



Capacity Improvements on Bus and Subway Services

Date: May 8, 2018
To: TTC Board
From: Chief Customer Officer

Summary

On February 12, 2018 Mayor Tory and TTC Chair Colle announced a Ten-Point Action Plan to help add capacity across the network and reduce overcrowding. As a result of this plan, and previous requests regarding capacity improvements from the Mayor, Commissioners Mihevc and Fragedakis and Chair Colle between May 2017-February 2018, City Council approved funding of \$3 million in added subsidy to address overcrowding on bus routes; and to take actions consistent with the Ten-Point Action Plan. In addition, the TTC utilized \$2.0 million in 2018 base operating funding to further enhance reliability and capacity through a series of initiatives to address capacity and provide additional staffing to ensure redundancy to respond to emergencies.

This report presents the following four capacity improvements that can be implemented in the short-term, starting in the fall of 2018, to address crowding on Line 1 and on busy bus routes:

1. Improve service reliability on Line 1
2. Relieve peak crowding on bus routes
3. Relieve off-peak crowding on bus routes
4. Implement new express bus services

These capacity improvements will be made on Line 1 and 34 bus routes, and will improve the predictability and consistency of service, reduce wait times and crowding and enhance the transit network for customers. The capacity improvements will benefit up to 90 million customer trips per year and are estimated to attract approximately 848,000 new customer trips in 2019, and 1.1 million new customer trips per year when ridership fully matures in 2021.

The capacity improvements will require \$5 million in operating costs in 2018 and \$15.5 million in operating costs to annualize the service in 2019. The capacity improvements are expected to attract 848,000 customer-trips in 2019, which will generate \$2 million in revenue. Therefore, the net operating cost is \$13.5 million in 2019. Of this amount, \$3 million was provided during the 2018 budget process and a further \$2 million has been reallocated within the 2018 budget. This results in a net annualization subsidy requirement of \$8.5 million in 2019.

The capacity improvements will help to advance one of the pillars of the TTC’s corporate plan to “move more customers more reliably,” by ensuring we provide service that is more reliable, fast, frequent, affordable and equitable.

Recommendations

It is recommended that the TTC Board:

1. Approve the following four capacity improvements to be implemented in the fall of 2018, starting in September:
 - a. improve service reliability on Line 1
 - b. relieve peak crowding on 20 bus routes
 - c. relieve off-peak crowding on 14 bus routes
 - d. implement 7 new express services in the peak periods on a trial basis
2. Direct TTC staff to include the required costs to annualize this service in the 2019 TTC Operating Budget, currently estimated at \$10.5 million gross with an \$8.5 million net impact on subsidy after accounting for \$2 million in incremental passenger revenue.
3. Increase the TTC conventional service 2018 approved complement of 14,423 by 84 positions to support and deliver capacity improvement initiatives, resulting in an amended 2018 approved complement of 14,507.
4. Forward this report to City Budget Committee, City of Toronto’s Planning and Transportation Services, Financial Services departments and Metrolinx.

Financial Summary

The four capacity improvements to address crowding on Line 1 and on some bus routes are shown in **Table 1**.

Table 1: 2019 Additional Operating Subsidy Requirement (in 2018\$)

	Operating Cost	New Ridership	New Revenue	Net Cost
1. improve service reliability on Line 1	\$2.4M	0	\$0.0	\$2.4M
2. relieve peak crowding on bus routes	\$3.8M	214,000	\$0.5M	\$3.3M
3. relieve off-peak crowding on bus routes	\$2.5M	113,000	\$0.3M	\$2.2M
4. implement new express bus services	\$6.8M	521,000	\$1.2M	\$5.6M
Total	\$15.5	848,000	\$2.0M	\$13.5M

	Operating Cost	New Ridership	New Revenue	Net Cost
2018 Funding (New Subsidy & Through Reallocation)				-\$5.0M
Grand Total				\$8.5M

The capacity improvements will require \$5 million in operating costs in 2018 and \$15.5 million in operating costs to annualize the service in 2019. The capacity improvements are expected to attract 848,000 customer-trips in 2019, which will generate \$2 million in revenue. Therefore, the net operating cost is \$13.5 million in 2019. Of this amount, \$3 million was provided during the 2018 budget process and a further \$2 million has been reallocated within the 2018 budget. This results in a net annualization subsidy requirement of \$8.5 million in 2019 as shown in **Table 1**. This will result in an increase in the TTC conventional service 2018 approved complement of 14,423 by 84 positions to support and deliver capacity improvement initiatives, resulting in an amended 2018 approved complement of 14,507 as shown in **Table 7**.

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

Equity/Accessibility Matters

The TTC has made significant progress in moving towards providing barrier-free, accessible transit services to all customers. All TTC bus services are operated using accessible, low-floor buses. The new low-floor accessible streetcars are being deployed and all routes will have accessible streetcars by 2019. All subway stations will become accessible by 2025.

This report recommends service and capacity improvements on Line 1 and on some bus routes. The capacity improvements encourages and support more-spontaneous trip-making, which is an important part of making the conventional system attractive to potential new customers, such as Wheel-Trans customers taking Family of Services trips, and to all travellers in Toronto. These improvements support the Accessibility for Ontarians with Disabilities Act (AODA) objectives of more-spontaneous travel options for customers with disabilities.

The capacity improvements support the City's Poverty Reduction Strategy of making transit more accessible and attractive to everyone. As seen in **Figure 7**, the capacity improvements are dispersed across the city ensuring that new services are implemented in the City's Neighbourhood Improvement Areas and neighbourhoods with low average household incomes.

