

Item 8



For Action

Procurement Authorization – Purchase of Wheel-Trans Buses

Date: February 25, 2020
To: TTC Board
From: Chief Vehicles Officer

Summary

This report recommends that the TTC Board authorize the procurement of twenty (20) 6-metre Wheel-Trans buses; one (1) 7-metre Wheel-Trans bus for the purpose of a pilot vehicle; and, subject to approval of the 7-metre pilot bus by the Advisory Committee on Accessible Transit (ACAT), procurement of ninety (90) 7-metre buses.

The Wheel-Trans vehicles will be procured from Creative Carriage Ltd. who were the successful bidder through a joint procurement with Metrolinx as part of the Transit Procurement Initiative (TPI) program. This program allows for best practices and cost savings through economies of scale.

These vehicles are required for fleet replacement and growth as part of the Wheel-Trans 10-Year Strategy and will replace the fleet of oversized 9-metre long 'Friendly' Wheel-Trans buses that have reached the end of their useful life.

Recommendations

It is recommended that the TTC Board:

1. Authorize a contract to Creative Carriage Ltd. for \$28,780,000.00 inclusive of all taxes for the supply and delivery of the following:
 - a. twenty (20) 6-metre ProMaster buses in the amount of \$3,750,000.00 inclusive of all estimated costs including contract change allowances, and applicable taxes for delivery between 2020 and 2022.
 - b. ninety-one (91) 7-metre ProMaster buses in the amount of \$25,030,000.00 inclusive of all estimated costs including contract change allowances, and applicable taxes, as follows:
 1. \$280,000.00 for the purchase of one (1) 7-metre Wheel-Trans bus for delivery in 2020, which includes options and alternatives, to be used as a pilot vehicle for assessment by the Advisory Committee on Accessible Transit (ACAT).

2. Subject to approval by ACAT of the pilot vehicle secured under recommendation 1.b.1, \$24,750,000.00 for the purchase of ninety (90) 7-metre Wheel-Trans buses for delivery in 2020 through 2021.

Implementation Points

Upon approval of this recommendation, Creative Carriage Ltd. will provide a delivery schedule for the twenty (20) 6-metre buses. Staff will work with ACAT and Wheel Trans customers to obtain feedback on the design and configuration of the 7-metre pilot bus. Staff will report back on the delivery schedule and results of the pilot bus through the monthly CEO reports.

Financial Summary

Sufficient funds for the procurement of twenty (20) 6-metre Wheel-Trans buses and ninety-one (91) 7-metre Wheel-Trans Buses are included in the TTC's 2020-2029 Capital Budget & Plan under Program 4.11 Purchase of Wheel-Trans Buses, State of Good Repair Category which will be before City Council for consideration on February 19, 2020. The Purchase of Wheel-Trans Buses total project budget approval is \$50.7 million.

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

Equity/Accessibility Matters

A reliable transit network is critical for equity-seeking groups relying on TTC services to get to work, school, access health services, participate in recreational and cultural services, etc. Studies have shown that people who have less access to public services, including transit, typically have worse economic and health prospects. Access to transit that is equitable, accessible, safe, reliable, and that grows with or ahead of the population will help improve health outcomes, economic prosperity, and equality throughout the City of Toronto, regionally and nationally.

The TTC has a strong organizational commitment to making Toronto's transit system barrier-free and accessible to all. We believe that all customers should enjoy the freedom, independence and flexibility to travel anywhere on the public transit system, regardless of ability. The TTC's commitment to providing accessible transit is at the forefront of its 2018-2022 Corporate Plan and the 2020-2029 Capital Budget & Plan.

The 2020-2029 Capital Budget & Plan includes the TTC's Easier Access Program, which is on track to make all subway stations accessible by 2025 with elevators, wide fare-gates and automatic sliding doors. It also includes several improvements elsewhere across the transit system, including accessible low-floor streetcars, a growing number of accessible bus and streetcar stops, and the accessible buses and Wheel-Trans buses that are the subject of this report.

Procuring new vehicles provides an opportunity to improve designs through the systematic identification and removal of barriers. Throughout the design and development process of all vehicles, including Wheel-Trans buses, the TTC has and will continue to: 1) verify that vehicles meet or exceed all relevant standards under the Accessibility for Ontarians with Disabilities Act (AODA); 2) leverage regional and international best practices; and 3) work closely with the Advisory Committee on Accessible Transit (ACAT) in an attempt to address the unique needs of customers.

Decision History

A presentation entitled Wheel-Trans 10-Year Strategy was before the TTC Board for its consideration on February 25, 2016.

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2016/February 25/Reports/W-Trans 10 Year Strategy Update combined.pdf](http://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2016/February%2025/Reports/W-Trans%2010%20Year%20Strategy%20Update%20combined.pdf)

The Board adopted in principle the Wheel-Trans 10-Year Strategy and further requested that TTC staff report back on specific initiatives related to each of the five objectives of the Strategy.

