share information between the Transportation Operations Centre and similar operations centres amongst the City's operational partners, and (c) report back on how to best measure the overall impact of the Congestion Management Plan.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW1.4>

At its meeting of June 17, 2015, Public Works and Infrastructure Committee received a CMP Status Update for Q2 2015.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW6.4>

At its meeting of City Council on November 3-4, 2015, City Council endorsed in principle the updated Congestion Management Plan (2016-2020) and directed the General Manager, Transportation Services, to report back to the Public Works and Infrastructure Committee semi-annually on the Congestion Management Plan.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW8.1>

At its meeting of June 20, 2016, Public Works and Infrastructure Committee received a CMP Status Update for Q1 2016.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PW14.6>

At its meeting of November 14, 2017, Public Works and Infrastructure Committee received a CMP Status Update for Q3 2017.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PW25.3>

At its meeting of July 10, 2018, Public Works and Infrastructure Committee received a CMP Status Update for Q1 2018.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.PW31.3>

COMMENTS

The City of Toronto continues to see significant growth, increased development adjacent to the public right-of-way and unprecedented investment in our infrastructure - all of which have placed increased demands on our road network and result in increased congestion.

To address these issues, the Congestion Management Plan (2016-2020) is comprised of a series of projects to be completed over a multi-year period (currently scheduled 2016-2020). Attachment 1 to this report provides a CMP Status Table for the Q2 2018 to Q2 2019 review period that illustrates:

- projects that have been completed in the review period;
- projects that were awarded or were underway during the review period;
- projects that were in procurement as of the end of the review period; and
- projects that are in development as of the end of the review period.

These projects have been prioritized according to divisional priorities and budget availability, and are scheduled to be completed per the timelines described herein. This does not represent the total number of projects within the CMP, as the City has already completed a significant number of projects (see Attachment 2) and there are a number of projects that are not scheduled to start until future years.

Projects Completed in the Review Period (Q2 2018 to Q2 2019)

In this category, the following provides the project completions and accomplishments for Q2 2018 through to Q2 2019:

Traffic Signal Timing Updates and Coordination

- The updating and coordination of traffic signal timings along 13 routes at 281 intersections was completed in Q2 2018. The updated corridors are along St. Clair Avenue East, Kingston Road, Birchmount Road, Brimley Road, Midland Avenue, Carlingview Drive, Renforth Drive, Dixon Road, Scarlett Road, Laird Drive, Millwood Road, Pape Avenue, Mount Pleasant Road, Bloor Street, Dufferin Street, William R Allen Road, Carlton Street, College Street, and Finch Avenue.

- The updating and coordination of traffic signal timings along 10 routes at 208 intersections was completed in Q1 2019. The updated corridors are along Jane Street, Highway 27, Evans Avenue, Burnhamthorpe Road, Neilson Road, Port Union Road, St. Clair Avenue West, Pharmacy Avenue, Caledonia Road, Davenport Road, and Church Street. See Attachment 3 for a map of corridors that were retimed between Q2 2018 and Q1 2019.

Advanced Traffic Management System

- The City of Toronto's Advanced Traffic Management System (ATMS) went "live". This now allows the City of Toronto's Transportation Operations Centre (TOC) to better manage traffic conditions, implement traffic management strategies, and communicate traveller information to road users.

Smart Work Zone Trailer Pilot

- An 'internal pilot' to test the effectiveness of the new 'Smart Work Zone' trailer, (i.e. a mobile trailer equipped with a camera, travel-time sensors and a variable message sign) which are deployed in construction areas to mitigate effects of the construction was completed in Q1 2019. The trailer was deployed along Jarvis from July 16th 2018 to January 16th 2019. The results of this pilot will help to develop policy and procedures to enable the deployment of this equipment on a broader scale.

Illuminated Blank-Out Signs

- Installation of Illuminated (LED Blank-Out) signs supporting turn restrictions to help drivers to recognize active turning restrictions, thereby improving bylaw compliance and traffic flow. 14 of these signs were deployed at 4 critical intersections to support the King Street Transit Priority Project.

Resilience Projects

As Toronto faces greater threats and stresses due to the impact of climate change, we must integrate resilience into our operations and infrastructure. The Congestion Management Plan includes several such resilience measures, such as:

- The City's latest Uninterruptible Power Supply (UPS) deployment contract involved installing back-up power supplies at 28 signalized intersections, bringing the city-wide total to 75 intersections, to ensure the traffic signals remain operational in the event of a power outage. The contract included two years of maintenance for these units. This maintenance period was concluded in Q4 2018.
- A detailed design of a system to better manage traffic on the Bayview Avenue Extension (and adjacent streets) during Lower Don River flooding events, and during planned and emergency closures of the Don Valley Parkway. This 'Lower Don Traffic Management System' will allow the City to open and close these roads earlier, better monitor and manage the area (including adjacent roadways), and provide detour signing for redirected traffic. The design contract was awarded in Q4 2017, and the final report was completed in Q2 2019. Construction is anticipated to start during Q4 2019.
- A Threat and Risk Assessment (TRA) for the City's traffic systems and related infrastructure. This assessment identified the risks facing the City's traffic systems,

the related infrastructure and operational / maintenance processes, and recommended appropriate levels of protection from these risks. These recommendations will be considered as part of the Congestion Management Plan 2021-2025, to ensure these systems and infrastructure are safe and protected from viruses, cyberattacks, loss of communication, or interruptions. The Threat and Risk Assessment project was awarded in Q2 2018 and was completed in Q2 2019.