Overall, the capacity improvements offer an equitable, accessible, convenient and affordable alternative to driving, and will provide increased access to employment, educational and cultural opportunities for a greater number of customers who depend on TTC as their primary means of travel.

Decision History

At its June 15, 2017 meeting, the TTC Board approved the Express Bus Network Study.

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2017/June 15/Reports/6 Express Bus Network Study combined.pdf](http://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2017/June%2015/Reports/6%20Express%20Bus%20Network%20Study%20combined.pdf)

In response to a request from the City Budget Committee at its December 18, 2017 meeting, the TTC on January 12, 2018 provided briefing notes addressing:

1. Current status of overcrowding on bus routes
2. Adequacy of bus fleet and garages to address overcrowding and accommodate modest ridership growth

<https://www.toronto.ca/legdocs/mmis/2018/bu/bgrd/backgroundfile-111318.pdf>

At its January 18, 2018 meeting, the TTC Board received the Managing Crowding on Line 1 report for information. The TTC Board directed staff to:

1. Report on the possible ridership that would be realized with additional rush-hour express bus routes utilizing a dedicated high occupancy vehicle (HOV) lane along the busiest subway routes; and
2. Identify the number of articulated buses required, the number of stops that would be implemented and the annualized cost of the added service.

[https://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2018/January 18/Reports/6 Managing Crowding on Line 1 Yonge.pdf](https://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2018/January%2018/Reports/6%20Managing%20Crowding%20on%20Line%201%20Yonge.pdf)

At its meeting on January 23, 2018, City Budget Committee amended the TTC funding request to:

1. Add \$1.0 million to the TTC operating subsidy to alleviate bus overcrowding through the implementation of an additional 800 weekly hours of service by the end of the year.

<http://app.toronto.ca/tmmis/viewPublishedReport.do?function=getMinutesReport&meetingId=13027>

At its meeting on February 12, 2018, City Council amended the TTC funding request to provide an additional \$2.0 million in TTC Operating Subsidy to relieve overcrowding.

<http://app.toronto.ca/tmmis/viewPublishedReport.do?function=getCouncilMinutesReport&meetingId=13089>

Issue Background

Overcrowding on Bus Services

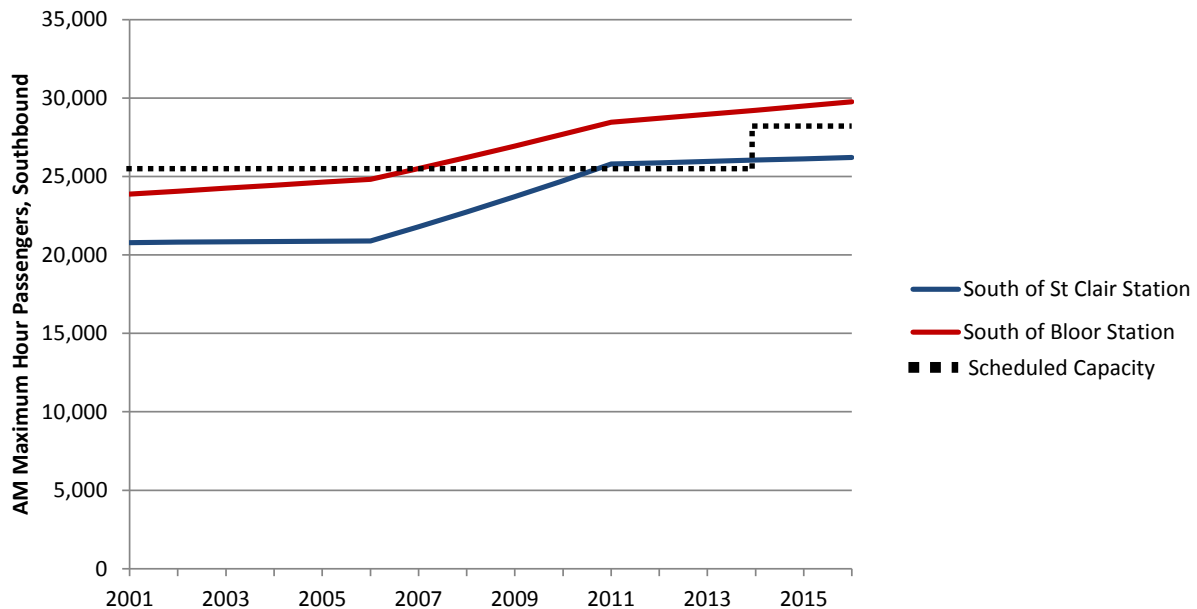
In the fall of 2017 as part of the TTC's regular and on-going review process, a number of TTC services were identified as overcrowded relative to standard. At its December 18, 2017 meeting, the City Budget Committee requested that the TTC prepare a briefing note outlining options to address overcrowding on bus services and provide a status update on bus availability and garage storage capacity. The TTC prepared Briefing Note #39, which was submitted to the City Budget Committee for its January 12, 2018 meeting.

The TTC indicated that it could relieve crowding on bus services in peak and off-peak periods, subject to an increase in operating funding. The TTC recommended focusing in 2018 on peak periods and off-peak periods where overcrowding is 30% greater than standard. The initiative was estimated to cost approximately \$1 million in 2018 (\$4 million annually thereafter) and required 24 AM and 19 PM peak period buses.

Overcrowding on Line 1

At its January 18, 2018 meeting, the TTC Board received the Managing Crowding on Line 1 Yonge-University report. The report indicates that Line 1 has reached historic levels of 28,000 to 30,000 passengers per hour southbound from Bloor-Yonge Station (as seen in **Figure 1**).

