Automated Shuttle Trial Serving the West Rouge Community

A new kind of local transit service

Convenient | Safe | Quiet |

Zero Emissions | Accessible

Online Information Panels for Public Consultation

Phase 1: September-October 2019

toronto.ca/AVshuttle

(v13)

INTRODUCTION

The City of Toronto, TTC, and Metrolinx are working towards a trial public transit service to connect local residents to and from Rouge Hill GO station.

The temporary shuttle service would be provided on a route through residential streets not currently served by conventional transit.

The small electric shuttle would be an automated vehicle (AV) that is mostly self-driving with an onboard human attendant at all times.

Example of an automated shuttle pilot project in Candiac, Quebec

Funding provided by

Transports Canada
Transport Canada
TORONTO

Delivered in partnership with

METROLINX

PURPOSE OF THE TRIAL

To test the ability of an automated transit shuttle to fill an existing unmet need in the transit system.

Benefits of Automated Shuttles

This type of "first and last mile" transit service is being offered as a **convenient** alternative choice for residents, who might otherwise drive to the nearest transit station. As a result, automated shuttles could **reduce future local traffic congestion** and **parking lot demand.**

The shuttles are **zero-emissions**-and more **efficient** to run with low numbers of riders compared to a traditional bus service.

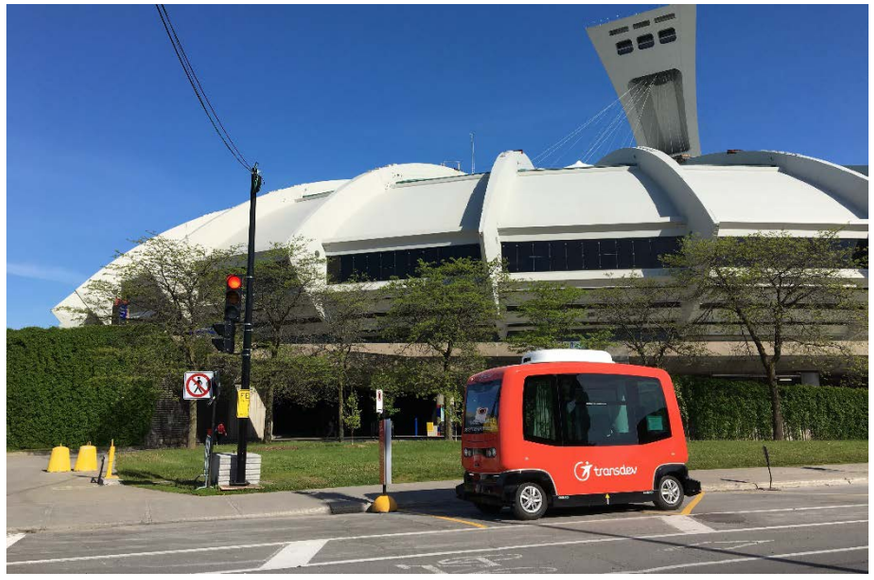
ABOUT THE AUTOMATED SHUTTLE

We are currently preparing a request for proposals for automated shuttle vendors to provide a vehicle for this trial. The likely features of the vehicle include the following:

- Space for 8-12 passengers
- Low speed (approximately 20 km/h)
- Electric powered (quiet and zero-emissions)
- Comply with the Accessibility for Ontarians with Disabilities Act (AODA) including accommodating people using mobility devices like strollers, walkers and wheelchairs

As an automated vehicle (AV) it will be **mostly self-driving** when following a fixed route. Some situations may require an operator to take control of the vehicle, such as maneuvering around improperly parked vehicles in the travel lane.

Automated shuttle pilot in Montreal



SAFETY IS THE FIRST PRIORITY

Montreal, Quebec

The shuttle route will be designed with safety as the top criteria, such as avoiding school zones, complex railway crossings, high-volume traffic areas, and busy or complex intersections.

The vehicle will travel at a maximum speed of approximately 20 km/h.

