Minding the Gap Automated Transit Shuttle Pilot in the City of Toronto

June 17, 2019

Prepared by:

Fahad Khan
Project Lead, Automated Vehicles
416-397-9710
Fahad.khan@Toronto.ca
@khanfhk

Lindsay Wiginton
Project Manager, Automated Vehicles
416-397-9709
Lindsay.wiginton@toronto.ca
@L_wig

Ryan Lanyon
Manager, Policy and Innovation
Transportation Services
416-392-1799
Ryan.lanyon@toronto.ca
@ryan_lanyon

Project Background

- The City of Toronto is taking a **transit-centric approach** to preparing for automated vehicles

- Funding from Transport Canada's Program to Advance Connectivity and Automation in the Transportation System (ACATS) to pilot an **automated transit shuttle**

- City Council authority in July 2018

TORONTO

streetsto

Purpose

Photo: City of Vancouver

Test the ability of an automated transit shuttle
to fill an **existing unmet need** in the **transit system**

Minding the Gap: Project Partners

Contributing Partners

- City of Toronto
  - Transportation Services (Project Manager)
  - Economic Development & Culture (Economic Development Strategy Lead)
- TTC
  - Operators
  - Project Support
- Metrolinx
  - Operators
  - Project Support

Evaluating Partners

- Ryerson University, School of Urban and Regional Planning
  - Consumer research
- University of Toronto Transportation Research Institute (UTTRI)
  - Travel demand and traffic impacts

Other Partners

- CUTRIC
  - Route modelling

Service Design Principles

1. Safe

The service will offer improved safety compared to conventional services and be operated without harm to riders, neighbours, other road users, operators, and property.

2. Accessible

All people who wish to use the service can do so without limitation.

3. Service-oriented

The service is reliable and affordable and provides an attractive travel option for residents and visitors.

4. Learning

The project is designed for institutional and public learning and allows for in-course adjustments based on observed results and community feedback.

5. Low-impact

The service is quiet, low-emissions, and well-integrated into the neighbourhood.

Minding the Gap: Project Stages

1. Set-up, Exploration, and Learning (April 1, 2018 - March 31, 2019)

2. **A) Service Planning & Procurement (April 1, 2019 - March 31, 2020)**

    B) Economic Development Strategy (April 1, 2019 - March 31, 2020)

3. Service Preparation (April 1, 2020 - August 31, 2020)

4. Service Launch (September 1, 2020 – March 31 or August 31, 2021)

5. Evaluation (April 1, 2021 - February 28, 2022)

6. Knowledge Transfer and Exchange (KTE)

Pilot Project Objectives

Capacity building & learning for City, TTC, Metrolinx

To **increase understanding and knowledge** of:

1. The technical requirements to operate an automated shuttle
2. The administrative requirements to deliver service through an automated shuttle
3. The interaction of an automated shuttle in the transit and transportation system
4. Human response to an automated shuttle
5. The value of an automated shuttle service in the transit and transportation system

Further, to:

6. Increase **public support** for the use of innovation in the public transit system
7. Develop a plan to **increase the attractiveness of Toronto** for investment in the development and export of automated transit vehicle technology
8. **Provide leadership** in automated vehicle preparedness at the municipal level through knowledge transfer and exchange

TORONTO

streetsto

Service Concept

Area unserved by transit

Major transit station
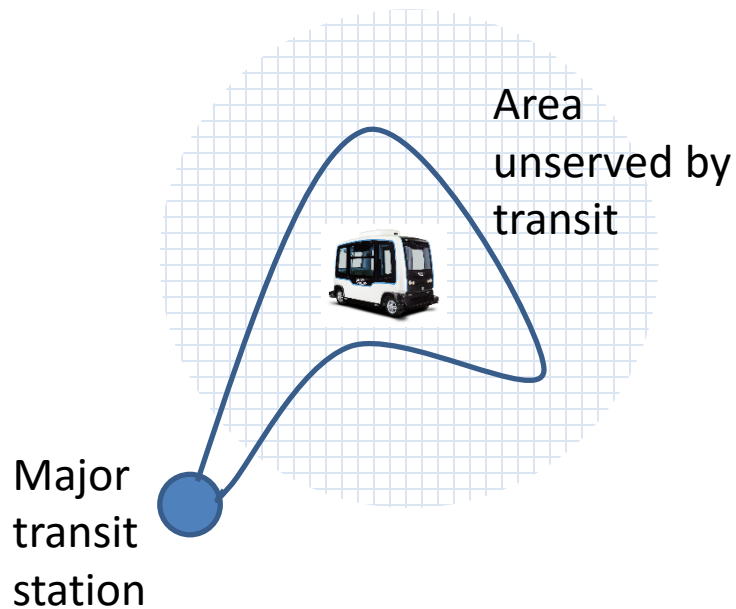
- Weekday peak hour service
- Weekend TBD

