



Subway Closures – 2018 Review and 2019 Forecast

Date: April 11, 2019
To: TTC Board
From: Deputy Chief Executive Officer - Operations

Summary

The purpose of this report is to provide a summary of the 2018 subway closure program, including accomplishments and initiatives implemented to improve service during closures and to present the proposed schedule for 2019.

Recommendations

It is recommended that the TTC Board:

1. Endorse the 2019 subway closure plan and direct staff to report on changes; and
2. Forward this report to the General Manager, Transportation Services, City of Toronto for information.

Financial Summary

Funding is included in the 2019 Capital Budget, primarily within the Automatic Train Control (ATC) project and various State of Good Repair projects for associated subway closure costs.

As outlined in a report to the TTC Board in November 2013, under the Metrolinx-City of Toronto-TTC Master Agreement, costs associated with any closures for Eglinton Crosstown are to be funded by Metrolinx.

Closure costs are variable and dependent on duration and distance of the closure and the complexity of the work. The cost for each closure is attributed to the operating costs for buses, advertising and staffing, including operators, contracted customer service support staff, TTC staff to supervise the closure, paid duty officers and parking enforcement.

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

Equity/Accessibility Matters

Subway closures tend to result in route diversions and other temporary changes to our transit services. These changes may potentially impact access to our services for various TTC customers including families, people with disabilities and seniors.

In order to minimize this impact, the TTC provides:

- Scheduled Wheel-Trans vehicles to assist customers to reach an accessible subway station
- Accessible buses with kneeling features and ramps that display route destination signs and display automated audible and visual next stop announcement

In addition, the TTC provides timely notification of subway closures and temporary and extended service disruptions/delays to its customers via:

- Audible and visual displays on video screens on subway platforms and stations
- Website postings at [Service Advisories](#), on [Twitter @TTCnotices](#) and [Facebook](#)
- Email to customers who registered to [My TTC e-Alerts](#)
- [mywheel-trans.ttc.ca](#) updated with subway closures information when booking a trip
- Accessible transit stops are marked with blue International Symbol of Access
- TTC station names are clearly marked on all subway platforms
- Elevator and escalator crews are stationed at end terminals to ensure all accessible equipment is functional
- Escalator and elevator disruption information is posted on our website at [Elevators and escalators planned maintenance](#), and by calling: 416-539-5438 (LIFT), TTY 416-338-0357, or by e-mail at: [My TTC e-Alerts](#) (elevators-only).

The TTC continues to work to provide a barrier-free transit system, in support of the Accessibility for Ontarians with Disabilities Act's (AODA) goal of an accessible Ontario by 2025.

https://www.ttc.ca/TTC_Accessibility/Accessible_Transit_Services_Plan/Accessible_Service_Transit_Plan_2016/Financial%20Summary.jsp

Decision History

At its meeting on November 18, 2013, the TTC Board received a report that provided an overview of the Metrolinx Eglinton Crosstown Light Rail Transit Project and summary of the Metrolinx-City of Toronto-TTC Master Agreement. The Master Agreement includes a provision that all costs associated with any closures for Eglinton Crosstown are to be absorbed by Metrolinx.

[Yonge-Eglinton and Eglinton West Interchange Stations – Metrolinx Eglinton Crosstown Light Rail Transit Project – Preliminary Concept Design Approvals](https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2013/November_18/Reports/Yonge-Eglinton_and_E.pdf)

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At its meeting on August 19, 2014, the Board received a report that explained the need for and purpose of subway closures.

[Explanation of Subway Closures](https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2014/August_19/Reports/Explanation_of_Subway_Closures.pdf)

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At meetings on January 18, 2017 and November 13, 2017 staff made presentations to the TTC Board on subway closures.

[Presentation: Subway Closures - 2016 Year In Review and 2017 Forecast](https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2017/January_18/Reports/10_Presentation%20Subway%20Closures%20%202016%20Year%20in%20Review%20and%20201.pdf)

(https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2017/January_18/Reports/10_Presentation%20Subway%20Closures%20%202016%20Year%20in%20Review%20and%20201.pdf)

[Subway Closures – 2017 Year in Review and 2018 Forecast](https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2017/November_13/Reports/10_Subway_Closures_2017_Year_in_Review_and_2018_Forecast.pdf)

(https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2017/November_13/Reports/10_Subway_Closures_2017_Year_in_Review_and_2018_Forecast.pdf)

Issue Background

The TTC is committed to providing safe, reliable and efficient service. In order to do so, the TTC performs regular inspections and repairs to its infrastructure nightly at the end of subway service.