Figure 1: Passenger Demand on Line 1 (Yonge Subway) During AM Peak Period¹



¹ Scheduled Capacity increased with the Toronto Rocket trains which has 10% more capacity vs. T1 trains.

The report further noted that additional capacity is planned for Line 1 through improvements to the TTC's signalling system which, will use ATC (Automatic Train Control). When fully implemented, the planned service frequency and capacity will improve. In the interim, the TTC Board directed staff to identify initiatives to manage capacity on Line 1.

Additional Operating Subsidy in 2018

To relieve crowding on Line 1 and some bus routes, City Council approved additional operating subsidy in 2018 for the TTC. At its meeting on January 23, 2018, City Budget Committee amended the TTC funding request to add \$1 million to the TTC operating subsidy to alleviate bus overcrowding. At its meeting on February 12, 2018, City Council amended the TTC funding request to provide an additional \$2 million in TTC operating subsidy to relieve overcrowding. In total, the additional \$3 million in operating subsidy in 2018 is intended to increase service on Line 1 and some bus routes. In effect, this results in more trains and more buses in service to reduce wait times and crowding for customers.

Fleet Availability

Additional subway trains are available for service on Line 1 to alleviate crowding in the AM peak period.

The TTC has indicated for many years that it could not increase AM and PM peak period bus service due to limitations in the bus fleet and constraints with garage capacity. This has changed recently through two initiatives that allow the TTC to improve peak period service.

1. **New buses** purchased through the Public Transit Infrastructure Fund. These buses will result in a net increase of 80 buses, allowing the TTC to add 65 buses in service. This procurement allows the TTC to temporarily reduce its operating spare requirements and defer bus retirements without having an adverse impact on bus reliability and maintenance.
2. **New garage facility** acquired at 1810 Markham Road, which is adjacent to the existing Malvern Bus Garage expands the TTC's bus garage capacity by approximately 40 buses (30 in-service).

These two initiatives increase the number of buses available for peak period service from 1,575 to 1,610 (+35 buses) in 2018 and from 1,610 to 1,640 (+30 buses) in 2019.

The TTC will open McNicoll Bus Garage in late 2020. This will increase total garage capacity to 2,007 with 1,673 buses available for service. It should be noted, however, that even with McNicoll Bus Garage, the TTC will still be operating over design capacity. The TTC is assessing locations for a ninth bus garage and will provide an update to the TTC Board.

Comments

With available trains and buses, and additional funding, staff have identified four service and capacity improvements that can be implemented in the fall of 2018 to address crowding on Line 1 and bus services. These improvements will reduce wait times and crowding, improve the predictability and consistency of service, and enhance the transit network.

1. Improve Service Reliability on Line 1

Line 1 in the AM peak period is overcrowded south of Bloor Station. When ATC is fully implemented, the planned service frequency and capacity will improve. In the interim, the TTC has taken the following measures to manage crowding on Line 1. These measures will help prevent extreme overcrowding as experienced by customers on January 30, 2018, when there was an extended service disruption. Immediately after this incident the TTC took the following actions to improve service reliability on Line 1:

- More Trains:** The TTC will manage crowding on Line 1 in the AM peak period by providing additional capacity of approximately 3,300-3,600 passengers per hour. In February 2018, the TTC added two “run-as-directed” trains and in September 2018 the TTC will add a third train. The purpose of these trains is to fill-in service gaps. Together, the three trains provide more capacity than an express bus service on Yonge Street, which requires approximately 20 buses to provide capacity of 1,000 to 1,200 passengers per hour.
- Improved Crowd Management:** This spring, the TTC has added 10 station staff to help manage crowding at Bloor-Yonge and St. George stations.
- More Service to northwest Toronto:** In May, the TTC will provide more service to northwest Toronto between approximately 6 PM and 9 PM. Additional service will operate north of Sheppard West station, which will improve travel times and wait times for customers. This will be achieved by adjusting schedules to improve train movement at Wilson Yard.
- Improved AM Service:** In September 2018, the TTC will improve the start of subway service resulting in more reliable and predictable travel for customers. This will be achieved through infrastructure improvements at Wilson Yard, primarily the commissioning of the north hostler. This improvement minimizes access conflicts with work cars returning to the yard in the early mornings, ensuring that all AM peak period trains are deployed as scheduled.

These improvements will benefit up to 40 million customer-trips each year that now use Line 1 during the AM peak period. It will require an annual net cost of \$2.4 million as shown in **Table 2**.

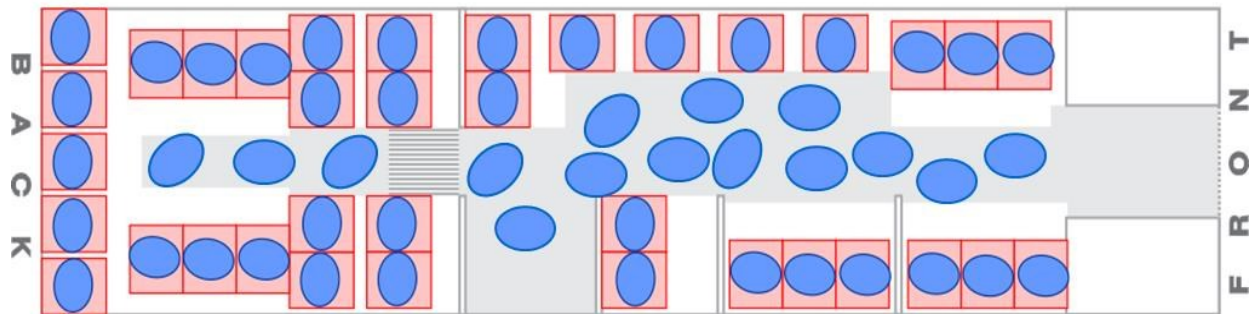
Table 2: Improve Service Reliability on Line 1 – Resource Requirements

Peak Trains		2018 Operating Cost	2019 Operating Cost	2019 New Revenue	2019 Net Cost
3 AM	0 PM	\$1.4M	\$2.4M	N/A	\$2.4M

2. Relieve Peak Crowding on Bus Services

The TTC crowding standard on bus services, in peak periods, is set to accommodate seated and standing customers. **Figure 2** is an illustrative example of the crowding standard for a 12 metre bus. The crowding standard for this bus model is set at 51 customers per bus on average.

