



Decommissioned Buses – Responses to TTC Board Motions

Date: July 17, 2024

To: TTC Board

From: Chief Transportation and Vehicles Officer

Summary

The purpose of this report is to address motions adopted at the TTC Board Meeting on December 20, 2023, with respect to the report titled “Procurement Authorization – Sale and Removal of TTC Buses”.

The motions relate to the following matters and are addressed in numerical order throughout the report:

1. The feasibility of utilizing decommissioned buses on a temporary basis as mobile warming and/or cooling centres, with operating costs to be borne by Shelter, Support and Housing Administration.
2. To issue a publicly advertised Request for Expression of Interest to identify potential y parties who will re-use, repair and/or refurbish TTC decommissioned buses, in order to prolong the useful life of these assets and their contribution to the circular economy.
3. Authorizing staff to sell remaining decommissioned TTC buses for recycling/scrap only after making reasonable efforts to identify parties that will re-use, repair and/or refurbish the buses.
4. To retain one Orion bus for historical purposes, and reach out to the Halton County Radial Railway Museum to determine their interest in obtaining a bus.

In addition to the motions by the TTC Board, City Council requested that City agencies and corporations, including the TTC, consider the donation of surplus or end of life vehicles to the Government of Ukraine for humanitarian purposes. TTC staff is working with City staff to review policies with respect to donation of assets locally and internationally.

Financial Summary

1. Feasibility of utilizing decommissioned buses on a temporary basis as mobile warming/or cooling centres with operating costs to be borne by Shelter, Support, and Housing Administration (now named Toronto Shelter and Support Services).

The estimated costs to refresh safety- and non-safety-critical systems on buses at end of life is \$268,991 per bus. This is comprised of \$240,000* to refresh safety- and non-safety-critical systems and \$28,991** to rebuild the HVAC system to provide reliable heating and cooling.

* estimate based on the last two years of Orion VII rebuild scope (2017-2018) and 2023 rebuild costs.

**estimate based on 2024 budgeted labour rates and 2017-2018 material cost.

The TTC introduced the winter transport bus initiative between November 16, 2023 and April 15, 2024 using revenue buses that were near the end of their bus lifecycle. The initiative incurred \$0.9 million in ongoing maintenance and support costs, excluding one-time costs to operate an average of one transport and five warming buses daily, at an average monthly cost of \$30,000 per bus. An annual impact of approximately \$1.5 million to support the warming and/or cooling center initiatives is anticipated as summarized in Table 1 below:

Table 1: Costs to Operate Mobile Warming and/or Cooling Centres

| | Winter Transport Bus Actuals | Anticipated Summer Transport Bus Cost | Total Annual Impact |
|---|------------------------------|---------------------------------------|---------------------|
| Fixed Cost for Shelter Buses | | | |
| Vehicle Maintenance & Fuel | 113,999 | 68,399 | 182,398 |
| Operators and Supervisors | 479,716 | 287,830 | 767,546 |
| Contract Security | 196,638 | 117,983 | 314,621 |
| Portable Washrooms | 21,035 | 12,621 | 33,656 |
| Increased Special Constables Presence | 41,736 | 25,042 | 66,778 |
| Total Fixed Cost for Shelter Buses | 853,124 | 511,875 | 1,364,999 |
| Fixed Cost for Transport and Shuttle Buses | | | |
| Vehicle Maintenance & Fuel | 22,800 | 13,680 | 36,480 |
| Operators | 63,748 | 38,249 | 101,996 |
| Total Fixed Cost for Transport and Shuttle Buses | 86,547 | 51,928 | 138,476 |
| Total Cost of Transport Bus Initiative | 939,672 | 563,803 | 1,503,475 |

Funding has been included in the 2024 Operating Budget for the continued winter transport bus initiative through to the end of 2024 but this does not cover any funding to cover incremental costs of \$0.6 million for the addition of providing cooling centers between June 15 and September 15. Toronto Shelter and Support Services (TSSS) have also indicated that they will not be able to cover these costs due to unavailability of funding.

3. Authority to recycle/scrap decommissioned buses after reasonable efforts to identify parties that could reuse buses.

The anticipated revenue under the Langille's Scrap & Cores Inc. (Langille's) contract is \$5.7 million for a five-year term between 2024 and 2028, for the sale of up to 915 TTC buses. Per the contract, an average proceed of \$6,200 per bus would be foregone or delayed if TTC buses are reused, repaired and/or refurbished instead.