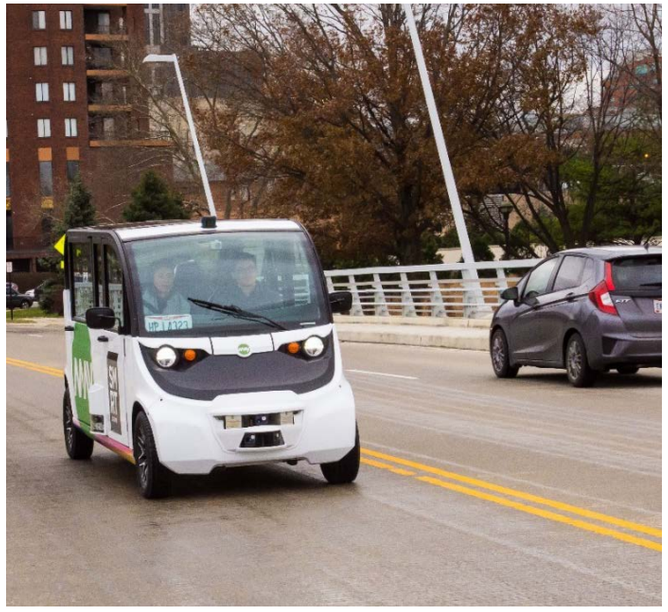
The automated shuttle's sensors will be rigorously tested and proven to reliably recognize other vehicles, pedestrians and cyclists. It will come to an immediate controlled stop if anything comes into its path.

SAFETY IS THE FIRST PRIORITY (CONTINUED)

Although the specific vehicle is not yet selected, we will seek vendors who have already demonstrated an excellent safety track record around the world where they have been deployed.

The shuttle service will also have a human attendant on board and human monitoring at all times, to add an additional layer of customer service, comfort and assurance.

