



## STAFF REPORT ACTION REQUIRED

### Downtown Transportation Operations Study – Interim Progress Report

<b>Date:</b>	March 21, 2013
<b>To:</b>	Public Works and Infrastructure Committee
<b>From:</b>	General Manager, Transportation Services
<b>Wards:</b>	Trinity-Spadina, Ward 20; Toronto Centre-Rosedale, Wards 27 and 28
<b>Reference Number:</b>	P:\2013\Clusterb\TRA\TMC\pw13002tmc (AFS No. 17260)

#### SUMMARY

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The Downtown Transportation Operations Study (DTOS) has been initiated for the area bounded by: Lake Shore Boulevard/Harbour Street, to the south; Queen Street East/West, to the north; Jarvis Street, to the east; and Bathurst Street, to the west.

This report outlines the progress of the study tasks to date and identifies a number of operational improvements that have been recently implemented and those that can be implemented in the near term that will optimize the use and capacity of the existing transportation infrastructure.

The study is scheduled to be completed by October, 2013, with the final report on the study findings and recommendations to be submitted to the November meeting of the Public Works and Infrastructure Committee.

#### RECOMMENDATIONS

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**The General Manager of Transportation Services recommends that:**

1. The Public Works and Infrastructure Committee receive this report for information.

#### FINANCIAL IMPACT

The costs associated with the implementation of the Near Term Enhancements identified within the report are estimated to be \$70,000.00 and are included in the Transportation Services Division's 2013 Operating Budget.

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

## **DECISION HISTORY**

City Council, at its meeting of July 12, 13 and 14, 2011, in considering Item PW5.1 – "Bikeway Network, 2011 Update", among other things, directed staff to report to the September 2011 meeting of Public Works and Infrastructure Committee (PW&I) on a Terms of Reference for an overall transportation operations study in the downtown area.

Public Works and Infrastructure Committee, at its meeting of August 30, 2011, recommended to City Council that the Terms of Reference for an overall transportation operations study in the downtown area be approved.

City Council, at its meeting of September 21 and 22, 2011, adopted the report (Works Committee Report PW7.9) dated August 30, 2011 entitled, "Downtown Transportation Operations Study – Terms of Reference" and the following recommendations, with amendments:

1. City Council authorize the General Manager, Transportation Services, to develop and issue a Request For Proposals along the parameters set out in the report (August 30, 2011) from the General Manager, Transportation Services, for consulting services to undertake a Downtown Transportation Operations Study in the area bounded by: Lake Shore Boulevard/Harbour Street, to the south; Queen Street East/West, to the north; Jarvis Street, to the east; and Bathurst Street, to the west, and Dundas Street between University Avenue and Yonge Street.
2. City Council request the General Manager, Transportation Services to report to the Public Works and Infrastructure Committee, as applicable during the course of the study, on measures that can be implemented and have been identified as part of the Downtown Transportation Operations Study as short term enhancements that will optimize the use and capacity of the existing infrastructure.
3. City Council amend the Terms of Reference for the Downtown Transportation Operations Study by revising the fifth bullet on page 6 of the report (August 30, 2011) from the General Manager, Transportation Services, under the heading "Key factors", so that it reads "Cycling and pedestrian demands and safety".
4. City Council request that the General Manager, Transportation Services, as part of the Downtown Transportation Operations Study, review the pedestrian scramble intersection at Dundas Street and Yonge Street.
5. City Council direct the General Manager, Transportation Services, in the review of the 'pedestrian scramble,' to include and incorporate public consultation with individuals, groups and institutions that will be directly affected by any changes, including, but not

limited to:

- a. the local Councillor;
  - b. local resident and ratepayer associations;
  - c. business associations, including BIAs;
  - d. hospitals;
  - e. Ryerson University and its Student Union;
  - f. the Yonge-Dundas Square Board of Management;
  - g. any other City resident; and
  - h. the Toronto Transit Commission.
6. City Council request the Toronto Police Services Board to request the Chief of Police to ensure that the existing parking/stopping restrictions are diligently enforced on major arterial roads where rush hour parking/stopping restrictions are now causing traffic congestion.

## **ISSUE BACKGROUND**

Transportation Services staff have initiated a study of downtown transportation operations. The purpose of the study is to identify and address congestion and traffic operations issues in downtown Toronto, and develop a process to assess the numerous transportation initiatives currently underway. This process will highlight operational-level, short and medium-term solutions that will provide safe and effective transportation in the downtown.