In September 2016, a progress update was provided on the TTC's Wheel-Trans 10-Year Strategy. The Board adopted the recommendations contained within the report, which included commencing a Family of Services pilot in 2017.

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2016/September 28/Reports/4 Wheel-Trans 10-Year Strategy - September 2016 Update.pdf](http://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2016/September%2028/Reports/4%20Wheel-Trans%2010-Year%20Strategy%20-%20September%202016%20Update.pdf)

In September 2017, the Board approved the procurement of 60 new low floor Wheel-Trans Mini Buses from Creative Carriage Ltd. for delivery in 2018. Purchasing these units brought the total procurement of Mini Buses to eighty (80).

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2017/September 5/Reports/8 PA Purchase 60 Low Floor Wheel-Trans Mini Buses.pdf](http://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2017/September%205/Reports/8%20PA%20Purchase%2060%20Low%20Floor%20Wheel-Trans%20Mini%20Buses.pdf)

In April 2018, the Board received the Wheel-Trans 10-Year Strategy Update with fleet replacement being one of the focal points. Twenty (20) new Mini Buses were delivered, with sixty (60) additional due for delivery throughout 2018.

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2018/April 11/Reports/5 Wheel-Trans 10-Year Strategy April 2018 Update.pdf](http://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2018/April%2011/Reports/5%20Wheel-Trans%2010-Year%20Strategy%20April%202018%20Update.pdf)

In December 2018, the Chair and Vice-Chair of the TTC Board signed a procurement authorization for forty-eight (48) new Mini Buses to be delivered in 2019, forty-five (45) as replacements to the existing Friendly's and three (3) for fleet growth.

Issue Background

The current Wheel-Trans 9-metre Friendly vehicles are reaching the end of their useful life and the TTC needs to procure new vehicles for fleet replacement and growth as part of the Wheel-Trans 10-Year Strategy.

In September 2017, the TTC Board adopted staff's recommendation to procure 6-metre ProMasters as replacements for the 9-metre Friendly buses. These vehicles were procured under a joint procurement with Metrolinx. As of November 2019, TTC procured 128 of the 6-metre ProMaster buses, representing approximately 50% of the Wheel-Trans fleet. All of these vehicles are currently in service.

With this 50:50 fleet mix between the 9-metre Friendly and the 6-metre ProMaster, the TTC has been able to:

- carry customers with larger mobility devices or with medically supported restrictions, which represents approximately 2% of the trips (17,000 trips annually);
- accommodate ridership growth, which is approaching the target of three Passengers Per Hour (PPH); and
- continue operating the Community Bus Program.

The procurement of the 7-metre pilot vehicle will be used to:

- evaluate the accommodation of larger and multiple mobility devices;
- continue the operation of the Community Bus Program; and
- determine if it is a suitable replacement for the remaining 9-metre Friendly buses.

Comments

The Wheel-Trans Fleet Plan is based on the TTC's Wheel-Trans 10-Year Strategy, which was developed through consultation with the ACAT committee and TTC customers. A Fleet and Asset Management Plan was included as part of the 10 Year Strategy. The vehicle criteria recommended, aligned with the terms of reference that Metrolinx included in their Request for Proposal

Wheel-Trans 10-Year Strategy

The TTC's conventional transit services are required to be completely accessible by 2025, in accordance with the *Accessibility for Ontarians with Disabilities Act (AODA)*. This presents an opportunity to change the service delivery model for Wheel-Trans in order to better integrate what has traditionally been two distinct systems (conventional transit and paratransit). Family of Services is a multi-modal approach to service delivery that utilizes Wheel-Trans and conventional transit modes (bus, subway or streetcar services) to complete a trip for Wheel-Trans customers. This approach makes better use of limited resources and adheres to provincial legislation regarding conditional eligibility of paratransit users. The Wheel-Trans 10-Year Strategy includes facility and vehicle improvements that need to be made to accommodate Wheel-Trans customers of the future who will also be travelling on the conventional fixed route network.

Fleet and Asset Management Plan

In 2016, a comprehensive fleet program review was completed by WSP Parsons Brinckerhoff (WSP). The purpose of the study was to develop a data-driven, business needs approach to replace the existing 9-metre Friendly vehicles and to enable a Family of Services approach. The scope of the report determined the condition of the existing fleet of vehicles; identified vehicles that are available in the marketplace that meet the service requirements of the 10-Year Strategy; ‘right sizing’ of the fleet to support the Family of Services concept; and recommended a replacement strategy for the Wheel-Trans vehicles. The objective was to provide replacement vehicles that were more suited to the expected mix of ambulatory and non-ambulatory riders with the goal of maximizing accessibility while decreasing operating and maintenance costs.