- 6-12 months
- Mixed traffic
- 8-12 passengers
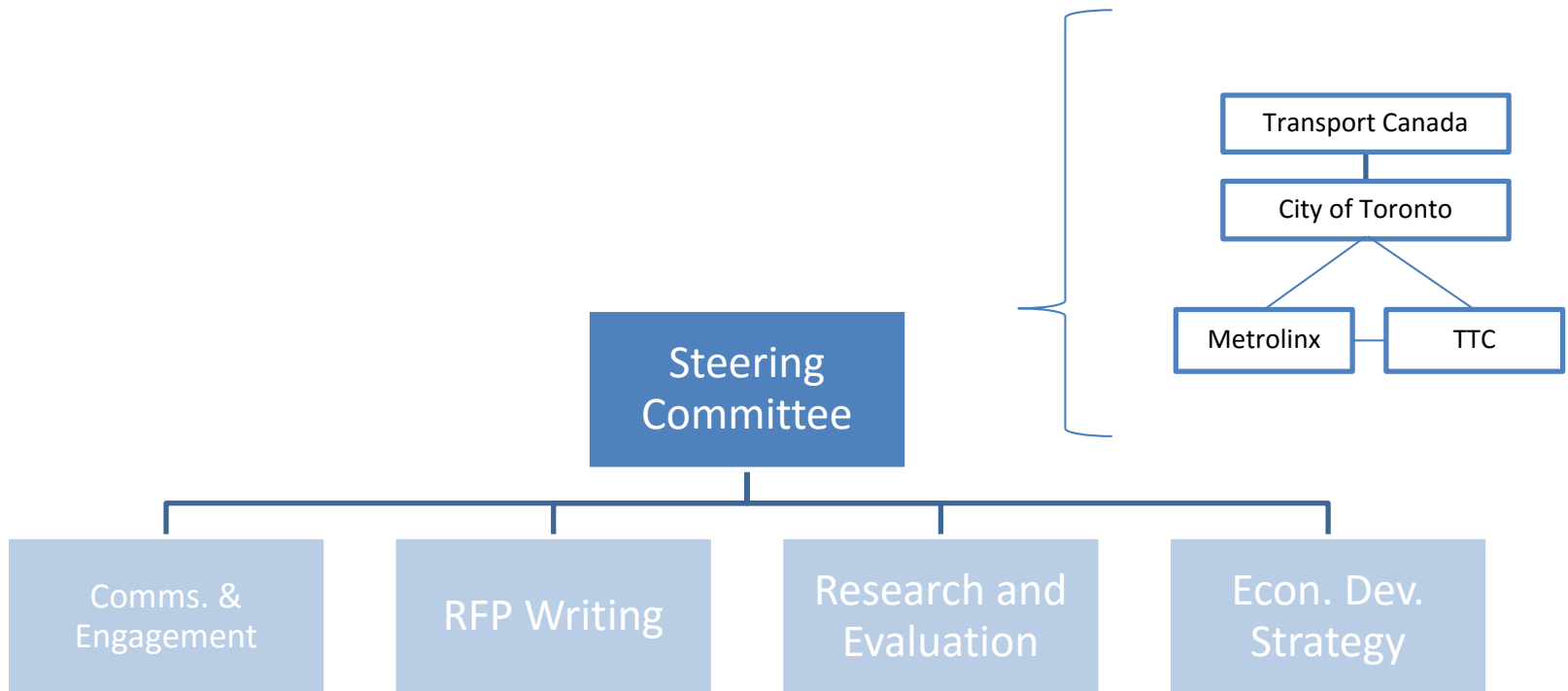- Electric propulsion (anticipated)

RFI SUMMARY

Submissions Received

- Operator/shuttle manufacturer partnerships – 4 partnerships, 3 manufacturers

- Shuttle manufacturer – 1

- Conventional vehicle with aftermarket kit – 1

- Infrastructure and consulting services – 6

Examples of shuttles on the market for illustration purposes only

Governance

Transport Canada → City of Toronto → Metrolinx / TTC

Steering Committee
- Comms. & Engagement
- RFP Writing
- Research and Evaluation
- Econ. Dev. Strategy

Public Opinion Survey (Ryerson Transform Lab)

- Higher interest in AVs among young people

- Hesitancy about the use of automation in public transit

- Preference for the government to monitor rather than actively promote or postpone the implementation of AVs

- Strong interest in improved road safety

- 19% had heard of the Toronto shuttle initiative

NEXT STEPS

Request for Proposals

- Target issuance date: October 2019
- Target in-service date: August/September 2020

Economic Development Strategy

- **Explore the potential for an automated transit vehicle & services ecosystem in Toronto and strategy to support**

- Report completion: late Fall 2019
- Lead division: Economic Development

Lessons & Challenges So Far

- Finding a first-mile, last-mile gap that meets technical shuttle requirements

- New technology that's evolving quickly

- Harnessing project partner interests and assets

- Balancing flexible and prescriptive requirements in procurement

TORONTO

streetsto

For more information:

https://www.toronto.ca/services-payments/streets-parking-transportation/automated-vehicles/automated-vehicles-pilot-projects/

Lindsay Wiginton
Project Manager, Automated Vehicles
416-397-9709
Lindsay.wiginton@toronto.ca
@L_wig

Fahad Khan
Project Lead, Automated Vehicles
416-397-9710
Fahad.khan@Toronto.ca
@khanfhk

Ryan Lanyon
Manager, Policy and Innovation Transportation Services
416-392-1799
Ryan.lanyon@toronto.ca
@ryan_lanyon