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

June 17, 2019

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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
Purpose

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

Photo: City of Vancouver
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

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
Service Concept

- 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

Steering Committee

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

Transport Canada  City of Toronto  Metrolinx  TTC
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
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