Currently, the subway system opens at 6 a.m., 6 days a week and at 8 a.m. on Sundays, with a closing time between 2 a.m. and 3 a.m. These operating hours result in a small window of opportunity to carry out required maintenance work. On weeknights and Saturdays, TTC staff have an approximate three-hour time frame for work and from Saturday night into Sunday morning, a five-hour time frame is available. Further, because the nature of the work requires TTC staff to set up work zones and move equipment into the work area, typically less than two hours of work can be achieved each night.

The TTC currently utilizes four types of closures. These include:

Weeknight Early Closure: a section of the line is closed early, at 11 p.m. on weeknights, Monday to Thursday. This approach was tried in the fall of 2018 and will be used in 2019.

One Day Weekend Closure: a section of the line is closed for one day from end of service the previous night to start of service the following morning.

Full Weekend Closure: a section of the line is closed for two days from end of service Friday night to start of service on Monday morning. One full weekend closure is equivalent to five weeks of night work.

One Day Late Opening: a section of the line is closed, usually on a Sunday, for approximately four hours and regular scheduled service begins after 12 p.m.

Two major projects currently progressing on Line 1 Yonge-University - ATC Re-signalling project and the Eglinton Crosstown project. These make up the majority of the full weekend closures as the complexity of these projects do not allow for work to be conducted during the regular nightly maintenance window.

Additionally, based on the TTC's ridership data, there are fewer customers travelling on weekends than during the week and therefore full weekend subway closures minimize disruption to the customers.

All subway closures are extensively planned and coordinated to have as little impact on our customers as possible. During the subway closures, the TTC provides various alternate services by:

- Operating shuttle buses along the affected portion of the subway line and servicing closed stations
- Increasing service on existing routes affected by the subway closure
- Modifying traffic signals to give priority to the shuttle buses, minimizing traffic congestion and improving shuttle bus efficiency
- Using Run-as-Directed (RAD) and construction buses along routes impacted by subway closures and surface construction projects (including Eglinton Crosstown construction)
- Employing Toronto Police Paid Duty Officers to assist shuttle buses through busy intersections, and Toronto Parking Enforcement Officers to enforce parking restrictions along the shuttle route
- Staffing stations and shuttle bus stops with supervisory staff and customer service representatives to provide customer information and respond to the needs of customers
- Communicating to customers in advance of, and during, all closures through signage, announcements, and the media.

It is important to note, however, that no shuttle service can ever fully replace subway service.

In 2018, the TTC planned and executed full weekend closures, single day closures, and late openings, as outlined below.

Comments

2018 Closure Accomplishments

In 2018, there were 54 planned closures. 23 full weekend closures, three single day closures and six late openings. However, 22 closures - 16 full weekend closures, two single day closures and four late openings were cancelled. These cancellations were a result of the Eglinton Crosstown project being ahead of schedule and therefore no longer needing the number of closures they initially anticipated, and a lack of TTC resources available for state-of-good repair work, given the limitations with employee overtime.

Last fall, we tried a new closure concept where a segment of the subway line was closed early, at approximately 11 p.m. on weeknights, Monday to Thursday. This trial was conducted October 29 – November 1, between Sheppard West and St Clair West stations and again on November 5 – 8, between Spadina and St Andrew stations. These early weeknight closures were successful as they allowed for the extension of the typical maintenance window which allowed for additional work and repairs to be completed, while minimizing customer inconvenience.

In an effort to address the limitations of union overtime and the high labour costs associated with closures and events, the TTC hired additional bus operators and introduced new bus crews in the fall of 2018. These dedicated crews eliminate the need for overtime and as a result have reduced the overall cost of subway closures.

The subway closures facilitated work on all four lines. A significant amount of work was carried out on Line 1 to support the ATC project as noted below.

Line 1

- Successfully completed the following for the Line 1 ATC project:
 - Installed 829 components of trackside ATC equipment including signals, train radio antennas, beacons, axle counter sensors, and junction boxes.
 - Installed 28,000m of cable tray and 3,000m of in-ground cable trough.
 - Installed 87,000m of copper cable and 15,000m of fiber optics cable.
 - Installed 62 equipment racks and completed over 10,000 wire terminations.
 - Completed an intensive test program, including more than 20 mainline test procedures, which could not be done during normal night shifts.
 - Completed trial operations with operators, subway supervisors and yard control staff.
- Commissioned ATC milestones to enable the Wilson Yard North Hostler and the South Hostler, allowing continuous automatic operation from Vaughan Metropolitan Centre to Dupont stations
- Replaced more than 915m of rail at various locations where the rail was heavily worn and approaching its end of life