Taipei, Taiwan



Columbus, Ohio

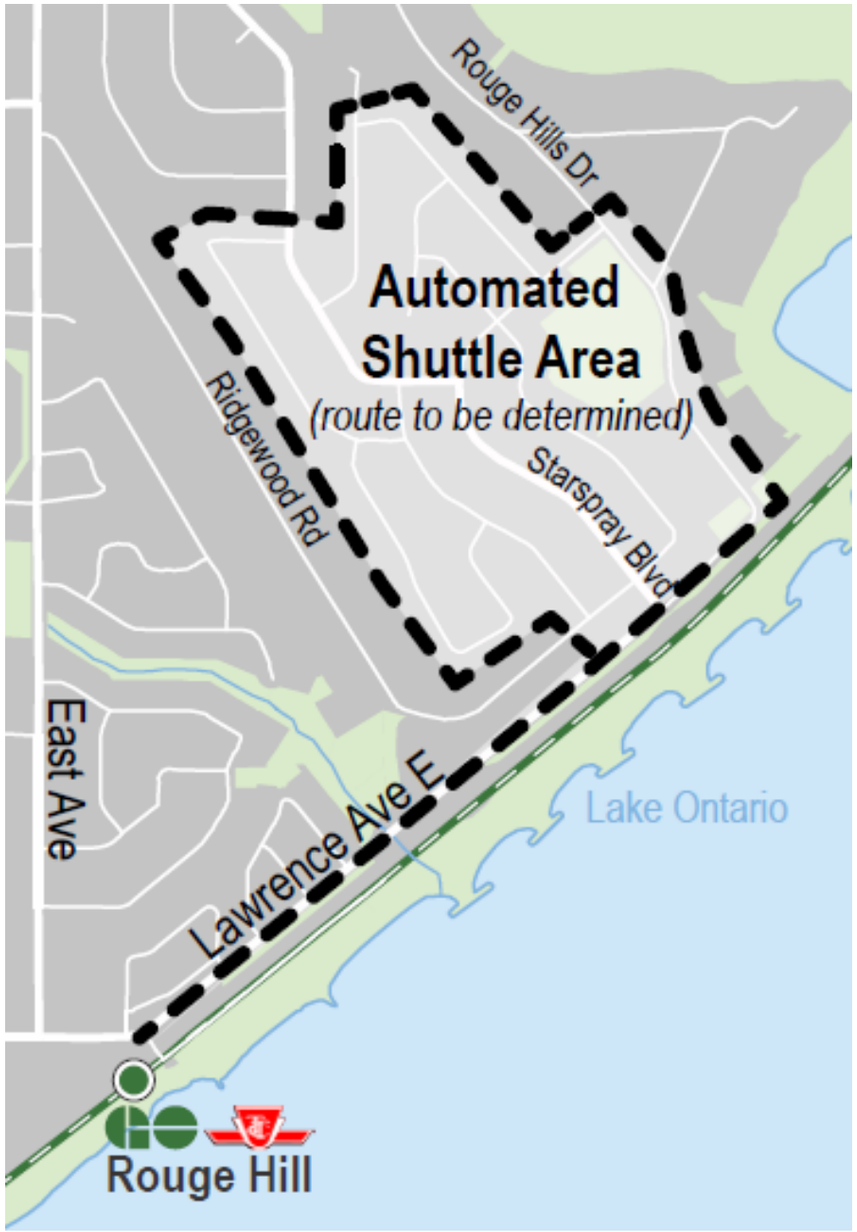
Candiac, Quebec

PROPOSED TRIAL PROJECT PLAN

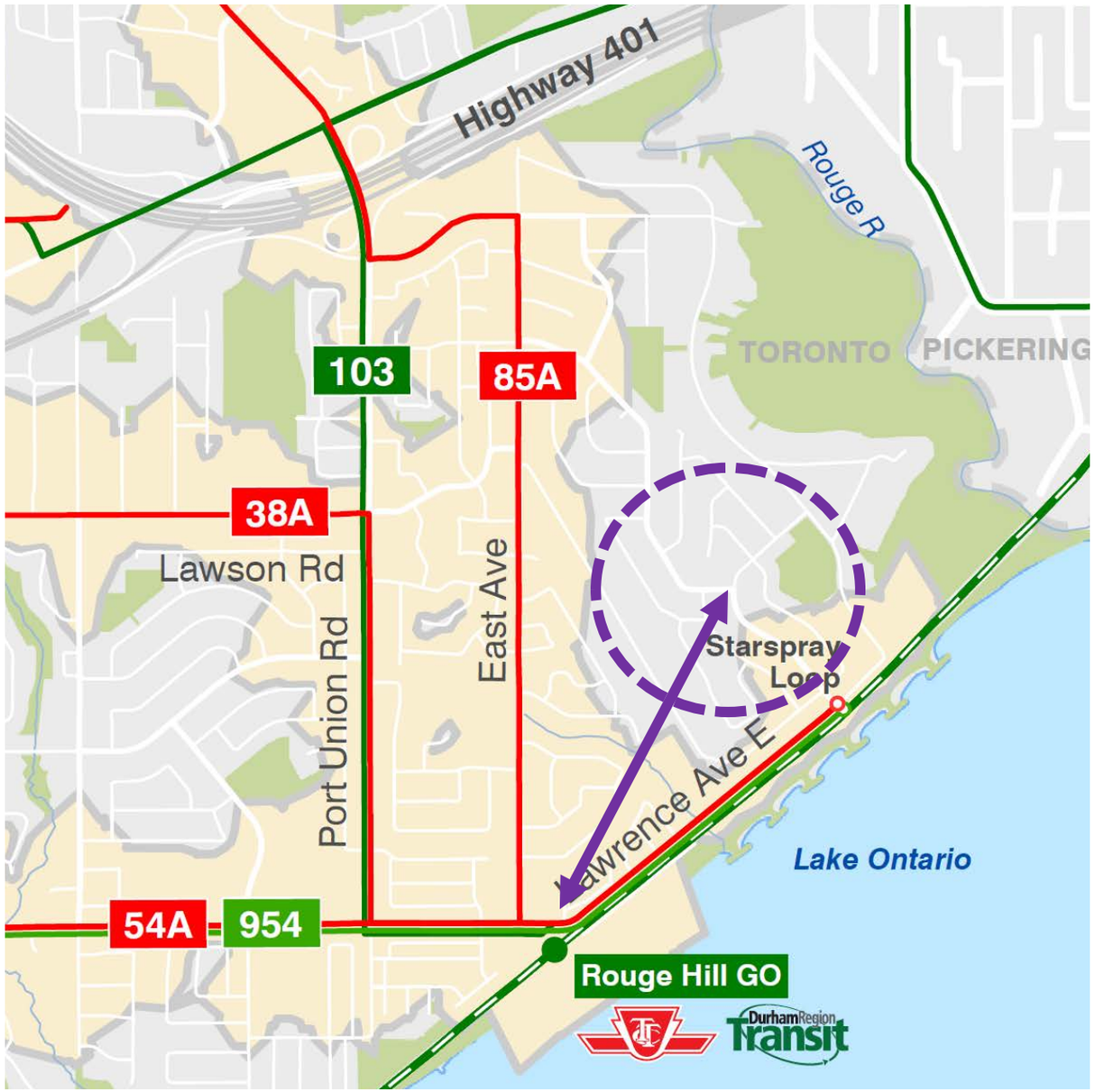
- Service to start Fall 2020
- Run for about 6-12 months
- Passengers ride for free
- Route follows select streets in West Rouge, to and from Rouge Hill GO station *(see route options on panels 8-17)*
- Run only during morning and evening rush hours (approximately 6:30-9:30 a.m. and 4-7 p.m.)
- Loop around about every 20-30 minutes

This plan may change - feasibility stills need to be confirmed with the vendor in 2020.

