



New Streetcar Program - Resubmission of RFI Results for 60 Additional Streetcars

Date: July 10, 2018
To: TTC Board
From: Chief Executive Officer

Summary

On June 12, 2018, the TTC Board deferred the information report entitled “New Streetcar Program – Request for Information (RFI) for 60 Additional Streetcars” and requested the report be resubmitted at the July Board meeting as an action report.

The Board requested three scenarios be presented for consideration as follows:

- Scenario #1 – Procure 60 additional streetcars through contract with Bombardier;
- Scenario #2 – Issue a Request for Proposal (RFP) for 60 additional streetcars; and
- Scenario #3 – Defer the decision between Scenarios #1 and #2 until Q1 2019.

Given that there is currently no approved funding for additional streetcars, at this time a contract change cannot be issued to Bombardier (Scenario #1) and an RFP cannot be issued to the market in good faith (Scenario #2).

Scenario #3 allows time for TTC staff to undertake the following:

- Evaluate funding and procurement options for additional streetcars and associated infrastructure modifications in light of competing capital budget priorities;
- Issue a Letter of Intent to Bombardier with a request to consider options for extending their production into 2020/2021 and to hold the contract’s option price of \$3.6 million per car exclusive of escalation, foreign exchange and other adjustments;
- For use in the event of future RFP for all or a portion of the TTC’s additional streetcar need:
 - Update the streetcar specification and commercial terms; and
 - Validate RFI responses using a third-party to assess respondents’ historical performance.

This report serves as a transmittal of the original RFI results and recommends Scenario #3 - deferral of the decision on procurement options until staff have conducted a full options analysis and until funding is determined through the 2019 Capital Budget process.

Recommendations

Staff recommends the Board request staff to:

1. Report back to the Board, subject to funding approval in 2019, with an analysis of procurement options for 60 additional streetcars.

Financial Summary

Funding for the additional 60 streetcars of approximately \$361 million has been submitted through previous budget requests; however, the request remains unfunded in 2018.

Staff will evaluate funding and procurement options for the additional streetcars and associated track modifications (approximately \$10 million) in light of competing capital priorities through the 2019 Capital Budget process.

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

Equity/Accessibility Matters

All vehicles procured by the TTC are accessible and meet or exceed requirements of the *Accessibility for Ontarians with Disabilities Act*.

There are no accessibility or equity matters arising specifically from this report.

Decision History

On June 12, 2018, the TTC Board deferred the information report entitled “New Streetcar Program - Request for Information (RFI) for 60 Additional Streetcars” and requested the report be resubmitted at the July 10, 2018 Board meeting as an action report.

The June 12 Report, attached as Appendix B, contains all pertinent decision history.

Issue Background

The June 12 Report, attached as Appendix B, contains all pertinent issue background.

Comments

As this report serves as a transmittal of the original June 12th RFI report and recommends next steps consistent with those outlined the original report there are no further comments beyond what is provided in the Summary section.

Contact

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Signature

Richard Leary
Chief Executive Officer (Acting)

Attachments

Appendix A: June 12, 2018 Board Report: “New Streetcar Program - Request for Information (RFI) for 60 Additional Streetcars”

PROCUREMENT OPTIONS ANALYSIS FOR 60 ADDITIONAL STREETCARS

Legend: Score 4 - high probability of success; 3 - fair probability of success; 2 - average probability of success; 1 - poor probability of success.