Figure 2: Bus Crowding Standard, Peak Periods
(51 customers per bus on average)



As of May 2018, there are approximately 23 bus routes in 27 periods of operation that exceed the TTC crowding standard in peak periods. The bus routes include the following listed below and illustrated on the map in **Figure 3**:

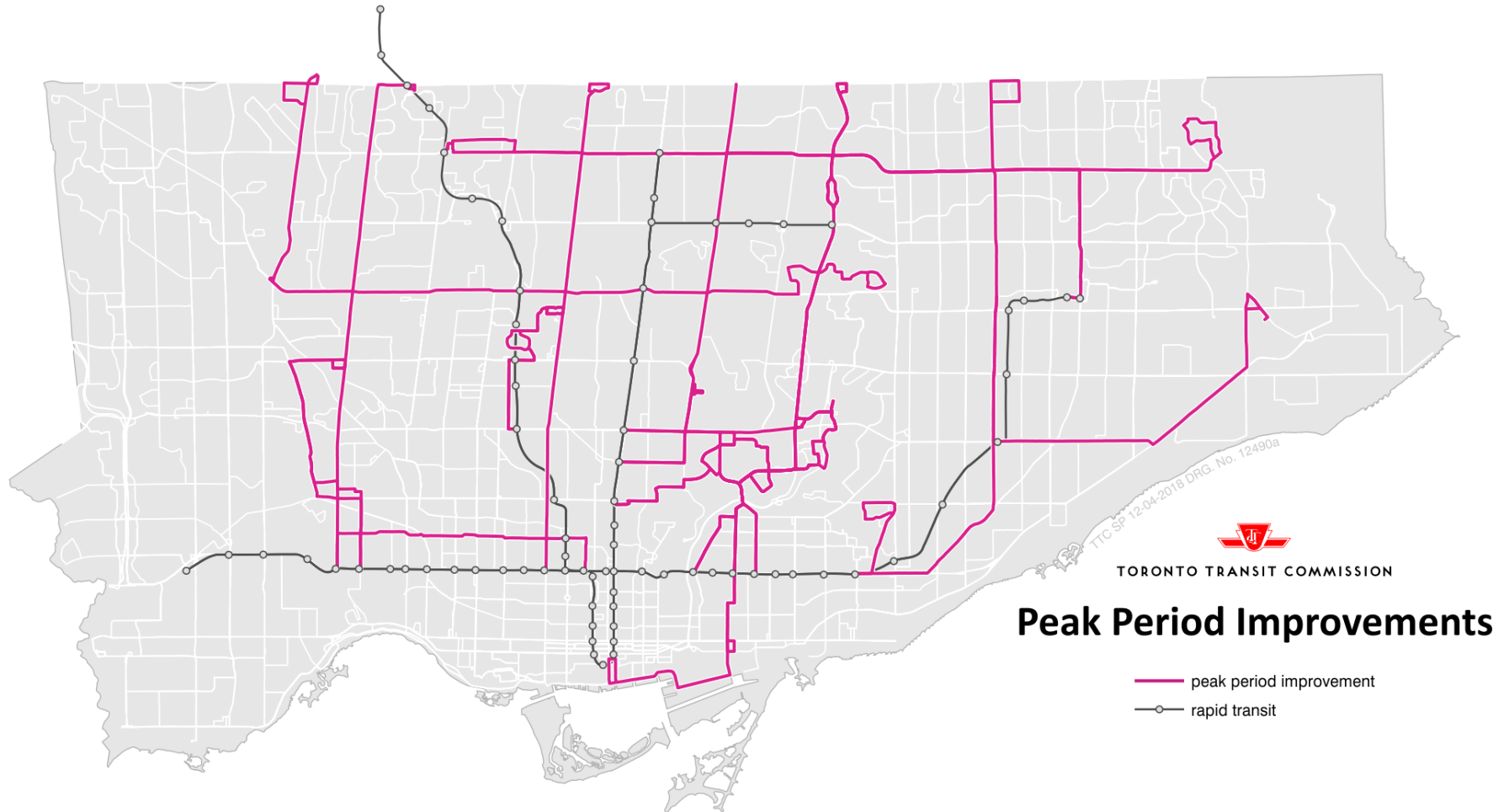
- 7 Bathurst
- 11 Bayview
- 23 Dawes
- 25 Don Mills
- 26 Dupont
- 36 Finch West (East of Keele)
- 43 Kennedy
- 56 Leaside
- 72 Pape
- 79 Scarlett Rd
- 88 South Leaside
- 100 Flemington Park
- 109 Ranees
- 113 Danforth
- 122 Graydon Hall
- 165 Weston Rd North
- 185 Don Mills Rocket
- 195 Jane Rocket
- 198 U of T Scarborough Rocket
- 199 Finch Rocket
- 29 Dufferin
- 89 Weston
- 102 Markham Rd

The TTC will add more buses on these routes starting this September, which will immediately reduce wait times and crowding levels. This improvement will benefit up to 23.7 million customer trips each and attract an estimated 285,000 new customer-trips each year when ridership fully matures in 2021. It will require \$3.3M to provide this service in 2019, as shown in **Table 3**.