This temporary service is intended for research purposes, with no intention to extend the contract or purchase the vehicle.



WHY WE CHOSE WEST ROUGE



Fills a current unmet need:

- Potential transit riders outside of the existing TTC 400m service area
- Close proximity to a major transit hub (GO / TTC / Durham Region Transit)
- Many Rouge Hill GO Station users currently drive to the station

Meets route technical requirements
(see following panels)

- Inside TTC 400m catchment area
- Outside TTC 400m catchment area
- TTC local route
- TTC express route
- Durham Transit route
- GO rail

ROUTE REQUIREMENTS

The automated shuttle service route will need to meet many technical requirements:

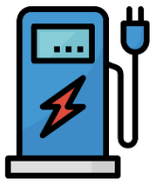
Under 5km in total length

Avoid School Zones

Avoid High-volume Traffic Streets

Avoid Complicated Intersections

Avoid Steep Hills



Within a Short Distance of a Suitable Charging Location

Additional requirements may be raised by the vehicle vendor (to be selected in 2020)

ROUTE DESIGN PRINCIPLES

Route directness

Routes should be as direct as possible to minimize travel time, with minimal diversions off a direct path

Maximize two-way service

Large one-way loops should be avoided to maintain consistent travel times in either direction

Avoid duplication

Routes should avoid operating in close parallel to existing transit routes, to make the best use of available resources

Serve defined neighbourhood

Stops and service should be located in close proximity to the defined neighbourhood to minimize walking and access time

7 ROUTE OPTIONS – SHARE YOUR FEEDBACK!

Following are seven route options that we believe could work, although further evaluation is pending.

We want to hear what you think about each option.

Your input will provide important insights for consideration when the service team designs the final recommended route.

After reading through these panels, please complete the online survey at **toronto.ca/AVshuttle**

Option 1
via Friendship Ave.

Pro

- Provides two-way service on Starspray Blvd.
- Small one-way loop

Con

- Less coverage of area

What else should we consider on this route?

Give us your input at **toronto.ca/AVshuttle**

Option 2
via Bornholm Dr.