Criteria #	Criteria considered	Scenario #1		Scenario #2		Scenario #3		Hybrid Option	
		Procure 60 streetcars through existing contract	Score	RFP for 60 streetcars	Score	Defer Decision Until Funding is Approved in Q1/2019	Score	Procure some vehicles through existing contract and some through RFP (Example 30/30 split)	Score
1	Funding	This scenario can not be initiated until funding is approved through the 2019 budget process		This scenario carries significant risk if initiated without a firm intent to award a contract.		As there is no approved funding for scenarios #1 or #2, Scenario #3 is the recommended way forward.		This hybrid scenario carries the same constraints and risk as Scenarios #1 and #2.	
2	Timing of receiving vehicles for service	If an order placed with funding approval in Q1 2019, cars can be manufactured closely following the 204 car order and all 60 streetcars would be delivered by Q4 2021 meeting ridership growth projections.	4	Delivery of production vehicles would be expected in 2025 / 2026. While this timing would work for a future procurement of vehicles for planned expansion projects, this would put significant strain on both streetcar and bus routes. Preparing for RFP takes approximately 6 months and the RFP process itself takes approximately 6 months. Following the design review and approval process, prototype vehicles can be expected 2 years after contract award. After one year (4 seasons) of prototype evaluation, production starts 3 years + after contract award and continues for 1 to 2 years.	1	If the decision in Q1 2019 is to procure 60 additional streetcars through Bombardier, see text under Scenario #1. If the decision in Q1 2019 is to go to RFP, see text under Scenario #2	2 or 1	This is a compromise option that includes getting some cars through the Bombardier contract and going to RFP for the remainder. Using an example where 30 streetcars were secured through Bombardier in 2021, this would ensure that some added service is provided, but would still result in a gap starting in 2021 through 2025/2026 when the remaining vehicles arrive.	4
3	Technical risks - safety against derailment, electromagnetic interference, accessibility ramp interface with both service platform and on street, dynamic envelop profile compatibility with mature TTC streetcar network, etc.	BT's Flexity Outlook model has gone through iterations of changes under TTC guidance to meet TTC's criteria; and is proven to be successful and liked by the customers.	4	If BT did not win the contract, risk exists for other carbuilders to engineer changes to their vehicle platform to meet TTC's network requirements. This has cost and schedule implications	3	If BT did not win the contract, risk exists for other carbuilders to engineer changes to their vehicle platform to meet TTC's network requirements. This has cost and schedule implications	3 or 4	BT's Flexity Outlook model has gone through iterations of changes under TTC guidance to meet streetcar system requirements. For vehicles issued through RFP, if BT did not win the contract, technical risk exists that the new carbuilder would have to address.	3 - 4

4	Risk of major production and quality issues due to complexity of vehicles and transfer of manufacturing and technology to meet Canadian Content	Lessons have been learned and are being applied. Today's trend demonstrates an improving production rate, vehicle reliability and build quality.	4	TTC to support new carbuilder (if BT did not win) with lessons learned. Higher risk for a complex car in the prototype and initial production phase	2	If it is decided to negotiate with BT as sole source in Q1/19, benefit of continuous production run and lessons learned will be diminished; if going RFP route, see RFP comments	2 or 4	Lessons learned and applied with Bombardier; however, this is an unknown for any new carbuilder	2 - 4
5	Confidence in on-time delivery	Tooling, build process and QA had largely been validated	4	TTC to structure Contract to ensure a more robust manufacturing requirement for success	2	TTC to structure Contract to ensure a more robust manufacturing requirement for success	2 or 4	Tooling, build process and QA had largely been validated with Bombardier; however, this is an unknown for any new carbuilder	2 - 4
6	Cost of vehicle	Bombardier has indicated that they would make a good faith attempt to hold the options price of \$3.6 million per car.	4	BT's Option car price is in range of the lowest car prices in the world and is cheaper than the base tendered price of the 204-car order. Note there is no off-the-shelf accessible low floor streetcars meeting the TTC's mature network and demanding mainline configuration. Premium cost to modify depends on order size.	3	BT's Option car price is in range of the lowest car prices in the world and is cheaper than the base tendered price of the 204-car order. Note there is no off-the-shelf accessible low floor streetcars meeting the TTC's mature network and demanding mainline configuration. Premium cost to modify depends on order size.	3	Cars purchased from Bombardier would be at among the lowest cost vehicles on the market. A successful bidder on a future RFP would likely exceed, or at best meet, Bombardier's options price.	3 - 4
7	Cost of ownership	Cost of ownership is lower due to commonality with the 204-car fleet in maintenance, overhaul, parts, facility configuration and operator sign-up and allocation.	4	If BT did not win the contract, accommodations in the TTC maintenance facility and practices may be required. Operating cost in maintenance, parts and parts storage, training, operator sign-up will increase. Life Cycle Cost will need to be analyzed upon receipt of Bid.	2	See Scenario #1 and #2	2 or 4	If order is placed within Option validity date of July/18, cost of ownership is lower due to commonality with the 204-car fleet in maintenance, overhaul, parts, facility configuration and operator sign-up and allocation.	2 - 4
9	Operational impact - carhouse maintenance & emergency recovery	No change in process, special tools, training or "dedicated" carhouse	4	If BT did not get the order more training, special tools, different emergency recovery procedures & tools, parts storage, etc.	3	If BT did not get the job, more training, special tools, different emergency recovery procedures & tools, parts storage, etc.	3		3 - 4