Metrolinx - Transit Procurement Initiative

The Transit Procurement Initiative (TPI) is a Metrolinx program. The TPI team has worked with 42 transit agencies across Ontario at various times since the program began in 2006. Since the inception of the program with the Ministry of Transportation in 2006, and subsequent transfer to Metrolinx in 2008, TPI has helped small, medium and large transit systems across the province save money through joint procurements. Synergies are created by combining the experience and knowledge of bus fleet managers with vehicle specification, procurement and operational experts, creating a performance-based specification to maximize operational efficiency, increase purchasing power, and decrease capital and operational costs.

In July 2016, the TTC entered into a Multi-Year Governance Agreement established by Metrolinx in order to join the Transit Procurement Initiative to participate in any joint procurement initiatives undertaken by TPI.

The TTC’s first joint procurement with Metrolinx was the 6-metre ProMaster purchased through Creative Carriage Ltd. This contract expires on March 31, 2020.

6-metre Wheel-Trans Buses: Performance

The 6-metre ProMaster has been in service for 2 years and has performed as expected. The benefits of this vehicle as measured compared to the 9-metre Friendly is listed below.

Benefits Realized:

| | Legacy 9m “Friendly” Bus | New 6m ProMaster Bus | |
|---------------------------------------|---------------------------------------|----------------------------|---|
| Design Life | 10-12 years | 5-6 years | 28% Lower Capital Cost |
| Purchase Cost | \$370K | \$180K | |
| Rebuild Cost | \$130K | 0 | 20% Lower Fuel Cost 31% Lower CO |
| Capital Cost (12yr) | \$500K | \$360K | |
| Fuel Type & Consumption | Conventional Diesel 29.8L / 100 km | Gasoline 23.7L / 100 km | >600% Improved Reliability |
| Reliability (MDBF) as of Dec. 2019 | 11,000 km | 67,900 km | |

While the 6-metre ProMaster achieves the benefits (lower operating and maintenance costs) projected by the 2016 report by WSP, the optimum fleet mix includes this smaller 6-metre vehicle as well as a slightly larger bus that delivers similar benefits, but will also allow for multiple larger mobility devices and for use as the Community Bus.

Optimum Fleet Mix

The current fleet mix includes one hundred and twenty-eight (128) 6-metre ProMasters and one hundred and twenty-seven (127) 9-metre Friendly buses. The TTC has found that with this roughly 50:50 fleet mix, between the larger 9-metre Friendly and the 6-metre ProMaster, the TTC has been able to:

- carry customers with larger mobility devices or with medically supported restrictions, which represents approximately 2% of the trips (17,000 trips annually). Neither the 6-metre ProMaster or contracted services are able to accommodate this;
- accommodate ridership growth, which is approaching the target of three Passengers Per Hour (PPH); and
- continue operating the Community Bus Program.

Potential New 7-Metre Wheel-Trans Bus

On October 2, 2018, Metrolinx's Transit Procurement Initiative released an RFP for an 8m Low Floor Specialized Transit Bus (RFP-2018-TPI-067). This RFP included an option to provide a 7-metre Low Floor Bus. The 7-metre option was of interest to the TTC in order to provide a vehicle slightly larger than the 6-metre ProMasters, but smaller than the soon to be retired 9-metre Friendly vehicles.

A total of 14 Transit Agencies participated in this joint procurement project (Barrie, Burlington, Cornwall, Durham Region, Halton Hills, Kenora, Milton, North Bay, Oakville, Sarnia, St. Catharines, Thunder Bay, Toronto Transit Commission and York Region). Each agency was represented on the Steering and Technical Committees, with each agency entitled to one vote. The TTC also participated on the Evaluation Committee, which included Barrie, Durham, Halton Hills, and Oakville.

The RFP was issued publicly via MERX and closed on October 2, 2018. A total of 3 proponents (Creative Carriage Ltd., Crestline Coach and Overland Custom Coach) downloaded the specifications, however only 2 proposals were received (Creative Carriage Ltd and Crestline Coach). The Metrolinx procurement group completed an administrative review of the bids to determine compliance with mandatory requirements. One of the bidders (Crestline Coach) was considered non-compliant.

The Evaluation Committee completed its evaluation of the bid on October 30, 2018. Based on the results, the technical proposal met the minimum requirements of the RFP, and the overall proposal score was 81%. The results were presented to the Steering Committee, who agreed to award the Master Agreement to Creative Carriage Ltd.

Metrolinx signed the Master Agreement with Creative Carriage Ltd. for the supply of low floor specialized transit buses, including the 7-metre option, on November 13, 2018. The contract is for 2 years.