Pro

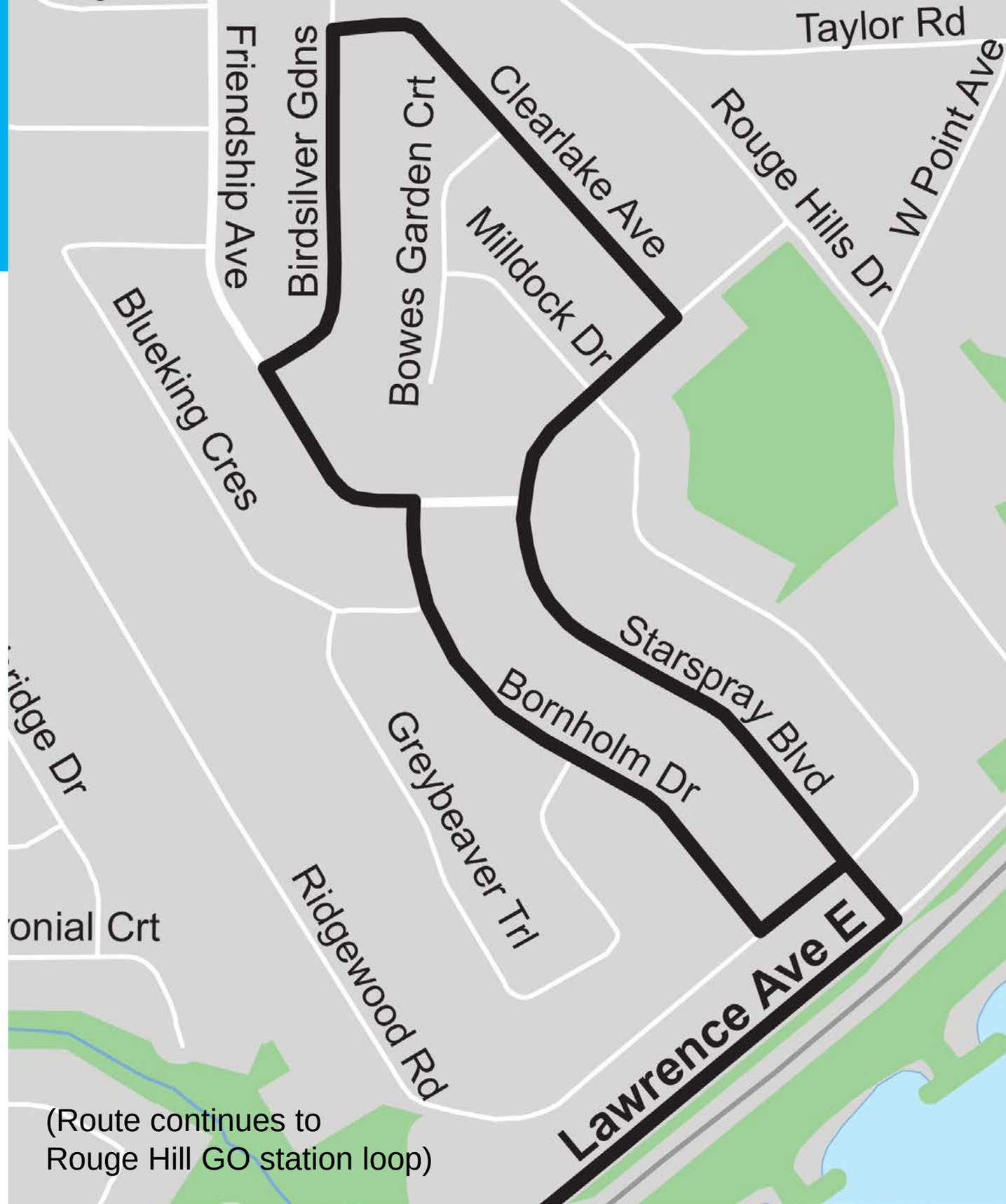
- More coverage of area (on Bornholme Dr.)

Con

- Large one-way loop

What else should we consider on this route?

Give us your input at **toronto.ca/AVshuttle**



Option 3
via Milldock Dr.

Pro

- More coverage of area (on Milldock Dr.)
- Walkway on Milldock Dr. provides access to homes on Rouge Hills Dr.

Con

- Large one-way loop

What else should we consider on this route?

Give us your input at **toronto.ca/AVshuttle**

Option 4
via Blueking Cres.