Table 3: Relieve Peak Crowding on Bus Services, Resource Requirements

Peak Buses		2018 Operating Cost	2019 Operating Cost	2019 New Revenue	Full Year Net Cost
23 AM	19 PM	\$1M	\$3.8M	\$0.5M	\$3.3M

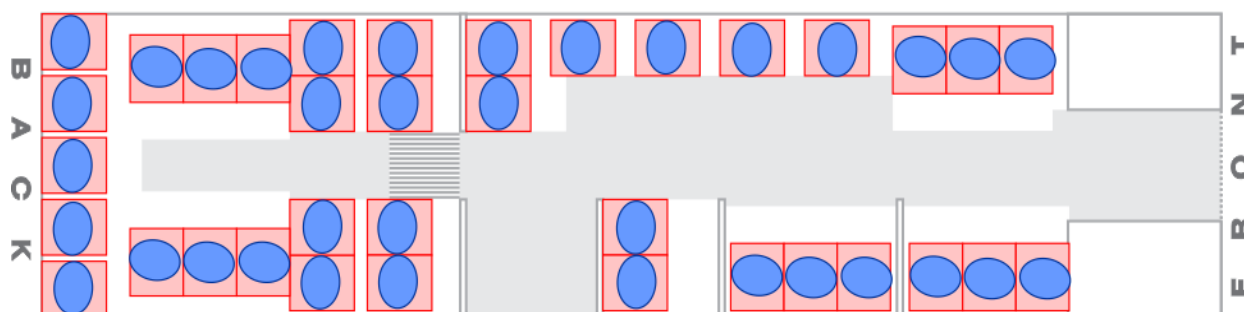
Figure 3: Relieve Peak Crowding on Bus Services, Map of Improvements



3. Relieve Off-Peak Crowding on Bus Services

The TTC crowding standard on bus services, in off-peak periods, is set to accommodate seated customers only. **Figure 4** is an illustrative example of the crowding standard for a 12 metre bus. The crowding standard for this bus model is set at 36 customers per bus on average.

Figure 4: Bus Crowding Standard, Off-Peak Periods
(36 customers per bus on average)



As of May 2018, there are approximately 26 bus routes in 55 periods of operation that exceed the TTC crowding standard in off-peak periods². Of these, demand on 14 bus routes in 24 periods of operation require customers to stand for more than 1.5 km, or approximately 5 minutes. These bus routes include the following listed below and illustrated in **Figure 5**:

- 24 Victoria Park
- 25 Don Mills
- 29 Dufferin
- 36 Finch West (East of Keele)
- 54 Lawrence East
- 63 Ossington
- 95 York Mills
- 100 Flemingdon Park
- 102 Markham Rd
- 112 West Mall
- 129 McCowan North
- 131 Nugget
- 198 U of T Scarborough Rocket
- 199 Finch Rocket

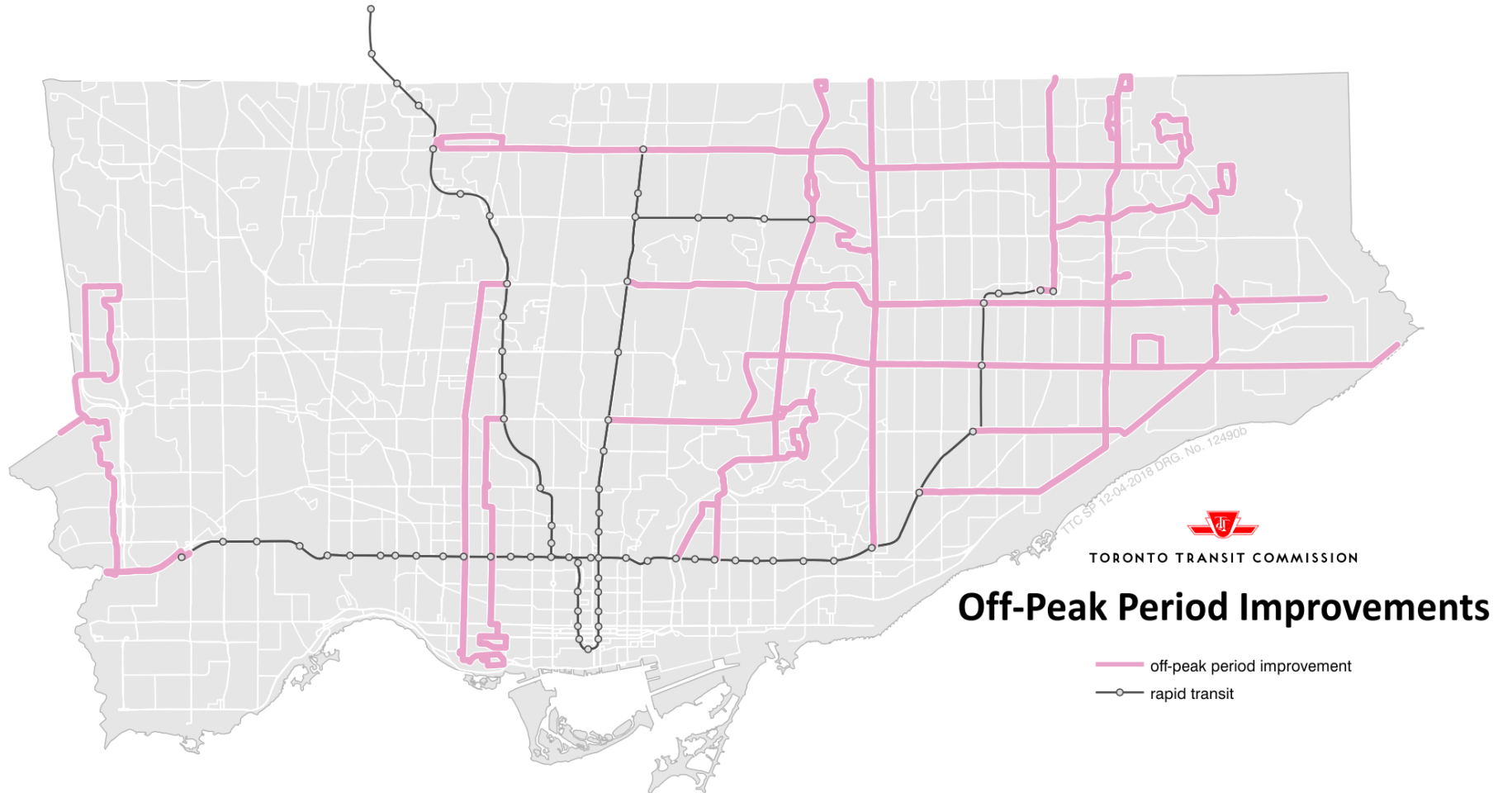
The TTC will add more buses on these routes in September, while continuing to monitor the remaining bus routes. This improvement will immediately reduce wait times and benefit up to 14.4 million customer-trips each year that are now made on these services and attract an estimated 150,000 new customer-trips each year when ridership fully matures in 2021. It will require \$2.2M to provide this service in 2019, as shown in **Table 4**.