- New installation of Sheppard West Double Slip Switch to facilitate the mainline connection to the North Hostler

Line 2

- Replaced switch points, stock rails and frogs as well as switch plates on the Islington Double Cross Over and Spadina S55 which prolonged the life of the special track work
- Major maintenance and removal of expansion and insulated joints, improving reliability of signal system
- Replaced more than 1067m of rail at various locations where the rail was heavily worn and approaching its end of life

Line 3

- Replaced 762m of power rail and 153m of grout pads
- Changed Generation ½ to Generation 3 which improved reliability of the power rail and reduced arcing at the line and wear/tear of the collector shoes
- Major maintenance on two turn outs

Line 4

- Performed complex maintenance of track switches for improving reliability

2019 Subway Closure Forecast

In 2019, the TTC will use full weekend and single day closures, early weeknight closures as well as late Sunday openings to enable the ATC project, Eglinton Crosstown work and various state-of-good-repair work to progress. Early weeknight closures will only be used from March to June and September to November to limit disruptions during the summer months.

The following closures are proposed for 2019 but are subject to change:

31 Full Weekend Closures

Line ① 27

Line ② 3

Line ③ 1

6 Single Day Closures

Line ① 2

Line ② 2

Line ③ 2

8 Late Sunday Openings

Line ① 2

Line ② 6

28 Early Weeknight Closures

Line ① 21

Line ② 7

Contact

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Signature

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Attachments

Attachment 1 - 2019 Subway Closures Forecast

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Full Weekend Closures

Date	Project	Line	Description	From	To
January 12-13, 2019	ATC	①	St George Cutover Switch	St Clair West	Union
February 2-3, 2019	ATC	①	St George Cutover Switch	St Clair West	Union
February 9-10, 2019	ECLRT	①	Eglinton CTS Construction	St Clair	Lawrence
February 23-24, 2019	ATC	①	SIT13 Software Testing	St Clair West	Union
March 16-17, 2019	ATC	①	P3B St Andrew Cutover	St George	King
March 30-31, 2019	ATC	①	P3A SAT5 Testing	St Clair West	Union
April 13-14, 2019	ATC	①	P3B Union XO	Bloor	Osgoode
April 27-28, 2019	TTC SOGR	②	High rail replacement	Kennedy	Victoria Park
May 11-12, 2019	ATC	①	3A Revenue Service	St Clair West	Union
May 25-26, 2019	ATC	①	P3C Bloor-College XO	St Clair	Union
June 8-9, 2019	ATC	①	P3C Bloor-College XO	St Clair	Bloor/ Union
June 22-23 2019	TTC SOGR	③	Power Rail maintenance	Kennedy	McCowan
July 6-7, 2019	ECLRT	①	SIT13 Testing	St Clair	Lawrence
July 13-14, 2019	SOGR/ECLRT*	①	Lawrence DXO 1/4	St Clair	Sheppard
July 20-21, 2019	ECLRT	①	CTS Construction	St Clair	Sheppard
July 27-28, 2019	SOGR/ECLRT*	①	Lawrence DXO 2/4	St Clair	Sheppard
August 10-11, 2019	ATC	①	SAT5 Testing	St George	King
August 24-25, 2019	SOGR/ECLRT*	①	Lawrence DXO 3/4	St Clair	Sheppard
September 7-8, 2019	ECLRT	①	P4 Construction	St Clair	Lawrence
September 14-15, 2019	SOGR/ECLRT*	①	Lawrence DXO 4/4	St Clair	York Mills
September 21-22, 2019	ECLRT	①	CTS Construction	St Clair	Lawrence
September 28-29, 2019	ATC	①	P3B Bloor-College XO	St Clair	Union
October 12-13, 2019	SOGR/ECE	②	PEV Surfacing alignment	St George	Greenwood
October 19-20, 2019	ECLRT	①	P4/5 Construction	St Clair	Lawrence
October 26-27, 2019	ATC	①	P4/5 Construction	Lawrence	Bloor
November 2-3, 2019	SOGR	②	Keele DXO	Jane	Ossington
November 9-10, 2019	ATC	①	P4/5 Construction	St George	King
November 23-24, 2019	ECE	①	Asbestos Removal	St George	St Andrew
Nov. 30-Dec. 1, 2019	ATC/ECLRT*	①	P4/5 Construction	Lawrence	Bloor
December 7-8, 2019	ECE	①	Asbestos Removal	St George	St Andrew
December 14-15, 2019	ECE	①	Asbestos Removal	St George	St Andrew