Pro

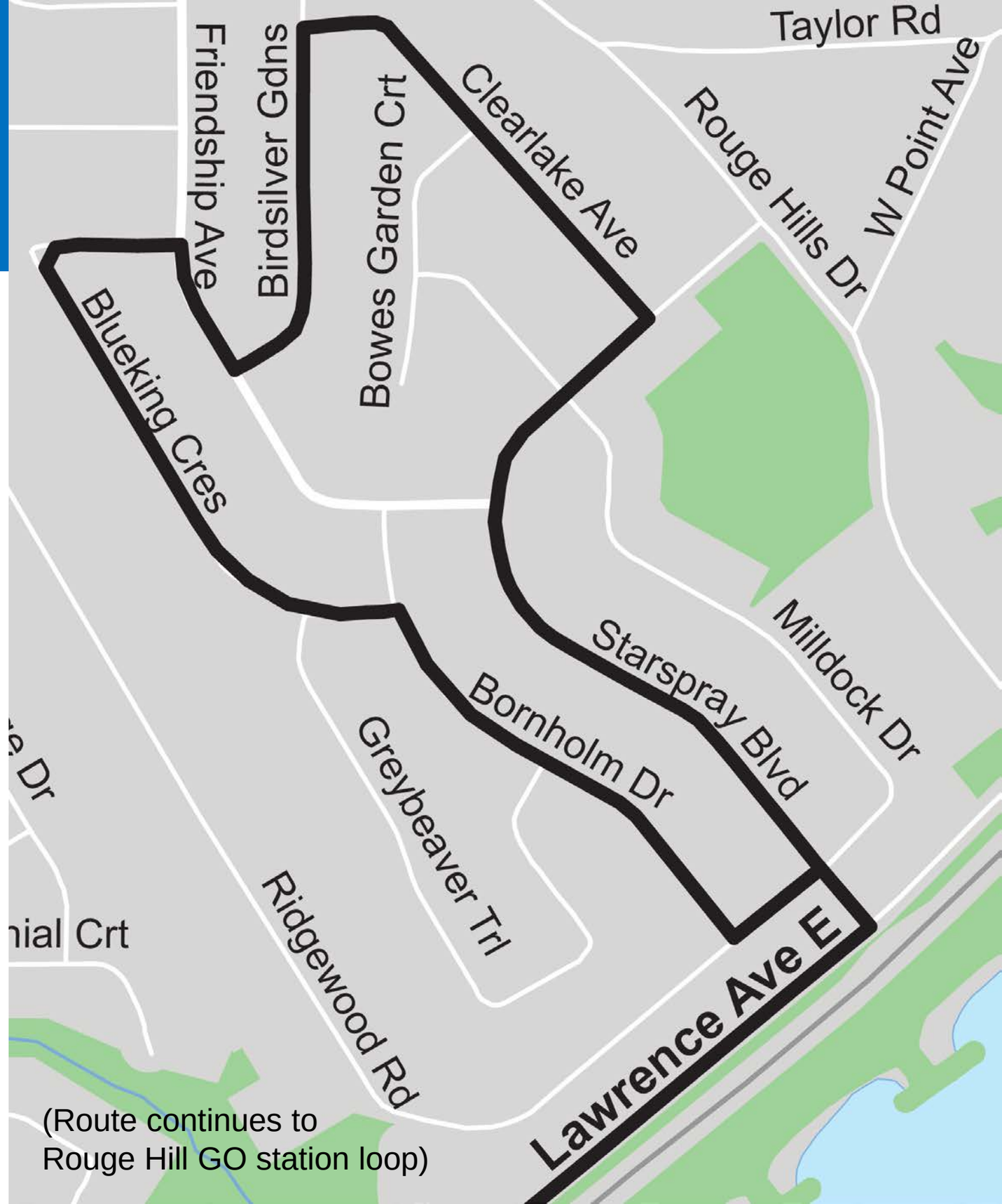
- More coverage of area (on Bornholme Dr. and Bluekind Cres.)

Con

- Large one-way loop
- Long route, higher average speed required

What else should we consider on this route?

Give us your input at **toronto.ca/AVshuttle**



Option 5
via Rouge Hills Dr.