Table 4: Relieve Off-Peak Crowding on Bus Services, Resource Requirements

Peak Buses		2018 Operating Cost	2019 Operating Cost	2019 New Revenue	2019 Net Cost
0 AM	0 PM	\$0.7M	\$2.5M	\$0.3M	\$2.2M

² New ridership counts are being processed on approximately 30 off-peak periods that have been previously identified as overcrowded. This validation work is expected to be completed in fall of 2018.

Figure 5: Relieve Off-Peak Crowding on Bus Services, Map of Improvements



4. Implement Express Bus Network

The Express Bus Network Study, approved by the TTC Board in June 2017, outlined a multi-year plan to improve and enhance the TTC’s existing express bus network. The objective of the plan is to provide customers with a greater choice of rapid, reliable and visible express bus services. The express bus network plan identified seven new and six enhanced express services to be implemented between 2019 and 2021, subject to bus availability and garage capacity. Once fully implemented, one in every six bus customers would use the enhanced express bus network.

With the buses available for service, the TTC will advance the express bus network plan. In the fall of 2018, the TTC will implement all seven new express services in peak periods to start, with the exception of Dufferin Street and Markham Road, which will also operate in off-peak periods. The seven new express services will relieve crowding on three routes and address crowding on four routes that is expected to approach standard in the next 1-3 years based on projected growth in ridership.

The seven new express services will operate along the following transit corridors as listed below and illustrated in **Figure 6**:

- 29 Dufferin (Wilson Station – Dufferin Loop)
- 37 Islington (Islington Station – Steeles Avenue)
- 52 Lawrence West (Lawrence Station – Pearson Airport)
- 84 Sheppard West (Extension to Weston Road)
- 85 Sheppard East (Branch of 190 Scarborough Ctr Rocket to Meadowvale Road)
- 89 Weston (89 Weston – Finch Avenue)
- 102 Markham Rd (Warden Station – Sheppard Avenue E.)

This service improvement will see all the express routes approved in the Express Bus Network Study implemented three years ahead of schedule. The remaining express network improvements include off-peak enhancements that will be phased in over the next few years.

The new express services will benefit 11 million customer-trips each year, saving more than 275,000 person-hours of customer journey time per year and attracting 695,000 additional customer-trips annually to the system when fully matured. It will require \$5.6 million to provide this service in 2019, as seen in **Table 5**. As seen in **Appendix A**, the TTC is recommending to maintain the single fare structure for these routes.

The TTC will launch a communications campaign for all express bus services that will coincide with the implementation of these seven new express services.

Table 5: Implement Express Bus Network, Resource Requirements

Peak Buses		2018 Operating Cost	2019 Operating Cost	2019 New Revenue	2019 Net Cost
26 AM	36 PM	\$1.9M	\$6.8M	\$1.2M	\$5.6M