Active Projects at the End of the Review Period (end of Q2 2019)

In this category, the following provides the project status for projects that were active at the end of the review period (end of Q2 2019):

Installing Video Traffic Counting Systems

- To enhance the quality of data collected for assessing the performance of projects such as the King Street Transit Priority Corridor, the City acquired and installed 32 video traffic counting systems. These systems were closely observed by City staff to confirm their effectiveness and quality. Final acceptance of this equipment is expected by Q3 2019.

Traffic Agents

- Following the City's successful pilot of 'traffic assistive personnel' in Q3/Q4 2016, the City has since been implementing a full-time Traffic Agents Program using Paid Duty Officers provided by Toronto Police Service. This program will be transitioned to provide Special Constables employed by Transportation Services in December, 2019. The Toronto Police Service Board approved the recommendation for the City to apply for Special Constables in [October 2018](#) and in July 2019, a Memorandum of Understanding was approved. The City is currently waiting for final approval from the Solicitor General. Transportation Services is concurrently hiring and training staff in preparation for the December launch of the program.

Smart Traffic Signal Studies

- A deployment of two different traffic adaptive systems ("smart signals") in two study areas at a total of 22 intersections was completed in Q4 2018. An evaluation of the performance of these piloted technologies is underway. A report documenting the evaluation is expected by Q4 2019. The evaluation will identify the benefits and constraints (if any) of each system, and will be the basis for negotiating prices through a subsequent bidding process.

Traffic Data Contract Extension

- Transportation Services' agreement with HERE Technologies for the provision of commercially-available, real-time and historical traffic data was extended to Q1 2020. This agreement provides the City's Big Data Innovation Team with traffic information and analytical tools leading to a greater understanding of traffic conditions across the City's road network. The contract to acquire this data dates from Q2 2017 and included optional contract extension years.

Advanced Traffic Management System

- As part of the live operation of the City of Toronto's Advanced Traffic Management System (ATMS), Traffic Management Centre staff are undertaking regular testing of

its functionality to spot minor deficiencies in the system before giving final acceptance and payment. This operation will continue until Q4 2019.

Inspection of Traffic Infrastructure Installations

- A contract to complete inspections related to civil and electrical field installation work launched in Q2 2019. Two successful bidders were selected to expand the City's inspection of our traffic infrastructure builds, thereby improving the quality and longevity of the work delivered. The contract is expected to be complete by Q4 2019, with the option of extending it to Q4 2020.

Automated Vehicles

- In anticipation of the introduction of automated vehicles, the City has established an Interdivisional Working Group on Automated Vehicles to investigate and plan for what is expected to be a disruptive technology. The CMP supports a portion of the automated vehicle research and planning efforts conducted by Transportation Services. In this review period, the CMP funded research and development of the draft Automated Vehicles Tactical Plan that was included in the reports, "Preparing for Automated Vehicles" adopted by City Council at its meeting of January 31-February 1, 2018 and the "Automated Vehicle Tactical Plan 2019-2021", adopted by Infrastructure and Environment Committee on October 17, 2019. The CMP also funded the first phase of community stakeholder consultation on the Tactical Plan - a series of full-day workshops with road safety, accessibility, mobility, professional driver and other groups.

Traffic Monitoring

- The installation of 16 additional CCTV traffic monitoring cameras will be completed by Q4 2019. These cameras will support traffic monitoring and management duties during the Gardiner Expressway deck rehabilitation.

Quick Towing Pilot

- Traffic congestion caused by illegally parked and unattended vehicles can be dangerous and frustrating for everyone, especially during peak travel periods. To reduce the impacts of illegally parked and unattended vehicles, Transportation Services and Toronto Police Services are working collaboratively to conduct a pilot project along Queen Street that will see the towing and relocation of illegally parked vehicles to nearby streets during the afternoon rush hour.

State of Good Repair

- Transportation Services staff are consistently upgrading and replacing field equipment and devices (i.e. communication links, traffic signal controllers, timers, variable message sign modems, cameras) in order to meet operational needs and ensure a "state of good repair" for our traffic systems, making this important work an ongoing active project throughout the CMP implementation period. ,

Projects in Procurement at the End of the Review Period (end of Q2 2019)

The following provides the status of projects that were in procurement, and are about to be awarded at the end of the review period (end of Q2 2019):

Lower Don Traffic Management System

- The City completed the bidding process to build the Lower Don Traffic Management System (LDTMS), a program to deploy field equipment in the Lower Don River area to warn road users of flood events along Bayview Avenue. The LDTMS will close some access points using automated gates, and will save operating costs by allowing these functions to be managed / triggered remotely. This will reduce the number of vehicles trapped in the flooded areas, thereby improving safety and reducing the number of damage claims against the City. The next steps for this project are the approval from Bid Award Panel and the execution of the contract. Construction is expected to start during Q4 2019.