Pro

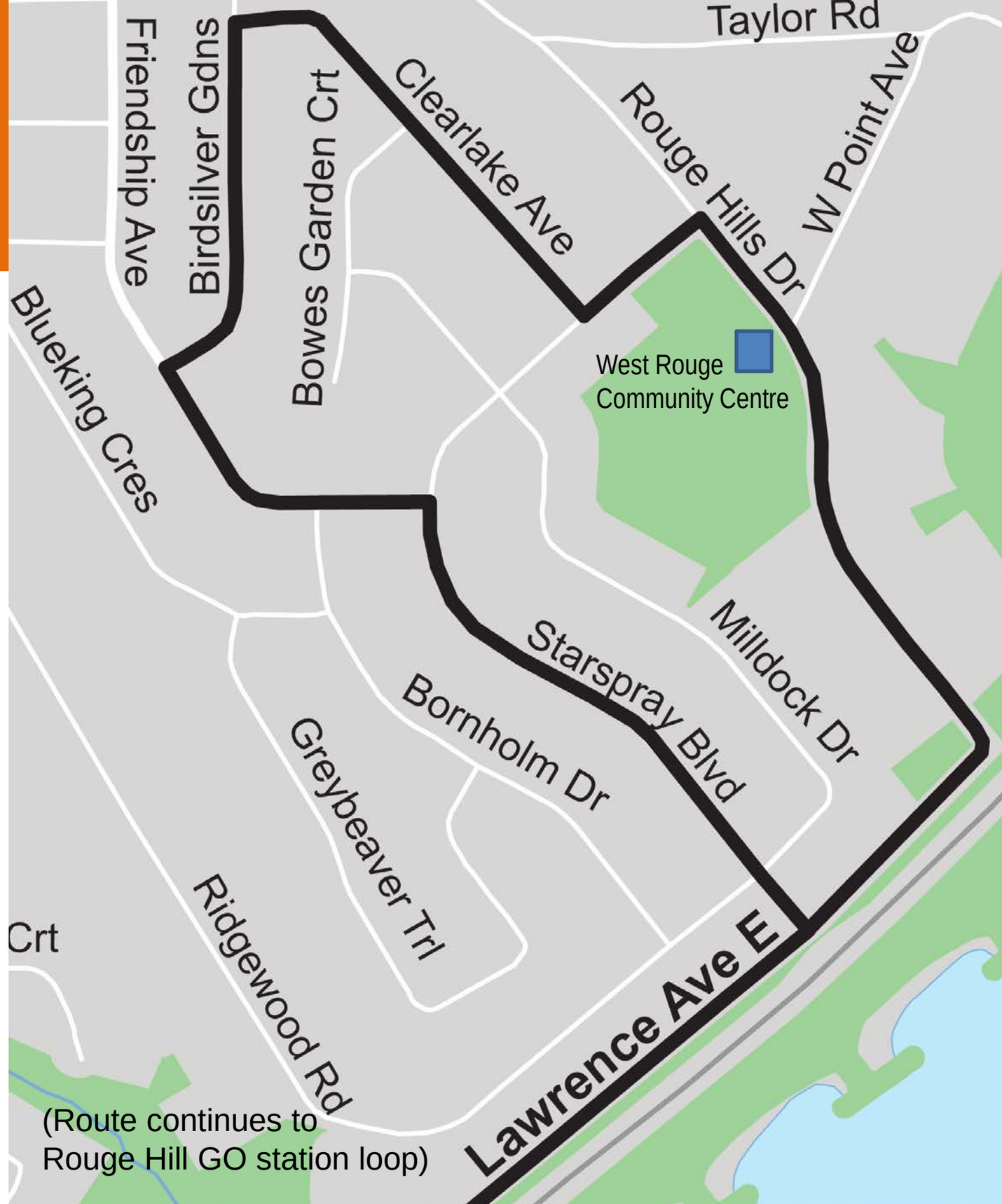
- Directly serves West Rouge Community Centre
- More coverage of area (on Rouge Hills Dr.)

Con

- Largest one-way loop
- Long route, higher average speed required
- Rouge Hills Dr. has fewest homes
- More unproductive time on Lawrence Ave E

What else should we consider on this route?

Give us your input at **toronto.ca/AVshuttle**



Option 6
via Greybeaver Trail

Pro

- High coverage within neighbourhood

Con

- Longest route (highest operating cost, highest average speed required)
- Serves street that already has a walkway connection to a TTC 54 bus stop on Lawrence Ave E

What else should we consider on this route?

Give us your input at
toronto.ca/AVshuttle

Option 7
via Bowes Garden Ct.