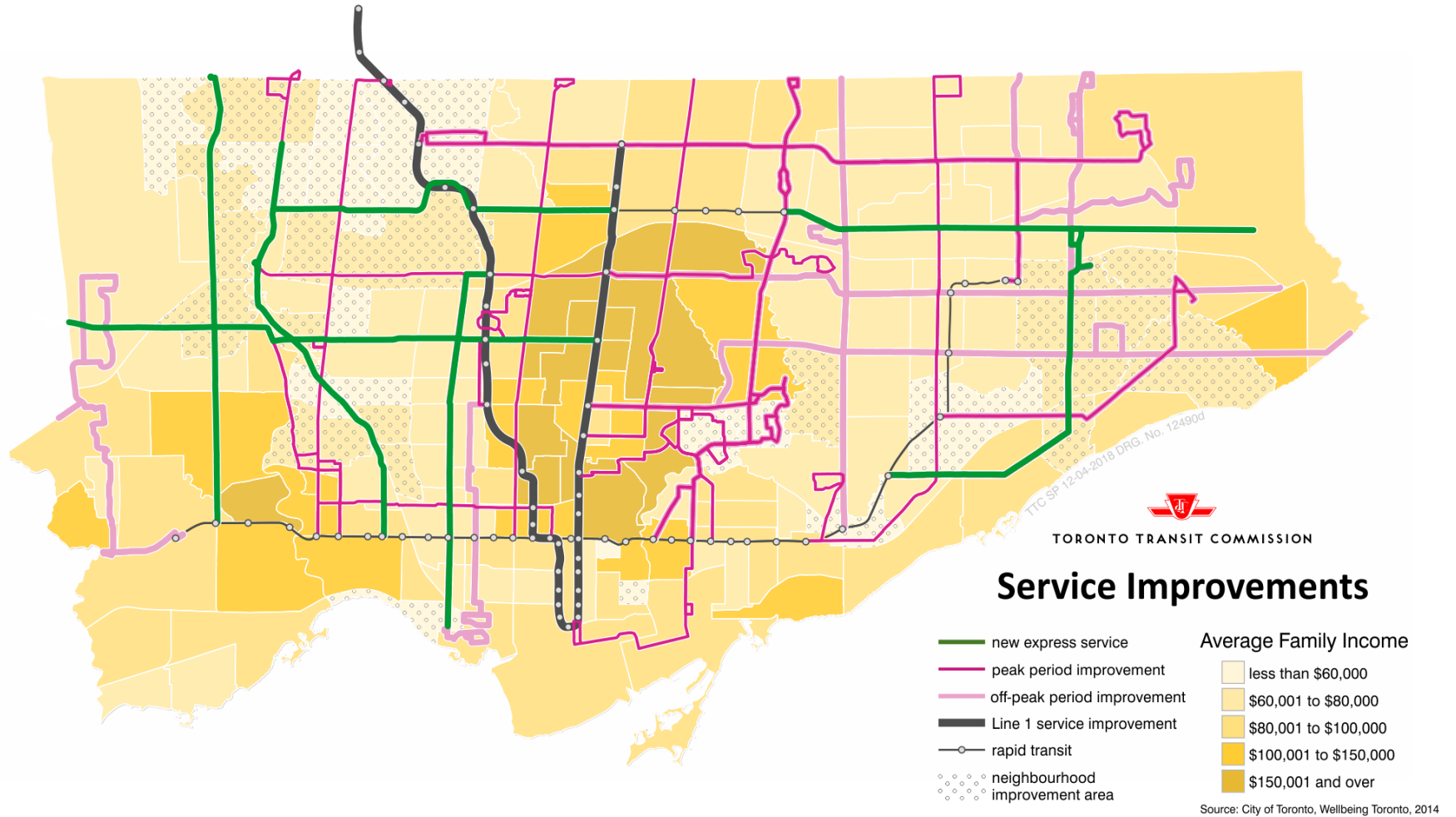
Figure 6: New Express Bus Services, Map of Improvements



Summary of Capacity Improvements

Figure 7 illustrates all the capacity improvements. These capacity improvements improve the predictability and consistency of service, reduce wait times and crowding and enhance the transit network.

Figure 7: All Capacity Improvements, Line 1 and Bus Services



Resource Plan

The following section highlights the resource requirements to implement the four capacity improvements.

Table 6 summarizes the total buses required for service in 2018 including buses to relieve peak crowding and implement new express services. As seen, the total buses in-service in the AM peak is 1,610, which is in-line with the 2018 target. Looking forward to 2019, there are approximately 30 buses available to implement service increases to accommodate ridership growth, improve bus service reliability and facilitate ridership growth initiatives.

Table 6: Bus Requirements in 2018

Improvement	AM Buses	PM Buses
Base Requirement	1,561	~1,516
1. improve service reliability on Line 1	N/A	N/A
2. relieve peak crowding on bus services	23	19
3. relieve off-peak crowding on bus services	N/A	N/A
4. implement new express bus services	26	36
Total	1,610	~1,571

Table 7 outlines the number of staff required to implement the four capacity improvements. In total, 111 positions are required. Of these, 27 positions were accounted for through an amendment at Executive Committee. Therefore, the improvements require a net increase of 84 positions.

Table 7: Staff Requirements

Staff	Number of
Station Staff	10
Route Supervisors	2
Bus Operators	73
Subway Operators	9
Coach Technicians	8
Instructors	7
Human Resources	2
Total	111 (net increase of 84)

Table 8 presents the resources required to implement the four improvements. The service and capacity improvements will require \$5.0 million in operating costs in 2018 and \$15.5 million in operating costs to annualize the service in 2019. The capacity improvements are expected to attract 848,000 customer-trips in 2019 which will generate \$2.0 million in revenue. Therefore, the net operating cost is \$13.5 million in 2019. Of this amount, \$3.0 million was provided during the 2018 budget process and a further \$2.0 million has been reallocated within the 2018 budget. This results in a net annualization subsidy requirement of \$8.5 million in 2019. A detailed list of the capacity improvements can be found in **Appendix B**.