*segment expanded to share with TTC work

Attachment 1 – 2019 Subway Closures Forecast

Single Day Closures

Date	Project	Line	Description	From	To
March 23, 2019	TTC SOGR	❶	Rail replacement	St Clair	Lawrence
April 6, 2019	ATC	❶	P4 CBTC Construction	St Clair	Lawrence
May 4, 2019	TTC SOGR	❷	C61 Byng Curve	Kennedy	Victoria Park
August 17, 2019	TTC SOGR	❸	Rail replacement	Kennedy	McCowan
September 22, 2019	TTC SOGR	❸	Rail replacement	Kennedy	McCowan
November 16, 2019	TTC SOGR	❷	Track Surfacing	Kennedy	Victoria Park

Late Sunday Opening

Date	Project	Line	Description	From	To
January 20, 2019	TTC SOGR	❶	Low rail Yonge-Front	Bloor	Osgoode
April 7, 2019	TTC SOGR	❷	PEV Beam Replacement	Broadview	St George
June 2, 2019	TTC SOGR	❷	PEV Beam Replacement	Broadview	St George
July 7, 2019	TTC SOGR	❷	PEV Beam Replacement	Broadview	St George
July 14, 2019	TTC SOGR	❷	PEV Beam Replacement	Broadview	St George
July 28, 2019	TTC SOGR	❷	PEV Beam Replacement	Broadview	St George
August 18, 2019	ECE	❶	Helicopter lift	Sheppard West	Wilson
August 25, 2019	TTC SOGR	❷	PEV Beam Replacement	Broadview	St George

Attachment 1 – 2019 Subway Closures Forecast

Early Weeknight Closure

Date	Project	Line		From	To
March 4-7, 2019	ATC	❶	Testing and Construction	St Clair West	Union
March 10-13, 2019	TTC SOGR	❶	Track maintenance	Finch	Lawrence
March 18-21, 2019	ATC	❶	Testing and Construction	St Clair West	Union
March 25-28, 2019	ATC	❶	Testing and Construction	Bloor	St. Andrew
April 1-4, 2019	TTC SOGR	❶	Track maintenance	St Clair West	Union
April 15-18, 2019	TTC SOGR	❶	Track maintenance	Wilson	St Clair West
April 22-25, 2019	ATC	❶	Testing and Construction	Bloor	St. Andrew
May 6-9, 2019	TTC SOGR	❶	Track maintenance	Eglinton	Bloor
May 13-16, 2019	TTC SOGR	❶	Track maintenance	Eglinton	Bloor
May 21-23, 2019	TTC SOGR	❶	Track maintenance	Eglinton	Bloor
May 27-30, 2019	TTC SOGR	❶	Track maintenance	Eglinton	Bloor
June 3-6 , 2019	TTC SOGR	❶	Track maintenance	Wilson	St Clair W
June 10-13, 2019	TTC SOGR	❶	Track maintenance	Lawrence W	St Clair W
June 17-20, 2019	ATC	❶	Testing and Construction	Bloor	Union
June 24-27, 2019	ATC	❶	Testing and Construction	Bloor	Union
September 3-5, 2019	TTC SOGR	❶	Track maintenance	Finch	Eglinton
September 9-12, 2019	TTC SOGR	❶	Track maintenance	York Mills	Eglinton
September 16-19, 2019	ATC	❶	Testing and Construction	Bloor	Eglinton
September 23-26, 2019	TTC SOGR	❶	Track maintenance	Bloor	St Andrew
Sept. 30-Oct. 3, 2019	TTC SOGR	❷	Track maintenance	St George	Greenwood
October 7-10, 2019	ATC	❶	Testing and Construction	Bloor	Eglinton
October 15-17, 2019	TTC SOGR	❷	Track maintenance	St George	Greenwood
October 21-24, 2019	TTC SOGR	❷	Track maintenance	St George	Greenwood
October 28-31, 2019	ATC	❶	Testing and Construction	Eglinton	Bloor
November 4-7, 2019	TTC SOGR	❷	Track maintenance	St George	Greenwood
November 11-14, 2019	TTC SOGR	❷	Track maintenance	St George	Greenwood
November 18-21, 2019	TTC SOGR	❷	Track maintenance	Kennedy	Victoria Park
November 25-28, 2019	TTC SOGR	❷	Track maintenance	Islington	Kipling