Pro

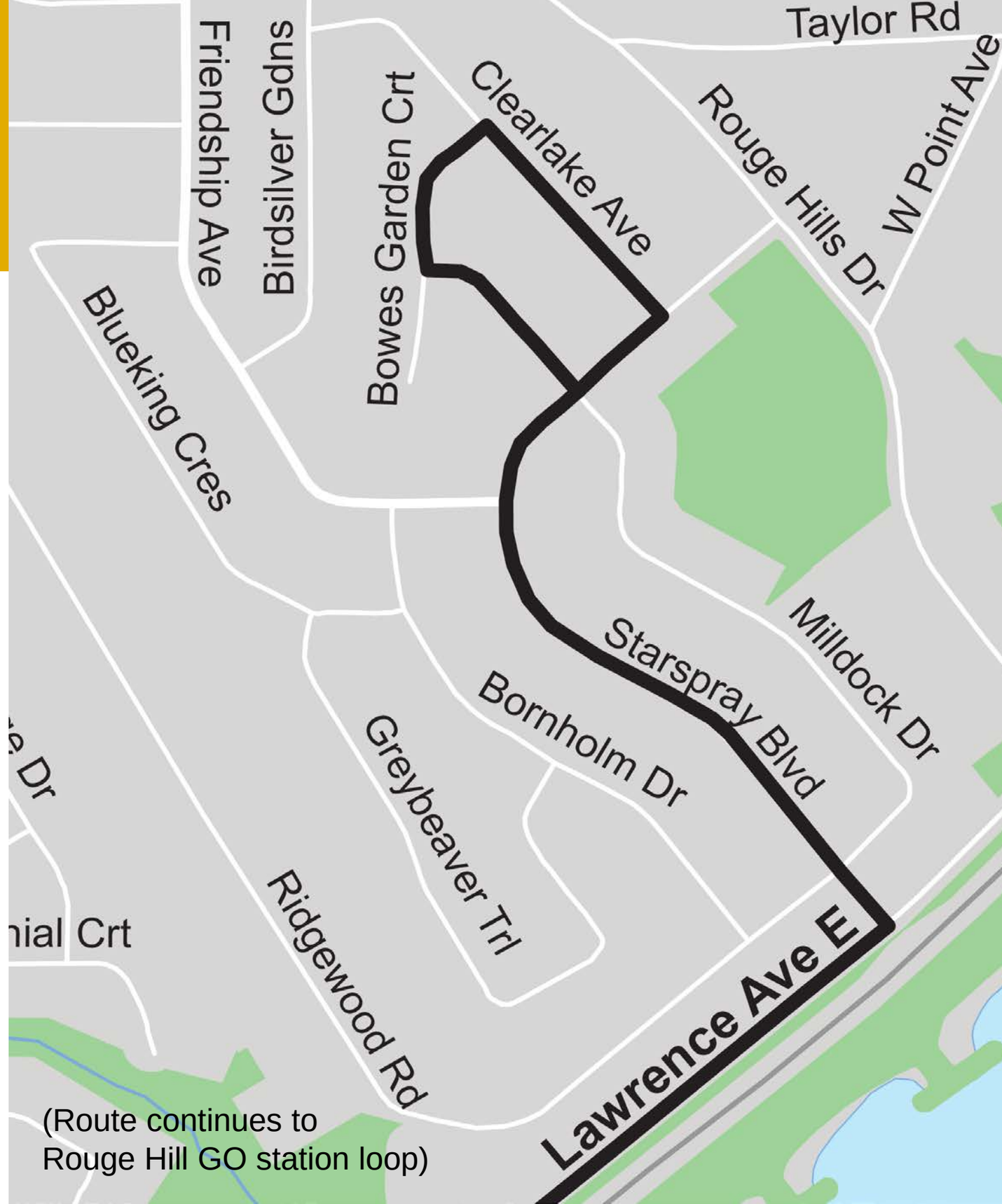
- Shortest route (lowest operating costs)
- Longest two-way operation

Con

- Limited coverage of area

What else should we consider on this route?

Give us your input at **toronto.ca/AVshuttle**



ROUTE OPTIONS ASSESSMENT

Option	Direct	Two-way	Avoids Duplication	Proximity
1 via Friendship Dr.	✓	✓	✓	✓
2 via Bornholm Dr.			✓	✓
3 via Milldock Dr.			✓	✓
4 via Blueking Crec.			✓	✓
5 via Rouge Hills Dr.			✓	✓
6 via Greybeaver Trail			✓	✓
7 via Bowes Garden Ct.	✓	✓	✓	

Additional route assessment will be required with the shuttle vendor in 2020.

BUS STOPS AND HAILING IS TO BE DETERMINED

We expect the shuttle route to be fixed, but methods for hailing a ride are still to be determined – this will depend on the vendor who has yet to be selected.

There will be fixed stops in the neighbourhood.

Calgary, Alberta

Stop locations will be determined after the route is selected.

TIMELINE

- July 2018: City Council Approved Agreement
- Fall 2018: Request Information from Vendors
- Spring 2019: Draft Service Plan
- Fall 2019: Public Consultation Begins — We are here
- Fall/Winter 2019: Vendor Contracting
- Spring 2020: Route Assessment with Vendor
- Spring/Summer 2020: Set-up and Testing
- **Fall 2020: Service Launch (6-12 months)**
- Fall 2020-2021: Evaluation during and after service
- Spring 2022: Final Report

WE WANT YOUR INPUT!

Complete the survey now to provide your feedback online:

TAKE THE SURVEY

Join us for a public consultation drop-in event:

October 2, 2019, 3:30 p.m. to 8 p.m.

West Rouge Community Centre (270 Rouge Hills Dr.)

Contact: Jason Diceman, Sr. Public Consultation Coordinator, City of Toronto

Tel: 416-338-2830 Email: automatedvehicles@toronto.ca

toronto.ca/AVshuttle

Information will be collected in accordance with the Municipal Freedom of Information and Protection of Privacy Act
With the exception of personal information, all comments will become part of the public record.