10	Pressure on supplementary buses and bus garage	There would be no need to maintain or increase the number of buses on streetcar routes	4	Approximately 125 buses (equivalent to the service provided by a fleet of 60 streetcars) would be required to supplement streetcar routes	1	See Scenario #1 and #2	1 or 4	In a scenario where 30 streetcars are procured from Bombardier and 30 from a new supplier, approximately 75 buses would be required to supplement streetcar routes until 2025/2026 when the balance of 30 streetcars are delivered.	3
Overall assessment rating		This scenario can not be initiated until funding is approved through the 2019 budget process	This scenario carries significant risk if initiated without a firm intent to award a contract. If issued for all additional vehicles over and above those required in 2021 for growth, this option is strongly preferred.		If in Q1 2019, 60 streetcars are procured through Bombardier for delivery in 2021 there is a high probability of meeting service and organization objectives.		This hybrid scenario carries the same constraints and risk as Scenarios #1 and #2.		



New Streetcar Program - Request for Information (RFI) for 60 Additional Streetcars

Date: June 12, 2018
To: TTC Board
From: Chief Service Officer

Summary

On June 22, 2015, TTC staff submitted a report to the Board providing a status update on the TTC's contract with Bombardier Transportation Canada Inc. relating to the design and supply of 204 new low floor streetcars. In summary, of the 14 streetcars forecasted for delivery on August 31, 2014, the inaugural launch of the new fleet, only two were supplied. The report went on to say that the streetcars attained a high level of reliability and customer satisfaction.

The contract with Bombardier included options for up to 100 additional streetcars and at that time there was a reported need for 60 of those vehicles to be supplied following Bombardier's delivery of the 204 streetcars in order to meet future ridership growth projections. Due to slippage in Bombardier's delivery schedule, the TTC Board requested a Request for Information (RFI) be issued to gauge the market's interest in delivering the additional required streetcars.

On September 12, 2017, staff issued a RFI document and invited known rail manufacturers to assess the interest of the marketplace to design and supply additional accessible low floor streetcars in response.

This report provides the following:

1. Snapshot of new streetcar deliveries;
2. Confirmation of need for 60 additional streetcars;
3. Summary of RFI responses; and
4. Next steps.

Financial Summary

This report has no immediate financial impact as the purpose is to provide a status update on the Board-directed assessment of market interest in supplying new streetcars to the TTC.

Funding for the additional 60 streetcars of \$360.885 million has been submitted through previous budget requests; however, the request remains unfunded in 2018. The TTC's 2019 budget submission will include a request for funds believed to be sufficient to procure 60 additional streetcars, regardless of the supplier. Funding for facility and track modifications to accommodate additional streetcars will also be requested through the 2019 budget process.

This report does not address vehicle, storage, or funding requirements to accommodate currently unfunded streetcar expansion programs.

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

Equity/Accessibility Matters

All vehicles procured by the TTC are accessible and meet or preferably exceed requirements of the *Accessibility for Ontarians with Disabilities Act*.

There are no accessibility or equity matters arising specifically from this report.

Decision History

April 2006 - A Board decision was made to procure accessible streetcars to replace the streetcar fleet (ALRV and CLRV) that was approaching the end of its design life.

January 2008 - A Request for Proposal was posted on the TTC's Web site. Nineteen companies were issued copies of the proposal document out of which two submissions were received. Based on the review of each submission, it was determined that neither proponent had provided a proposal that complied with the TTC requirements as set out in the Request for Proposal documents. This decision was supported by an independent fairness monitor retained to oversee the procurement process. As a result the TTC cancelled the Request for Proposal.