The approved study area (see Appendix A – Study Area Map) for the DTOS generally consists of Lake Shore Boulevard/Harbour Street to the south, Bathurst Street to the west, Queen Street East/West to the north and Jarvis Street to the east.

The consultant retained to conduct the study (IBI Group) has been working through the study design process and has completed a number of the study tasks, which were identified in the study design.

## **COMMENTS**

This report identifies measures that can be implemented in the near term to optimize the use and capacity of the existing infrastructure, and provides an update on the study tasks that have been completed to date and outlines future tasks to be completed.

## **Study Design**

The first task completed as part of the DTOS was to refine the study design (i.e., finalized the study approach and the associate work plan). As a result of the study design effort, the following work plan was established:

- Task 1 Study Design;
- Task 2 Existing Conditions Assessment;
- Task 3 Future Conditions Assessment;
- Task 4 Development of a Project Evaluation Framework;
- Task 5 Generation of Plans/Projects/Proposals;
- Task 6 Evaluation of Plans/Projects/Proposals;
- Task 7 Project Prioritization and Action Plan;
- Task 8 Consultation; and
- Task 9 Documentation and Reporting.

Although it is identified in the work plan as Task 8, consultation is an integral part of many of the study tasks, and it will be conducted throughout the duration of the study.

### **Timing**

The DTOS is currently scheduled for completion in October 2013. This document represents a scheduled interim report on study progress.

### **Study Progress**

In addition to finalizing the study design, study team efforts to date have been focused on Tasks 2, 3, and 8. The following provides a brief synopsis of the work that has been undertaken in assessing existing and future conditions, and consulting with various stakeholders and the public.

## **EXISTING CONDITIONS ASSESSMENT**

The objective of the existing conditions assessment is to analyse the existing transportation operations and the level of congestion in downtown Toronto within the proposed study area.

The existing conditions assessment scope includes the following tasks:

- a) Defining what is considered to be a transportation operations “problem”;
- b) Identifying where and why problems regularly occur;
- c) Developing qualitative and quantitative measures of each problem; and
- d) Determining what would be considered as a success in addressing each problem.

## Problem Definition and Identification

As development intensifies, traffic volumes increase, and travel patterns evolve, travel to, from, and within the downtown becomes more challenging. One of the more obvious symptoms of these changes is congestion. Congestion is a collective term used to describe the increasing level of conflict, friction, and delay experienced by all road users (i.e., pedestrians, cyclists, transit riders, and motorists). Addressing congestion-causing issues is the primary focus of this study.

Within the context of the DTOS, the study team has identified eight leading causes of congestion in the study area. These are described in Table No. 1 below.

The eight causes of congestion described below have been used to form the framework for problem identification, and the degree to which operational issues contribute to the subject causes of congestion. Issues which were previously identified through discussions with City staff have also been linked back to the causes, including the 13 problem locations and issues that were identified in the study terms of reference. This is being used as the starting point for the assessment of existing conditions.

**TABLE No. 1: Leading Causes of Congestion**

No.	Cause	Description Detail	Sample Location(s)
1	F.G. Gardiner Expressway capacity constraints	Queuing and excessive delays on access routes to the Gardiner, especially on Spadina Ave., but also on Bay St. and Jarvis St. The queuing also results in intersection blockages for east-west traffic.	<ul style="list-style-type: none"> <li>- Spadina Ave, Lake Shore Blvd. and Gardiner Expressway ramps intersection (configuration, volume);</li> <li>- York St., Bay St., Yonge St. Gardiner ramp removals (per EA); and</li> <li>- Bay St. to Gardiner Eastbound ramp removal (per EA).</li> </ul>
2	Illegal lane and road occupancies	Creation of “bottlenecks” from lane occupancies as a result of illegal parking and loading/unloading activity, and maintenance/construction activities without a permit.	<ul style="list-style-type: none"> <li>- Union Station (Vehicular access, pick-up/drop-off, taxi operations).</li> </ul>
3	Legal lane and road occupancies (permits, by-laws)	Creation of “bottlenecks” from lane occupancies for parking, loading/unloading activity, hoarding for building construction, maintenance activities etc.	<ul style="list-style-type: none"> <li>- Bay St. clearway (bus and taxi lane operations).</li> </ul>
4	Sub-optimal traffic signal timings	Inefficient use of available capacity due to a lack of signal coordination and out-of-date signal timings.	<ul style="list-style-type: none"> <li>- Soho St., Peter St. and Queen St. (offset intersections); and</li> <li>- Yonge St./Dundas St. intersection (pedestrian scramble).</li> </ul>
5	Transit/Vehicle Mix with Competition for Space and Time	Passenger loading/unloading times, location of transit stops, and signal operations providing priority to transit vehicles.	<ul style="list-style-type: none"> <li>- King St. (streetcar operations and priority lane effectiveness), Queen St. (streetcar operations).</li> </ul>
6	Intersection	Delays due to left-turns from a shared	<ul style="list-style-type: none"> <li>- Bay St./Front St. intersection</li> </ul>