There is no financial impact associated with the implementation of Motions 2 and 4.

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

Equity/Accessibility Matters

As a leader in providing accessible public transit in Toronto, the TTC is dedicated to offering reliable, safe, and inclusive services for all. The TTC expects its employees to perform their roles in a manner that is equitable, respectful, inclusive and safe.

Addressing community well-being challenges is complicated by the broader societal issues in Toronto. Similar to other public services, innovative short-term and long-term solutions are required to support those in need. The TTC has proactively partnered with the City of Toronto M-Dot Program, Shelter Support and Housing, and community agencies to address the needs of individuals who are underhoused and experiencing mental health and addiction issues. This partnership ensures that equity and compassion are central to meeting the needs of the community and TTC operations.

The TTC is committed to advocating and promoting equity and inclusion across all programs while meeting the needs of customers, contractors, employees, and the broader community.

Decision History

At the September 26, 2023 Board meeting, the TTC Board received the TTC's Partnership Approach to Community Safety, Security, and Well-Being on Public Transit report. The report provided an update on the evaluation of current strategies and resources supporting community safety, security, and well-being throughout the TTC's transit network and based on the evaluation of the TTC's experience to date, recommended the strategies and resources required for the fall 2023/winter 2024 season. The TTC Board adopted the report's recommendations for ongoing community safety strategies and resources, directing that funding to sustain these initiatives be included in the TTC's 2024 Operating Budget submission. The TTC Board also adopted additional motions requesting a report back in Q4 2023 that are the subject of this report, as outlined in the TTC Board Decision.

- Staff Report: [TTC's Partnership Approach to Community Safety, Security, and Well-Being on Public Transit Report](#)
- TTC Board Decision: [TTC's Partnership Approach to Community Safety, Security, and Well-Being on Public Transit Report](#)

At the December 20, 2023 Board meeting, the TTC Board received a report on the Sale and Removal of TTC Buses with the recommendation to authorize the award of a contract for the sale and disposal of up to 915 TTC buses for a five-year term commencing upon notification of award to Langille's Scrap & Cores Inc. in the total amount of \$5,673,283.65 in revenue proceeds, inclusive of HST. The recommendation was approved and a number of motions were adopted, which are addressed in this Board report.

- Staff Report: [Procurement Authorization – Sale and Removal of TTC Buses](#)
- TTC Board Decision: [Procurement Authorization – Sale and Removal of TTC Buses](#)

Issue Background

The recent use of buses to support the 2023-2024 winter transport bus initiative with the Toronto Shelter and Support Services (TSSS), formerly named Shelter, Support, and Housing Administration (SSHA), and the recent Procurement Authorization for the Sale and Removal of TTC Buses resulted in questions from the Board regarding the useful disposition of decommissioned buses prior to disposal.

Comments

1. Feasibility of utilizing decommissioned buses on a temporary basis as mobile warming/or cooling centres with operating costs to be borne Toronto Shelter and Support Services:

Decommissioned Buses

The TTC currently maintains buses to a 12-to-15-year life cycle. At this age, each bus has accumulated mileage upwards of one million kilometres. While it is possible to continue the use of these buses beyond their intended life cycle, a Life Extension Overhaul (LEO) is required to ensure their safety and reliability.

Buses must remain licensed, maintained and subject to semi-annual Ministry of Transportation of Ontario (MTO) audits for their continued use on the road. Therefore, technically, the use of “decommissioned” buses is not possible. However, the use of buses that are near the end of life is possible with ongoing investment.

Life extension extends the bus life cycle by refreshing safety- and non-safety-critical systems. The base scope of work to ensure vehicles remain compliant with MTO safety requirements includes the vehicle structure (floors and frames), the brake, steering, engine and transmission systems. The average cost per bus is approximately \$240,000, which includes material and labour costs.

If required to provide reliable heating and cooling, a rebuild of the HVAC system is also recommended as part of the scope. The cost per bus for HVAC rebuilds is approximately \$28,991, in addition to the base cost of a life extension.

Revenue Buses

On average, five-to-seven revenue hybrid-electric buses were used to provide transport and act as warming centres when shelters were at capacity. These buses were nearing the end of life and were 10-to-11 years in age.

To supply clean and sustainable energy to heat the buses, and to comply with City of Toronto *Idling Control By-Law – Chapter 517, By-law 775-2010*, these buses were equipped with portable battery packs and mobile electric heaters. This allowed the vehicles to be powered off while parked.