At the August 27, 2008 Board Meeting staff were directed to proceed with a Structured Multi-Phase Bid Process (SMPBP) with three car builders that had demonstrated experience in producing 100% low floor light rail vehicles. These companies were Alstom Transportation Inc. (Alstom), Bombardier Transportation Canada Inc. (Bombardier) and Siemens Canada Limited (Siemens). Refer to Board meeting highlight item 1 in the following link:

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2008/Aug 27 2008/Highlights/index.jsp](http://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2008/Aug%2027%202008/Highlights/index.jsp)

At its April 27, 2009 meeting, the TTC Board approved a staff recommendation to award to Bombardier the contract for the supply of streetcars to replace the aging fleet and accommodate marginal future growth. Toronto City Council's approval of the Contract

was, amongst other conditions, subject to a commitment of funding from the Province of Ontario. Refer to the Board meeting highlights item 1 in the following link:

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2009/Apr_27_2009/Highlights/index.jsp

On June 19, 2009, the Province of Ontario announced funding of up to \$416,300,000.00 towards 1/3 of the Eligible Costs for the TTC's procurement of the new low floor streetcar fleet. Subsequently, in a special meeting on June 26, 2009, Toronto City Council approved the funds required to complete the purchase of 204 low floor streetcars. The TTC and Bombardier executed the Contract on June 30, 2009 for a total Contract price of \$993 million inclusive of taxes but before foreign exchange.

Subsequent Contract Amendment costs have not been included. The procurement documents were structured to reflect a minimum award of 204 vehicles. The procurement documents included an option to purchase up to 400 additional vehicles for use by the TTC for future growth requirements and in any approved Transit City projects (subsequently 300 option vehicles were assigned to Metrolinx based on a Board authority at the May 6, 2010 Board meeting.)

Refer to the Deferred from Last Meeting to Permit Debate/Public Presentation Item 8 in the following link:

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2010/June_2_2010/Minutes/index.jsp

On January 21, 2013 an agreement was established between the Province of Ontario, City of Toronto and the Toronto Transit Commission regarding Ontario's and Toronto's contribution toward the TTC's low floor streetcar fleet replacement project. City funding will be sourced through a combination of debt and the application of gas tax funding.

On June 22, 2015, a status update report was provided to the Board outlining the status of the delivery of the new streetcars.

At the June 22, 2015 meeting, the Board requested that staff report back with respect to a range of options available to the TTC based on Bombardier's poor performance to deliver the streetcars within the time specified in the Contract Schedule.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/June_22/Reports/Board_Report_with_Confidential_Attachment_New_Streetcar.pdf

In response to the Board's motion, staff provided a report back to the Board on July 29, 2015. The report was deferred to September 28, 2015. At the September 28, 2015 Board meeting, the report was referred to the December 16, 2015 Board meeting. This report should be read together with the previously deferred and referred report (July 29, 2015 and September 28, 2015).

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/September_28/Reports/Board_Request_Staff_Review_of_Options_to_Exclude_Bombardier_.pdf

Issue Background

At the June 22, 2015 Board meeting, the Board received a report outlining the status of the delivery of the new streetcars. In accordance with the Contract delivery schedule (as adjusted), 14 streetcars were forecasted for delivery by August 31, 2014, the inaugural launch of the new fleet; however, only two were supplied. By the end of 2014, the TTC was expecting to receive 37 new streetcars and in 2015 an additional 36 were expected by contract. The actual number of streetcars delivered as of December 31, 2014 was three and Bombardier revised their projection for 2015 down from 36 to 27 streetcars.

At the June 2, 2015 meeting, the Board requested that staff report back with respect to a range of options available to the TTC based on Bombardier's poor performance to deliver the streetcars within the time specified in the Contract Schedule.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/June_22/Reports/Board_Report_with_Confidential_Attachment_New_Streetcar.pdf

Comments

On June 22, 2015, TTC staff submitted a report to the Board providing a status update on the TTC's contract with Bombardier Transportation Canada Inc. relating to the design and supply of 204 new low floor streetcars. In summary, of the 14 streetcars forecasted for delivery on August 31, 2014, the inaugural launch of the new fleet, only two were supplied. The report went on to say that the streetcars attained a high level of reliability and customer satisfaction.

The contract with Bombardier included options for up to 100 additional streetcars and at that time there was a reported need for 60 of those vehicles to be supplied following Bombardier's delivery of the 204 streetcars in order to meet future ridership growth projections. Due to slippage in Bombardier's delivery schedule, the TTC Board directed that a RFI be issued to gauge the market's interest in delivering the additional required streetcars.