Development of Back-Up Power Supplies

- An RFP to retain consulting services for the development of new uninterruptible back-up power supply installation specifications was released in Q2 2019. The evaluation of proposals, execution of contract, and start of the project is expected in Q4 2019.

Projects in Development at the End of the Review Period (end of Q2 2019)

The following provides the status for projects that are currently being readied for procurement, or that are currently being completed in-house:

Open Traffic Data

- The City is working on Open Data Portal access to the City's real-time traffic signal control timings. This open data portal provides traffic data related to intersection inventory and real-time status updates about traffic signal timing information. This will allow the City to be more responsive to industry demands for this data set, and will facilitate new and emerging innovative technologies aimed at reducing congestion and improving safety. Users will be able to access the portal via the City's Open Data platform to obtain an inventory of traffic signal intersections and subscribe to real-time status updates. An RFP to retain a consultant was issued in Q3 2019. It is anticipated that the contract will start by Q4 2019 with completion expected by Q4 2020.

Variable Message Sign Replacements

- The City is preparing an RFP to retain consulting services for the detailed design of 'variable message' signs to replace legacy equipment. This assignment will include the review and assessment of existing supporting structures to determine if these can be reused. The assignment is expected to be released in Q4 2019. Completion of the detailed design is expected by Q4 2020.

Traffic Operations Centre Backup Facility

- The City is developing a consulting assignment to develop a conceptual design and feasibility study for a 'Transportation Operations Centre backup facility'. The related RFP call was released in Q3 2018. Project completion is anticipated in Q2 2020.

Illuminated Blank-out Signs

- Illuminated LED (Blank-out) signs supporting time-of-day turn prohibitions help drivers to recognize active turn restrictions, thereby improving by-law compliance and traffic flow. A contract is in preparation to install 44 illuminated time-of-day turn restriction signs at 12 signalized intersections. It is anticipated that the contract will start by Q4 2019 and be completed by Q1 2020.

Emergency Vehicle Pre-Emption Strategy

- Transportation Services is working with Toronto Fire Services and Toronto Paramedic Services on a new Emergency Vehicle Pre-Emption (EVP) Strategy which will explore alternative ways of moving emergency vehicles through congested areas in a safe manner. A consulting assignment was released in Q3 2019 to support the development of this strategy. It is anticipated that the project will start by Q4 2019 and be completed by Q3 2020.

Procedures for Installation of Traffic-Monitoring Cameras

- Traffic Management section staff is developing standard operation procedures (SOP) to support the installation of closed circuit television (CCTV) cameras for traffic monitoring. The SOP will document and clarify the roles and responsibilities of the units and groups within the Traffic Management section that are involved in the planning and design, procurement, installation, and operation and maintenance of CCTV cameras. Completion is expected by Q2 2020.

CMP Update for 2021-2025

The City of Toronto is currently updating the existing Congestion Management Plan (CMP) for the period of 2021 to 2025. To assist in the development of this update, Transportation Services is:

- Hosting workshops with internal and external stakeholders to understand what current CMP initiatives should continue, what obstacles needs to be cleared, and what other actions can be implemented in managing congestion;
- Reviewing City strategic documents to identify opportunities;
- Reviewing recent publications and papers to identify innovative ideas and industry trends; and
- Reaching out to cities and government agencies to understand their more recent actions to mitigate congestion and obtain lessons learned.

In developing the updated Congestion Management Plan for the 2021-2025 period, Transportation Services is putting special emphasis on the following:

- Alignment with updated Transportation Services strategic goals;
- Moving people rather than just vehicles;
- Active Traffic Management;
- Construction Impact Mitigation;
- Travel Demand Management;
- Network reliability;
- Better assessment of all road users' needs; and

- Measuring performance/success (KPIs).

The updated CMP (2021-2025) will be submitted to Council in Q1 2020.

Summary

In the current status reporting period (Q2 2018 to Q2 2019, inclusive), there was:

- A total of eight (8) projects completed;
- A total of ten (10) projects active at the end of the review period;
- A total of two (2) projects in procurement at the end of the review period; and
- A total of six (6) projects in development (being prepared for procurement) at the end of the review period;
- An ongoing project to update the Congestion Management Plan for the years 2021 to 2025.

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SIGNATURE

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ATTACHMENTS

Attachment 1 – CMP Status Table (Q2 2018 – Q2 2019)
Attachment 2 – Congestion Management Plan Accomplishments To-Date
Attachment 3 – Traffic Signal Coordination Map Q2 2018 - Q1 2019