	operations	lane, intersection blockages, and vehicle-pedestrian conflicts.	(pedestrian volume); - York St./Front St. intersection (geometry, pedestrian volume); and - Yonge St./Harbour St. intersection (geometry, pedestrian volume).
7	Road operations	Lane configurations which may not provide optimal operations.	- Simcoe St. (one-way operation, intersection proximity to University Ave.).
8	Non-recurring and special events	Reduced road space availability, disruptions, and special traffic patterns caused by: - Collisions and breakdowns; - Road and lane closures to accommodate special events and festivals; - Sporting and cultural activities.	- Variable.

In order to expand upon the understanding of problem locations and issues, an inventory of transportation operations data was compiled, and stakeholder consultations were conducted.

The following sections present the data inventory and analysis, and summarize the findings of the consultations that have been conducted to date.

### Data Collection and Analysis

The study team collected data to build an understanding of the existing transportation operations within the study area. A high-level summary of the data collected and how the data was used is presented below:

**Network Data** – Information about the existing transportation network was compiled from various City and external sources, and overlaid onto maps of the study area. The maps contain various layers displaying information such as approximate link volumes, road classifications, and traffic signal control types.

**Cordon Counts** – Cordon count data from around the Greater Toronto Area (GTA) was used to determine the inbound and outbound traffic patterns for the City of Toronto downtown cordon between 2001 and 2011.

**Traffic Investigations** – City of Toronto traffic investigations data for completed service requests across the three study area wards for the 2011 and 2012 calendar years were reviewed to provide insight into the most commonly reported types of transportation issues.

**By-laws** – City of Toronto by-law data detailing locations of No Standing, No Parking, and No Stopping zones, and turning movement prohibitions within the study area. There are currently over 400 such prohibitions, which impact surface transportation.

**Policies/Practices Governing Road Occupancies and Curbside Activities** – City of Toronto guidelines that govern road occupancy and curbside activity practices.

In addition to the above, data collection and analysis related to the review of the "pedestrian scramble" at the intersection of Yonge Street and Dundas Street is also being conducted.

## **Consultation**

IBI Group, in consultation with City staff, developed a consultation plan to obtain the input of relevant stakeholders and the general public. The consultation plan consists of the following three components:

### **i) Stakeholder Interviews**

For the purposes of this study, a stakeholder is defined as an entity whose operations are directly influenced by transportation within the downtown core.

Stakeholders are interviewed with the following three objectives: inform them about the study and what it entails, determine what they believe are “hot spot” issues and determine what a successful study means to them.

Based on the interview findings to-date, the most commonly raised "cause of congestion" categories was Legal Lane and Road Occupancies and Road Operations. The Sub-Optimal Traffic Signal Timings and Non-Recurring and Special Events were the least commonly raised issues.

The following list provides common themes and issues raised throughout the stakeholder interviews:

- a) Study area should be extended; some solutions required implementation at a region wide level.
- b) All modes of travel should be considered (vehicles, pedestrians, transit, cycling, coach, etc.).
- c) Major issues identified include: Gardiner on-ramp spillback, King/Queen intersection blockages, Bay Street Clearway, Yonge/Dundas pedestrian scramble, prohibition violations and curb side operations.
- d) Increased traffic violation enforcement through additional resources and clear enforcement route recommendations supported.
- e) Mixed views regarding one-way streets.
- f) Several stakeholders supported the Complete Networks idea; all modes of travel are served but not on every street. Streets are allocated to specific modes for example: King St./Queen St. serves pedestrians and transit while Adelaide St./Richmond St. serves vehicles.

- g) Transit Signal Priority supported however successful implementation is a challenge.
- h) No stopping, standing, parking and turning movement prohibitions create a conflict with transportation service providers such as coaches and taxis. These prohibitions attempt to increase traffic flows however they make providing high levels of service for transportation service providers more difficult.

A number of stakeholder interviews have yet to be completed with stakeholders such as Toronto Emergency Medical Services, Toronto Region Board of Trade, and the Canadian Courier and Logistics Association, to name a few.