On September 12 2017, staff issued a public RFI document and invited known rail manufacturers to assess the interest of the marketplace to design and supply additional accessible low floor streetcars in response.

This report provides the following:

1. Snapshot of New Streetcar Deliveries;
2. Confirmation of Need for 60 Additional Streetcars;
3. Summary of RFI Process and Responses; and
4. Next steps.

1. Snapshot of New Streetcar Deliveries

The figure below (Figure 1) depicts the number of new streetcars received each year from 2014 through May 29, 2018 and targets for the remaining deliveries.

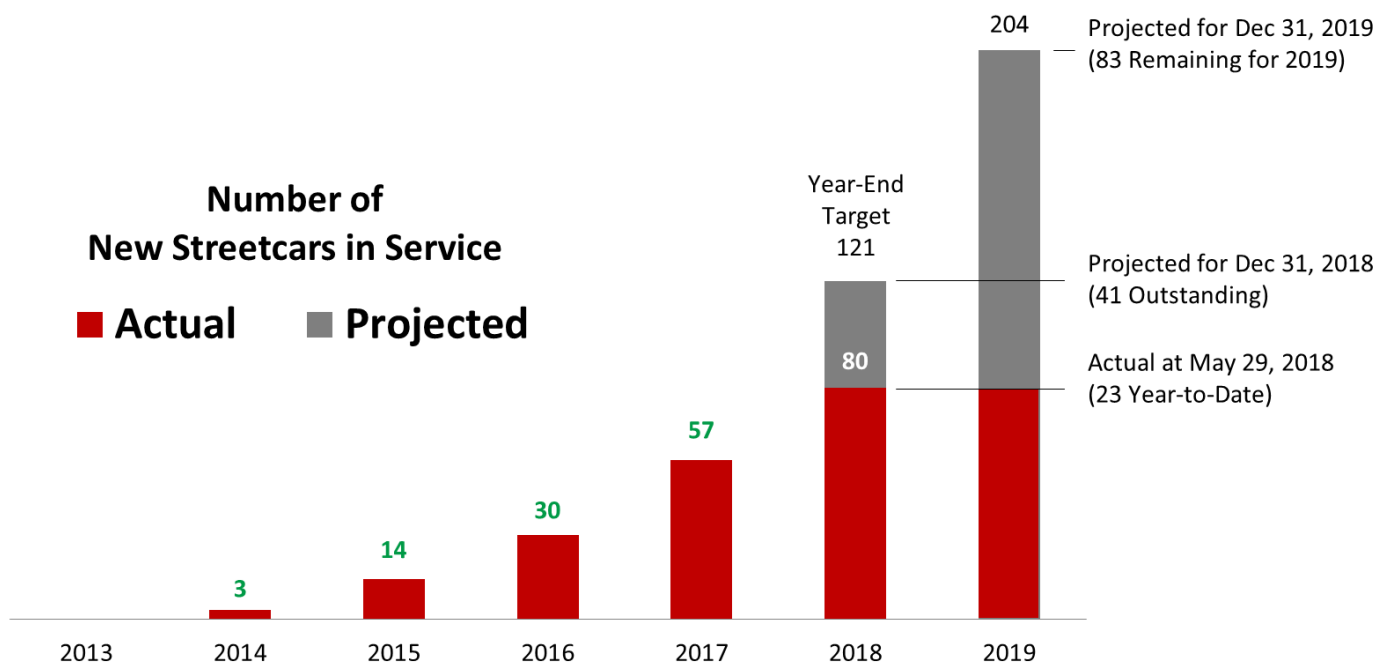


Figure 1: New Streetcar Deliveries to Date

Recent Progress:

In Q1 of 2018, 11 of the 12 vehicles projected were approved to be shipped from Thunder Bay. One vehicle was damaged on-route and was returned for repair at the Bombardier plant resulting in 10 of 12 entering service in the first quarter (Figure 2).

The target for Q2 2018 is 16 new streetcars in service. As of May 29, 2018, seven streetcars had been shipped, eight had entered service; and of the 204 streetcars ordered, 80 streetcars had been shipped and 75 were in revenue service.