Due to the large electrical demand from the heaters, the limited capacity of the portable battery packs was insufficient to warm and sustain the temperature of the bus over eight hours.

To remedy this issue, the use of hybrid-electric buses was discontinued in favour of newer, fully electric buses. The number of and the capacity of the batteries on fully electric vehicles were able to comfortably power the HVAC system over an eight-to-10-hour period.

Cost Considerations

Total operating cost from the winter transport bus initiative between November 16, 2023 and April 15, 2024, was approximately \$0.9 million excluding one-time startup costs. These costs included but were not limited to staffing (TTC Operators, Supervisors, security), portable washrooms, and cleaning.

Extrapolating these costs to include warming and cooling centers for the proposed periods is estimated to increase to a total of \$1.5 million per year, requiring an additional \$0.6 million in funding to extend the use of buses over the summer season:

- Warming Centres: November 15 to April 15
- Cooling Centres: June 15 to September 15

The TTC was advised by the City that the number of cooling spaces over the summer is not a concern and that City resources are not available to support buses that act as mobile cooling centres overnight.

Summary

The use of decommissioned buses as temporary warming and cooling centres is not possible due to MTO licensing requirements. However, the use of revenue buses that are still licensed, active and nearing the end of life is possible with ongoing investment. As identified, the use of fully electric buses is required to limit emissions.

Depending on the number of buses to be used for future warming and/or cooling initiatives, impacts on maintenance spare ratios will need to be assessed. The buses used for the 2023/2024 winter pilot were absorbed within the current fleet size. If additional buses (greater than 10 buses) are required to expand the program to include

warming and cooling, a dedicated fleet should be considered. Ten buses for these programs equates to approximately 0.5% of the TTC’s bus fleet and approximately 0.7% of peak daily service. A corresponding increase in the spare ratio through additional bus procurements is recommended if warming and cooling centre are to be provided on an annual and ongoing basis. The cost of a new battery-electric bus (or eBus) is approximately \$1.5 million.

2. Issuance of a Request for Expression (RFE) to identify potential parties to re-use Nova buses:

The TTC’s Procurement and Category Management Department posted the Request for Expression (RFE) document on Bonfire and MERX website. The RFE will be posted from June 28, 2024 to December 30, 2024 and results will be communicated back to the Board via a Briefing Note.

3. Authority to recycle/scrap decommissioned buses after reasonable efforts to identify parties that could re-use buses:

The TTC’s Materials Management Department will review the results of the RFE before initiating the decommissioning process to determine if there are any expressions of interest from external parties, which could reduce the number of scrapped buses.

4. Donation of one Orion bus to the Halton County Radial Railway Museum:

TTC staff contacted the Halton County Radial Railway Museum to determine their interest in maintaining and displaying one Orion bus for historical purposes. The museum respectfully declined based on the fact that its focus is on rail vehicles.

Instead of donating an Orion bus to the museum, TTC staff have identified Orion buses #8079 and #8091 to be retained for historical purposes. The two buses were identified for preservation to ensure parts availability.

The TTC’s historical fleet will now consist of:

| Fleet Quantity | Vehicle Number | Location |
|---|-----------------------|------------------------------|
| 1 Peter Witt Streetcar | 2766 | Harvey Shop |
| 2 Presidents’ Conference Committee (PCC) Streetcars | 4500, 4549 | Harvey Shop |
| 1 Articulated Light Rail Vehicle (ALRV) Streetcar | 4207 | Roncesvalles Carhouse |
| 2 Canadian Light Rail Vehicle (CLRV) Streetcars | 4124, 4081 | Harvey Shop |
| 2 General Motors Buses | 2252, #TBD | McNicoll Garage; Harvey Shop |

| Fleet Quantity | Vehicle Number | Location |
|-----------------------|-----------------------|----------------------|
| 2 Orion Buses | 8079, 8091 | Currently in service |
| 9 SRT Cars | #TBD | McCowan Yard |

Storing additional buses pending disposition of those that have reached end of their useful life is also becoming a challenge. New buses arriving in late 2024 and early 2025 will require storage and maintenance bays. Any significant delays beyond year-end will increase challenges with yard management.

Contact

Jamal Richardson, Head – Stations
416-885-2838
jamal.richardson@ttc.ca

Signature

Richard Wong
Chief Transportation and Vehicles Officer