## **ii) Drop-In Center**

The drop-in center is scheduled to take place on Wednesday, March 27th, 2013, in the Metro Hall Rotunda. It will be a one-day event running from 12:00PM until 9:30PM. The purpose of the event will be to introduce the DTOS to the public, allow the public to identify transportation-related issues within the study area, answer questions about the study and the types of actions that may result from its undertaking, as well as solicit what success means to them. The drop-in centre will also serve as a launch event for the online component of the public consultation. A media release will have been conducted one week prior to the commencement of the drop-in centre to advise the public of the drop-in centre and to broadcast the study initiative.

## **iii) Online Consultation**

A controlled online public survey is scheduled to be launched with the drop-in center on March 27th, 2013. The purpose of the survey is to provide the public with an additional opportunity to the drop-in-center to voice their concerns regarding transportation issues within the downtown core.

The online consultation will be conducted in two streams: 1) a web-based survey that focuses on downtown travel behaviours and transportation issues at a high level; and 2) a map-based tool that allows users to identify specific transportation issues, categorized according to the eight leading causes of congestion, by location.

The survey consists of eight questions comprised of a combination of multiple choice and ranking. No personal information is collected through the survey, with the exception of whether respondents live/work within or outside of the study area. The goal of presenting the survey in this format is to broaden the reach of the public consultation, and to engage downtown residents, as well as those who live outside of the study area, but travel downtown regularly.

It is anticipated that the online consultation will continue for two weeks following the drop-in centre. However, depending on the rate of responses, the window of opportunity may be expanded. When the online consultation is complete the results will be used to help expand the



understanding of existing conditions (i.e., road user behaviours and transportation operations issues within the downtown).

#### **iv) Postcard Distribution**

Postcards with information about the study, the drop-in centre as well as links to the website, including the survey will be distributed at key locations within the downtown, such as Union Station and the PATH Systems. The postcard will be distributed to pedestrians, transit riders, cyclists, and motorists.

## **Near Term Operational Enhancements**

Transportation Services staff have already implemented a number of operational improvements in the area of the downtown core within the past few months. All of these improvements are enhancements to the transportation system which have benefited traffic flow and have served to reduce congestion levels.

The specific improvements that have been implemented and their associated operational benefits are as follows:

- **Richmond-Adelaide Traffic Control Signal Co-ordination Review:** This involved the optimization of the traffic control signal timings on Richmond Street and Adelaide Street between Parliament Street and Bathurst Street. This operational enhancement has improved traffic control signal co-ordination along the Richmond Street and Adelaide Street corridor, which has reduced travel time and delay, and fuel consumption. It has also reduced the occurrences of queue spillover at the Adelaide St./University Ave. and Richmond St./York St. intersections. Other benefits of the signal timing optimisation include improved pedestrian crossing safety as modifications were made to the minimum pedestrian crossing times.
- **Incident Management Protocols and Interventions:** Often the impacts of incidents that occur on the F.G. Gardiner Expressway "spillover" into the downtown area result in increased congestion. To address these impacts, the hours of work for Transportation Services staff were adjusted so that staff would be available to make signal timing adjustments in the morning and afternoon peak periods. This change in operation provides for real time adjustment of traffic signal timings to reduce the impact in the downtown area.
- **Targeted Police Enforcement:** This involves the targeted enforcement initiatives which have been initiated by the Toronto Police Service to provide improved enforcement response to traffic incidents and stopping violation activities along targeted areas within

the downtown core, specifically the Richmond-Adelaide corridor. The benefits of this initiative have reduced delay and congestion along targeted corridors.

In addition to the operational enhancements noted above, as directed by City Council, at its meeting of September 21 and 22, 2011, a number of candidate measures have been identified that have the potential to be implemented in the near term as enhancements to optimize the use and capacity of the existing transportation infrastructure.

These measures, which are outlined in Table No. 2 below, are recommended for consideration to be implemented within the next 4-5 months. They are considered to be generally feasible from an operational benefit perspective and can be implemented relatively quickly.

The estimated costs for the enhancements is \$70,000.00 and can be accommodated within Transportation Services approved 2013 Operating Budget.