2018 New Streetcar Delivery Schedule

	Q1	Q2	Q3	Q4	Total
Actual	10	8*	TBA	TBA	18*
v/s 2018 latest Schedule	12	16	15	21	64

Figure 2: 2018 New Streetcar Delivery Schedule

Future Performance:

TTC's project team is embedded at Bombardier's plants in Thunder Bay; Kingston; La Pocatiere, QC, and Sahagun, Mexico. Recent observations suggest that the production rate continues to increase and quality continues to improve, particularly in Thunder Bay where streetcars are completed.

While challenges continue, TTC and Bombardier remain committed in working together to identify areas of constraint, improved efficiencies and the implementation of corrective actions that affect production and delivery of vehicles.

Bombardier continues to prepare for a second production line out of their Kingston ON plant with the first car due in October. Achievement of this objective will add confidence that Bombardier will recover and meet the original commitment for 204 new streetcars by the end of Q4 2019.

2. Confirmation of Need for 60 Additional Streetcars

Downtown is the heart of transportation activity in the City of Toronto and the surrounding region. It encompasses a 17-square-kilometre area from Bathurst Street to the Don River and from the waterfront to the CP rail corridor/Rosedale Valley Road. The streetcar network is the backbone of the Downtown transportation system. On a typical weekday, about 810,000 transit trips are made in and out of Downtown. This is an area where streetcars provide virtually all transit except for one bus route and a subway line.

In 2009, the original order for 204 new high-capacity, fully-accessible streetcars was based on growth patterns and factors which were available in 2008. Based on those facts, it was then projected that the 204 LFLRVs would accommodate projected ridership on the TTC's eleven streetcar routes through to 2027.

Since 2009, development patterns, ridership growth and other ridership determinants have changed significantly. This has advanced the need for the additional 60 streetcars to 2020.

Additional Streetcars to Accommodate Population and Employment Growth

Toronto's Downtown area has for the last 12 years been increasing at a rate of approximately four times greater than the rest of the City of Toronto and about 40% faster than the Greater Toronto Area as a whole. Population and employment projections developed by the Provincial Office of the GTA forecasted that the large majority of the regional growth would occur between 1996 and 2011 with limited growth thereafter to 2031. The projections anticipated approximately 200,000 residents Downtown in 2011 and approximately 480,000 jobs Downtown in 2016. Population growth from 1996 to 2016 has matched those expectations but employment growth has exceeded them by approximately 4%.

Much of the residential growth Downtown between 2012 and 2016 took place south of Queen Street. Almost 50% of all Downtown growth occurred in the King-Spadina and Waterfront West neighbourhoods. The Bay Corridor, King-Parliament and Waterfront Central saw moderate increases accounting for 36% of new residents. As a result of the increase in development in Toronto's Downtown area, TTC streetcar ridership increased by 20% between 2008 and 2018 which is much higher than what was anticipated back in 2008. Transit mode share across the City has also increased from 23% (2006) to 27% (2016), putting additional pressure on the system.

Recent revision of the projected employment and population growth for Downtown Toronto has introduced higher forecasts which now extend to 2041. The revised estimate of number of new residents in the Downtown is 500% greater than originally projected. The revised estimate of new jobs in the Downtown is 200% greater than originally projected.

The recent and anticipated population and employment growth in the Downtown is putting tremendous pressure on transportation and transit infrastructure. As a result, the City of Toronto initiated the TOCore study. TOCore is an initiative to prepare a new plan for Toronto's Downtown to be incorporated into the City's Official Plan. As part of the plan, a Downtown Mobility Strategy was developed to guide the implementation of the Downtown Plan. The plan prioritizes surface transit with strong policies such as: *"Priority for surface transit will be implemented on all routes to favour public transit over private automobiles"*

Planned enhancements could include increasing service levels, implementing transit priority measures and expanding the streetcar network with new routes (for example, East Bayfront) in the 2020s. As Downtown and nearby neighbourhoods continue to grow, there will be more demand on already busy transit routes.

Additional Streetcars to Accommodate Latent Demand

The size of the TTC's streetcar fleet has been unchanged for almost 30 years, during a period of continuously-increasing ridership growth. This has resulted in streetcar capacity, during peak periods, being completely exhausted more than 10 years ago, with no ability to accommodate additional ridership during peak periods. Experience with deployment of the new LFLRVs on the first few streetcar routes has shown that there is an existing unmet, latent demand for peak-travel on the TTC's streetcar routes. King Street is an excellent example of this. Over the first few months of operation the route experienced an increase of all-day weekday ridership of 16%. There are other factors that have contributed to the ridership increase (such as priority treatments and increased reliability); however, latent demand is one factor driving the ridership increase.