As noted earlier Creative Carriage Ltd. was also the successful bidder for the 6-metre ProMaster. Creative Carriage Ltd. successfully completed the delivery of all one hundred and twenty-eight (128) 6-metre ProMaster vehicles to the TTC.

The 7-metre low floor bus presented in the RFP is similar to the 6-metre ProMaster, including the same manufacturer. This provides the TTC with common parts and maintenance programs between the 6-metre and 7-metre fleets.

Some of the key features of the 7-metre ProMaster are listed below:

1. Specifications

- RAM 3500 ProMaster Chassis with a 3.6L Pentastar V6 gasoline engine;
- Front wheel design (Original Equipment Manufacturer (OEM) Engineered);
- Cutaway design, manufactured by Arboc Specialty Vehicles (purchased by New Flyer);
- Can accommodate up to 5 wheelchairs and 10 passengers;
- Approximately 50% increase in interior passenger space compared to the 6-metre ProMaster bus;
- Side and rear ramp;
- Bi-fold side and rear doors;
- Fold away seats;
- Complete bumper to bumper warranty of 3 years/60,000 kilometres with optional extended OEM warranty;
- Chassis warranty of 5 years/160,000 kilometres for both basic and powertrain components; and
- The 7-metre ProMaster bus is designed to meet all requirements laid out in Ontario Regulation 629 (Accessible vehicles) and CSA Standard D409-16.

2. Environmental

For every 7-metre ProMaster replacing a Friendly vehicle it is estimated that there will be a 28% reduction in greenhouse gas emissions.

3. Financial Impact

Unlike the 6-metre ProMaster bus, there is no anticipated net capital cost avoidance by replacing a Friendly bus with a 7-metre ProMaster; however, it is estimated that there will be a 17% reduction in fuel cost.

Customer and Stakeholder Evaluation of the 7-metre ProMaster Bus

On January 24, 2020, the TTC assessed the 7-metre ProMaster bus with major stakeholders, including ACAT, the TTC's Joint Health and Safety Committee members, Wheel-Trans Operators, maintenance employees, and the Training Department. Overall feedback from the stakeholders indicated there was potential for the vehicle to be a suitable replacement for the remaining 9-metre Friendly buses, specifically:

- additional space in the vehicle;

- interior configuration, including the number of ambulatory and wheelchair positions;
- flexibility that the flip up seats provide;
- increased leg room in the ambulatory seating positions;
- number of windows in the vehicle;
- similarity of the vehicle to the 6-metre ProMaster; and
- complete low floor design throughout the length of the vehicle.

Several suggestions were received that will be incorporated into the pilot for the evaluation, which are intended to enhance the rider experience. For example, arm rests, climate control in the passenger area, enhanced lighting, an area for walker storage, and the relocation of one of the ambulatory seats rearward to provide more space for a wheelchair.

Two concerns were identified by the ACAT members, both related to the ramps. Although both the side and rear ramps meet the requirements set out in Ontario Regulation 629 (Accessible vehicles) and CSA Standard D409-16, members were concerned with the following:

- The length of the side ramp. The members concern is that the side ramp is too long and could potentially cause an impediment when there is limited space during exiting; and
- The slope of the rear ramp. The members concern is the steepness of the rear ramp, especially during exiting.

Staff will work with ACAT and the vendor to address the above concerns, and the vehicle will be presented to the ACAT members for a final review and to allow the members to experience the ride quality of the vehicle.

In addition, the TTC will place the 7-metre pilot bus in service to gather feedback from a wider audience.

Procurement Plan

The TTC's Wheel-Trans fleet replacement program was established with the objective of modernizing the fleet to accommodate the current and anticipated mix of ridership, to reduce operational and maintenance costs and in order to continue to operate the Community Bus Program.

As part of the TTC's efforts to green all of its revenue and non-revenue fleets, staff is investigating options for zero emission buses for the Wheel-Trans fleet. Currently, there are no known options on the market for all-electric buses that are in the size range (6-metre to 7-metre) required for Wheel-Trans operations and that comply with the Government of Canada's Commercial Motor Vehicle Safety Standards. A Request for Interest will be issued in 2020 to formally survey the market's plans to supply suitable 6 to 7-metre-long all-electric buses. Accordingly, the TTC will develop a Green Fleet Plan for Wheel-Trans and report back to the TTC Board as options become available.

In the meantime, during this transition, the TTC is participating in Metrolinx's Transit Procurement Initiative (TPI) program for the purchase of Wheel-Trans vehicles. This program allows the TTC to benefit from the combined experience and best practices from multiple transit agencies across Ontario.

Contact

Dwayne Geddes, Head – Wheel-Trans
416-393-3095
dwayne.geddes@ttc.ca

Bem Case, Head – Vehicle Programs
416-397-8375
bem.case@ttc.ca

Signature

Rich Wong, Chief of Vehicles
416-393-3564
rich.wong@ttc.ca