**Table No. 2: Near Term Operational Enhancements**

No.	Initiatives	Detail	Operational Benefit
1	<b>Sign and Pavement Marking Refresh</b>	Replace worn signs and refresh all pavement markings within the study area. This includes the installation of new Zebra markings at select signalized intersections.	Improved sign legibility and positive guidance will minimize driver confusion and improve decision making. Refreshed and new Zebra markings will assist to minimize intersection blockage.
2	<b>Simcoe Street One-way to Two-way Conversion</b>	Front Street to Richmond Street – Convert Simcoe Street to two-way operation.	Improves routing options and network versatility.
3	<b>Adelaide Street Operational Improvements</b>	York Street to Yonge Street – Focus on Sheppard Street intersection area. Increased enforcement should be implemented.	Improves traffic movement in this bottleneck, quick assessment of signal timings etc.
4	<b>Traffic Cameras Pilot Project</b>	Implement traffic cameras at key locations. Choose locations where signal timing changes could be downloaded.	Would provide a more dynamic and timely response to changes in traffic conditions that may be required to better balance traffic flows.
5	<b>Street Occupancy Review Blitz</b>	Create a small task force to perform a quick review of all existing street occupancies. Confirm that setup is appropriate and necessary, and determine if duration is still necessary. Work with Police on enforcement.	Improve traffic movement and safety.
6	<b>On Street Stopping/Standing/ Parking Enforcement Blitz</b>	Create and publicize an enforcement blitz. Pair it with a media campaign.	Would encourage better behaviour by drivers and reduce curb lane blockage, double parking etc..

7	<b>“Steer It, Clear It”</b>	Implement campaign on Gardiner/Lake Shore corridor to have motorists involved in property damage only collisions remove their vehicles from major roadways if they are driveable.	Improved roadway safety and reduced traffic delays due to incidents.
8	<b>Downtown Operations Committee</b>	Joint committee (City Staff & Toronto Police) that meets monthly to identify programs, pilot projects etc.	The committee will identify opportunities and implementation to reduce congestion (improve traffic flow)
9	<b>Courier Management</b>	City staff and members from various Courier Companies such as Fed Ex, UPS, etc. to conduct a pilot project to manage curb side locations and hours for deliveries.	To improve traffic flow by controlling the lanes that are occupied by couriers by time of day.

Of the nine potential near term enhancements presented above, there are four strategies that should be implemented as soon as possible (next 2-3 months):

- i. Signs and Pavement Marking Program;
- ii. Street Occupancy Review Blitz;
- iii. On-Street Stopping/Standing/Parking Enforcement Blitz; and
- iv. Courier Delivery Pilot.

## Next Steps

Based on the study work plan (see Appendix B – Study Schedule) and the work that has been conducted to date, next steps include the following:

- a) Continued stakeholder and public consultation
- b) Further assessment of future conditions;
- c) Development of a project evaluation framework;
- d) Generation of plans/projects/proposals to improve transportation operations;
- e) Evaluation of those plans/projects/proposals;
- f) Development of a project prioritization action plan, including financial implications; and
- g) Study documentation and reporting.

The final study report is scheduled to be presented to the Public Works and Infrastructure Committee at its meeting scheduled for November 20, 2013.