Additional Streetcars to Accommodate Traffic Congestion in the Downtown

The increase in population and employment has also resulted in increases in traffic congestion. Traffic congestion within the city is the highest in the Downtown core where the TTC's streetcar network is in operation. In September 2015, the City of Toronto released a report on Congestion Trends in the City of Toronto (2011-2014). The report showed that Downtown congestion increased significantly between 2011 and 2014. The mean Downtown vehicle speeds were four and seven kilometers per hour slower in the morning and evening peak hours in 2014 when compared to 2011. Increasing traffic congestion, high passenger volumes and adjustments in traffic signal timings create a number of operating challenges which influences service reliability. Streetcar routes have required schedule adjustments to reflect additional travel time required to operate a reliable service. To maintain appropriate service levels extra vehicles are required to improve service quality, reduce short turns, improve on-time departures / arrivals, and reduce missed trips.

In summary, the TTC 2019-2033 Streetcar Fleet Plan is shown in Figure 3. As seen, the TTC will have taken receipt of the 204 LFRVs in 2020. Depending on the life expectancy of the legacy fleet, the TTC requires the additional 60 streetcars between 2020 and 2023. Higher utilization of Hillcrest is required to accommodate the additional 60 streetcars.

The additional 60 streetcars will satisfy demand until approximately 2023. Beyond 2023, the TTC will require additional streetcars and a facility to accommodate this growth and expansion of the streetcar network. TTC staff to begin evaluation of options for additional storage and maintenance facility in 2025 – funding permitting.

The additional 60 streetcars will help to achieve one of the TTC's corporate objectives of moving more people reliably. This additional capacity is also key to achieving Toronto's objectives of more environmentally-sustainable development and a more-liveable central area.