Table 8: Net Operating Cost (in \$2018)

Improvement	2018	2019			
	Operating Cost	Operating Cost	New Ridership	New Revenue	Net Cost
1. improve service reliability on Line 1	\$1.4M	\$2.4M	0	\$0.0M	\$2.4M
2. relieve peak crowding on bus routes	\$1M	\$3.8M	214,000	\$0.5M	\$3.3M
3. relieve off-peak crowding on bus routes	\$0.7M	\$2.5M	113,000	\$0.3M	\$2.2M
4. implement new express bus services	\$1.9M	\$6.8M	521,000	\$1.2M	\$5.6M
Total	\$5M	\$15.5M	848,000	\$2.0M	\$13.5M
2018 Funding (New Subsidy & Through Reallocation)	-\$5M				-\$5M
Grand Total	\$0M				\$8.5M

Conclusion

This report presents four service and capacity improvements that can be implemented in fall, starting in September, to address crowding on Line 1 and on some bus routes. These improvements will improve the predictability and consistency of service, reduce wait times and crowding and enhance the transit network.

The capacity improvements will help to advance one of the pillars of the TTC's corporate plan to "move more customers more reliably" by ensuring we provide service that is accessible and integrated bus, streetcar and subway network that draws its high standard of customer care from our rich traditions of safety, service and courtesy.

A communications plan to market and explain these improvements is being developed and will roll-out as the new service is deployed.

Contact

Jacqueline Darwood, Head - Strategy & Service Planning
416-393-4499
Jacqueline.Darwood@ttc.ca

Signature

Kirsten Watson
Chief - Strategy & Customer Experience

Attachments

Appendix A – Premium Fare for All Express Services
Appendix B – Capacity Improvements – Service Changes

Appendix A: Premium Fare for All Express Services

This appendix is in response to the TTC's Board motion at its June 15, 2017 meeting directing staff to evaluate the effect on ridership should variable (premium) fares be introduced on Tier 1 and Tier 2 express routes.

Increasing fares will discourage customers from using a service, especially if a cheaper alternative is available – in this case the local routes that run parallel to the Express Bus Network.

Short-run transit fare elasticity values can range from -0.2 to -0.3, however long-run elasticity values (five to ten years after change) can range -0.6 to -0.9. The TTC's experience introducing the double fare on the Downtown Premium Express Routes would indicate a -0.8 long-run elasticity value.

Table A-1 illustrates the impact on ridership, in percentage terms, for the short and long-run cases for a 50% fare premium or a double (100%) fare premium.

Table A-1: Variable Pricing Impacts on Ridership

	Short-Run Elasticity Value	Long-Run Elasticity Value	Short-Run Ridership Change	Long-Run Ridership Change
50% Fare Premium	-0.2 to -0.3	-0.6 to -0.9	-10% to -15%	-30% to -45%
Double (100%) Fare Premium	-0.2 to -0.3	-0.6 to -0.9	-20% to -30%	-60% to -90%

In the long term, ridership on express routes would be at least 30% lower than its potential. Most of these customers would not be lost to the TTC, as they would likely use their local alternative.

However, this has a cost implication in running transit service along a busy corridor. If 30% to 45% of potential customers divert to the slower local transit service, more resources would be required to serve these customers compared to if they were on faster express services. The Express Bus Network Study concluded that resources can be reduced by up to 5-10% per corridor if all potential customers use the express service.

Express services help manage and improve corridor capacity by better accommodating long-distance travel patterns in a cost-effective manner; introducing variable pricing defeats this purpose. Therefore it is not recommended, that variable pricing be introduced on any portion of the Tier 1 or Tier 2 Express Bus Network.

Appendix B: Capacity Improvements – Service Changes

Table B-1 presents the service changes associated with the capacity improvements.

Table B-1: Service Changes

Route	Day of the Week	Periods of operation	Service Change
1	Mo-Fr	AM	Run-as-Directed Trains
1	Mo-Fr	EE	Service Increase
7	Mo-Fr	PM	Service Increase
11	Mo-Fr	AM, PM	Service Increase
23	Mo-Fr	PM	Service Increase
24	Mo-Fr	All Day	Service Increase
25	Mo-Fr	PM	Service Increase
25	Sat	Morn, Aft	Service Increase
26	Mo-Fr	AM	Service Increase
29	Mo-Fr	AM, MD, PM, EE	New Express Service
29	Sun	All Day	Vehicle Type Change
36	Mo-Fr	All Day	Service Increase
37	Mo-Fr	AM, PM	New Express Service
43	Mo-Fr	PM	Service Increase
52	Mo-Fr	AM, PM	New Express Service
54	Mo-Fr	MD, EE	Service Increase
54	Sat	All Day	Service Increase
56	Mo-Fr	PM	Service Increase
63	Mo-Fr	All Day	Service Increase
72	Mo-Fr	All Day	Service Increase
79	Mo-Fr	AM	Service Increase
84	Mo-Fr	AM, PM	New Express Service
88	Mo-Fr	AM, PM	Service Increase
89	Mo-Fr	AM, PM	New Express Service
95	Sat	All Day	Service Increase

Route	Day of the Week	Periods of operation	Service Change
100	Mo-Fr	AM, MD	Service Increase
102	Mo-Fr	AM, MD, PM, EE	New Express Service
102	Sat	Aft	Service Increase
109	Mo-Fr	PM	Service Increase
112	Mo-Fr	MD	Service Increase
113	Mo-Fr	PM	Service Increase
122	Mo-Fr	AM, PM	Service Increase
129	Sat	Morn	Service Increase
131	Sat	Aft	Service Increase
165	Mo-Fr	AM	Service Increase
185	Mo-Fr	AM	Service Increase
190	Mo-Fr	AM, PM	New Express Service
195	Mo-Fr	AM	Service Increase
198	Mo-Fr	MD, PM	Service Increase
199	Mo-Fr	AM	Service Increase
199	Sat	Morn, Aft	Service Increase
199	Sun	Morn, Aft	Service Increase