## CONTACTS

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## SIGNATURE

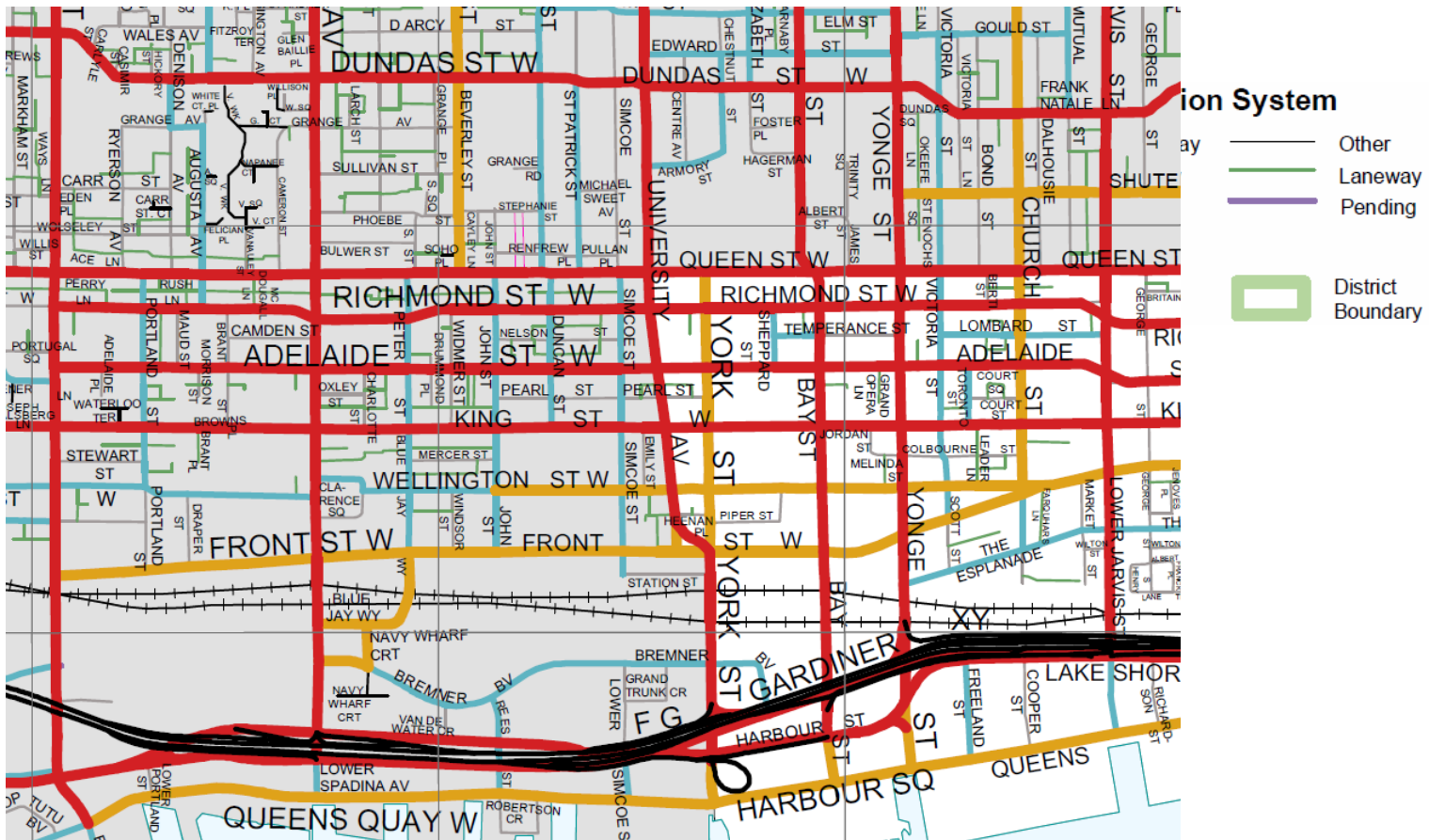
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Stephen Buckley, General Manager  
Transportation Services Division

## ATTACHMENTS

Appendix A – Study Area Map  
Appendix B – Study Schedule

# APPENDIX A Study Area



# Appendix B Study Schedule

				Downtown Toronto Operations Study - Schedule																						
ID	Task Name	Duration	Start	Finish	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December							
					9/30	10/21	11/11	12/2	12/23	1/13	2/3	2/24	3/17	4/7	4/28	5/19	6/9	6/30	7/21	8/11	9/1	9/22	10/13	11/3	11/24	
1	1. Study Design	46 days	Mon 11/5/12	Mon 1/7/13																						
2	2. Existing Conditions	42 days	Mon 12/3/12	Tue 1/29/13																						
3	3. Future Conditions	35 days	Tue 1/1/13	Mon 2/18/13																						
4	4. Project Evaluation Framework	43 days	Tue 1/1/13	Thu 2/28/13																						
5	5. Generation of Plans/Projects/Proposals	20 days	Mon 2/4/13	Fri 3/1/13																						
10	6. Evaluation of Plans/Projects/Proposals	55 days	Mon 3/4/13	Fri 5/17/13																						
15	7. Prioritization and Action Plan	40 days	Mon 5/6/13	Fri 6/28/13																						
16	8. Consultation	145 days	Mon 1/7/13	Fri 7/26/13																						
17	Interim Report and Presentation to Public Works Committee	1 day	Wed 5/15/13	Wed 5/15/13																						
18	Draft Final Report	45 days	Mon 7/1/13	Fri 8/30/13																						
19	Final Report	20 days	Mon 9/2/13	Fri 9/27/13																						
20	Presentation to Public Works Committee	1 day	Wed 11/20/13	Wed 11/20/13																						
21																										
22																										
23																										

Project: STP_Project_Schedule_N Date: Fri 1/11/13	<b>Task</b> Split Milestone Summary	Project Summary External Tasks External Milestone Inactive Task	Inactive Milestone Inactive Summary Manual Task Duration-only	Manual Summary Rollup Manual Summary Start-only Finish-only	Deadline Progress 
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