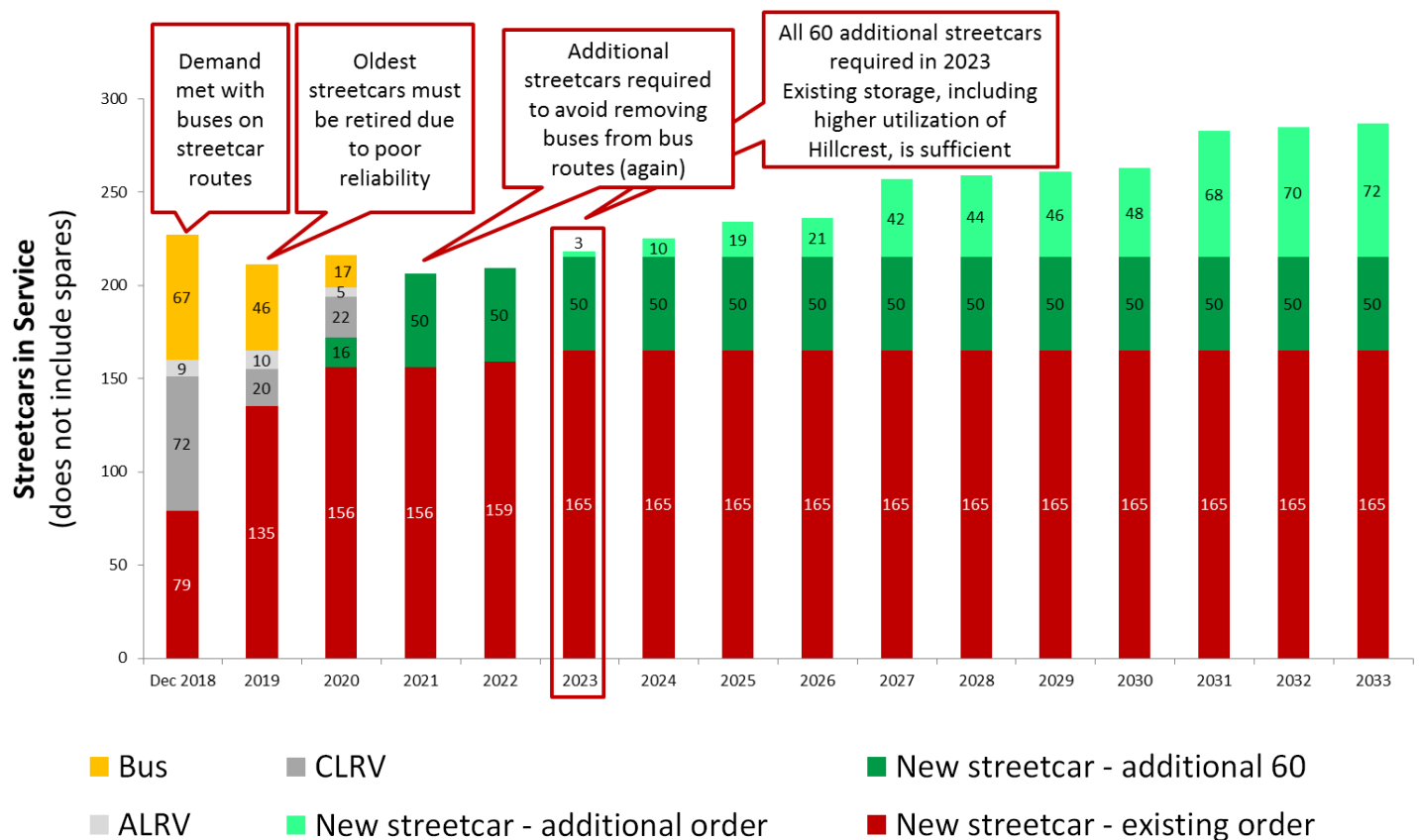


Figure 3: Demand for Additional Streetcars

3. Summary of RFI Process and Responses

Process

On September 12, 2017, staff issued a RFI document and invited known rail manufacturers to assess the interest of the marketplace to design and supply additional accessible low floor streetcars in response.

In accordance with the Board motion, staff prepared a RFI document. The RFI outlined the must-comply requirements relating to:

- Safe operation in the TTC's mature streetcar network comprising tight radius curves and loops, single point track switches, steep gradients;
- Noise and vibration limits;
- TBD Liquidated Damage and LD cap;
- Accessibility ramp; and
- Compatibility with the Bombardier Flexity vehicles in terms of collision strength, brake rate and emergency recovery.

In an attempt to draw responses from as many manufactures as possible, the RFI was as general as possible and asked only five questions as follows:

1. Industry background and company history
2. Are you willing to produce/modify a vehicle that meets the TTC technical requirements, 100% low floor, 25% Canadian Content, and the technical Pass/Fail criteria?
3. How soon can you perform a Safety Against Derailment analysis and a 25% CanCon plan?
4. How soon can you engage in a Structured Multi-Phase Bid Process RFP process?
5. What are your vehicle manufacturing capacity, prototype vehicle and production line availability timelines?

The RFI was issued at Merx on September 12, 2017, closed on November 14, 2017 with a pre-closing meeting and streetcar network tour on October 31, 2017.

The complete RFI timeline was:

September 12, 2017:	Issued on MERX
October 31, 2017:	Pre-closing meeting & streetcar network tour
November 14, 2017:	RFI Submission Close Date
March 2018:	Re-Confirmed Service Need
April 2018:	Realigned Fleet Plan and 2019 Budget
June 2018:	Report RFI results to TTC Board Timeline

Responses

Ten companies responded to the RFI, representing carbuilders from Canada, Germany, Spain, China, the Czech Republic, Korea, Switzerland, and the Ukraine.

Staff conducted a thorough review of the responses and believes that four or five of the companies would be good candidates for the TTC's Structured Multi-phase Bid Process (SMPBP).

The SMPBP process allows staff to review the detailed general conditions and technical specifications with each carbuilder separately for a common agreeable contract document that several carbuilders can bid on, without compromising the TTC's interests.

4. Next steps

Over the coming months, staff will undertake the following:

1. Request funding approval through 2019 budget process;
2. Update contract documents based on stakeholder input, contract changes, and lessons learned;
3. Engage consultant to validate RFI responses (e.g. technical and commercial performance, on-time delivery performance, etc.);
4. Develop scope and budget for additional maintenance capacity at Hillcrest; and
5. Report back to the TTC Board in Q1 2019 with recommendations.

Contact

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Signature

Collie Greenwood
Chief Service Officer (Acting)

Attachments

Presentation