



Wheel-Trans Bus Procurement

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Background: Decision History

September 2017

TTC Board approved procurement of 6-metre Dodge ProMaster vehicles as replacements to the aging 9-metre 'Friendly' Wheel-Trans fleet.

2017 - 2019

TTC procured 128 new 6-metre ProMasters through Metrolinx's Transit Procurement Initiative



Background: Benefits & Limitations of New 6m Bus

Program Delivery: All 128 new 6m ProMasters were delivered and in service by December 2019.

Benefits Realized:

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

**28% Lower
Capital Cost**

**20% Lower Fuel Cost
31% Lower CO_{2e}**

**>600% Improved
Reliability**

6m Bus Limitations: Size and Number of Mobility Devices



Optimum Fleet Mix

The current 50:50 mix with both small and large vehicles in the fleet allows for optimum operational flexibility. The new smaller vehicles have all of the benefits mentioned previously and the larger vehicle achieves the following:

- ✓ Ability to carry customers with larger mobility devices or medically supported restrictions
- ✓ Increase capacity to enable growth target of 3 Passengers Per Hour (PPH)
- ✓ Continue operating the Community Bus Program

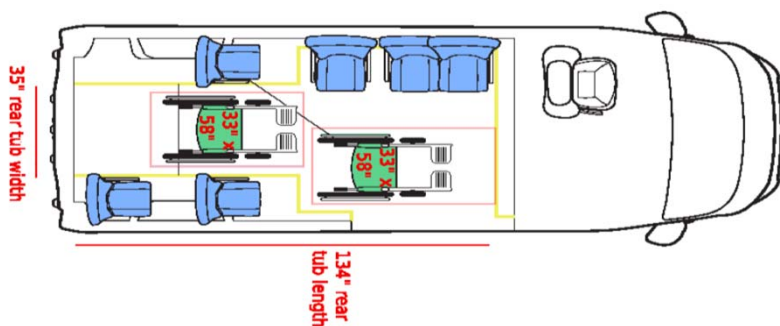
Current Fleet Mix

Vehicle Type	Units
6m ProMaster	128
9m Friendly	127
Total Fleet Size	255

The current fleet mix optimizes resources and operational flexibility; however, the remaining 9m Friendly buses are too large in terms of both capacity and turning radius and must be retired as they have reached end-of-life.



Optimum Fleet Mix: 6m Bus is Proven for 50% of Service

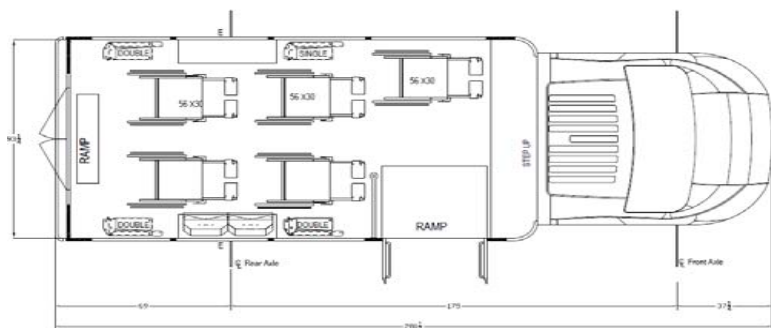


New 6m ProMaster Bus	
Fuel	Gasoline
Length	20 feet / 6 metres
Capacity	6 ambulatory / 2 mobility devices
Fuel consumption	23.7L / 100 km
Average Age	1 year
MDBF	67,900 km (to Dec, 2019)
Fleet size (Dec, 2019)	128
GVWR (lbs)	8,900 lbs

6m Bus Limitations: Size and Number of Mobility Devices



Optimum Fleet Mix: Potential New 7m Wheel-Trans Bus



7m ProMaster Bus

Design	Cutaway chassis low floor design Front Wheel Drive Fiat Chrysler Promaster 3500
Manufacturer Supplier	Arboc Specialty Vehicles Creative Carriage
Fuel	Gasoline
Length	23.4 feet / 7 metres
Capacity	9 ambulatory / 5 mobility devices
Fuel consumption	24.8L / 100 km (based on Altoona testing)
GVWR	9,350 lbs

Current Limitations:

- Requires pilot development to improve ramp access at the side and rear, lighting, passenger alarms, etc.



Recommendations

Authorize a contract to Creative Carriage for supply of:

1. Twenty (20) 6-metre ProMaster buses; and
2. Ninety-one (91) 7-metre ProMaster buses, including one pilot vehicle and 90 production units.

The 7-metre production units to be ordered only with written endorsement of the pilot vehicle by ACAT.



Next Steps: Future Green Wheel-Trans Buses

Currently there are no known options on the market for all-electric buses that are in the size range required for Wheel-Trans operations.

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.



