

**COMMITTEE OF THE WHOLE (2) – JUNE 16, 2020**

**STAFF COMMUNICATIONS**

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**Distributed June 12, 2020**

SC1 Memorandum from the Deputy City Manager, Infrastructure Development and the Director, Infrastructure Planning and Corporate Asset Management dated June 12, 2020.

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**Please note there may be further Communications.**

**SC 1  
CW (2) - June 16, 2020**

**DATE:** Friday, June 12, 2020

**TO:** Hon. Mayor Bevilacqua and Members of Council

**FROM:** Nick Spensieri, Deputy City Manager, Infrastructure Development  
Vince Musacchio, Director, Infrastructure Planning and Corporate Asset Management

**RE: STAFF COMMUNICATION - Shared Mobility Pilot Feasibility Study Findings**

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**Purpose**

This memorandum summarizes the findings from the Shared Mobility Pilot Feasibility Study and the benefits in implementing this on-demand micro-transit pilot. The study identified On-Demand Micro-Transit as the most suitable alternative mode of transportation to take commuters to and from Rutherford GO station and laid out an implementation plan for a one-year pilot. At the time of the study, the primary objectives were to reduce “drive-and-park” at Rutherford GO station and support more sustainable choices to access the station, especially during the construction of Rutherford Road Grade Separation and station expansion.

Considering the current pandemic situation, On-Demand Micro-transit could be part of the solution to help address challenges faced by public transit providers due to COVID-19.

**Report Highlights**

- On-demand micro-transit has been identified as the most suitable alternative mode of transportation around Rutherford GO and scalable to include Maple GO station area
- The benefits of on-demand micro-transit service go beyond shifting “drive-and-park” users to a more sustainable mode of transportation; this service can potentially be the solution to provide public transit while maintaining physical distancing during low-ridership time
- Lessons learned from Belleville’s public transit in response to COVID-19 using on-demand micro-transit sets an encouraging example
- The City’s partnership with York Region Transit to pilot this micro-transit service will allow commuters around GO stations to have more first/last mile mobility options

## **Background**

**Staff have been working in collaboration with York Region, York Region Transit, and Metrolinx since 2017 to coordinate construction projects around Rutherford and Maple GO stations**

Since 2017, staff have been working with York Region, York Region Transit and Metrolinx to coordinate construction projects in and around Rutherford and Maple GO stations to avoid conflicts and mitigate construction impact on traffic. A working committee was established and workshops were held to gain a comprehensive understanding of these construction projects (scope, time, priority and potential impacts). As a result of the workshops, the working committee agreed that there is a need to provide alternative travel routes and mobility choices for GO users.

**In March 2018 staff released a Request for Information to scan for innovative solutions to address the need for more alternative travel routes and mobility choices around Rutherford GO station**

Responding to the need for more alternative travel routes and mobility choices for Rutherford GO users, staff released a Request for Information in March 2018 to scan the market for innovative ideas to address this need. This “market sounding” yielded six submissions. Staff gained valuable insights into the potential technologies and services available in the market that could address this need.

**In Summer 2019 a Shared Mobility Feasibility Study was commenced to find the best solution for alternative routes and mobility choices**

Considering the transportation context around Rutherford GO station (such as policies, regulations and land use) combined with the complexity of different construction projects, a feasibility study was initiated in Summer 2019 to determine the best technology and service model and lay out an implementation plan. The feasibility study was completed in February 2020, which recommended the micro-transit service as a preferred option to reduce the number of “drive-and-park” to Rutherford GO.

Staff leveraged the study findings and recommendations to apply for a funding grant from the Federation of Canadian Municipalities (FCM) under the Green Municipal Fund. It is anticipated that the grant decision will be made in early Q3 2020. If received, the grant can potentially fund a portion of the pilot.

**The findings of the Shared Mobility Feasibility Study were presented to the Transportation and Infrastructure Task Force on June 3, 2020**

On June 3, 2020 the Shared Mobility Feasibility Study findings were presented to the Transportation and Infrastructure Task Force. The presentation was well received with support to launch the pilot. Staff were asked to provide a status update once the grant decision has been received from FCM.

## **Previous Reports/Authority**

[York Region Report, May 14, 2020 Committee of the Whole, Impacts of COVID-19 on Public Transit.](#)

## **Analysis and Options**

**The Primary Service Area covers close to 75,000 residents with the flexibility to be modified throughout the pilot depending on demand and uptake**

Based on commuters survey conducted by Metrolinx for Rutherford GO station and the population density around the station, the Primary Service Area (PSA) for the pilot is bounded by Weston Road to the west, Bathurst Street to the east, Major Mackenzie Drive to the north and Rutherford Road to the south west of GO railway and Highway 7 to the south east of GO railway.

Two thirds of “drive and park” Rutherford GO commuters come from PSA covering approximately 74,800 residents. Due to the dynamic and on-demand operating model of micro-transit, the PSA could be easily modified during the pilot in response to demand and uptake from users.

**Four first/last mile solutions were evaluated against strategic, financial, economic and market-readiness criteria**

There are four main categories of emerging mobility solutions that are becoming increasingly popular around the world and in North America as alternative mobility choices.

1. Micro-Transit: refers to shared, on-demand, dynamically routed transit services typically using smaller vehicles than conventional buses, supported by an online application. Providers typically offer both a software-only licensing model and a turnkey solution.
2. Autonomous Vehicle (AV) Shuttles: The Society of Automotive Engineers (SAE) defines 6 levels of driving automation ranging from 0 (fully manual) to 5 (fully autonomous). Electric AV shuttles used in pilots to date are generally SAE Level 3 or 4 vehicles operating at 15-25 kph. Many have operated along fixed routes in designated lanes or in mixed traffic on quiet streets, but some pilots have been run on busier roads in downtown locations.

3. Transportation Network Company (TNC) Partnerships: TNC first/last mile partnerships typically take the form of a subsidy program where commuters are offered discounts for rides that start or end at a certain transit station. However, these services usually operate as a part of the TNC's overall service so the ability for the City to adjust specific parameters to manage the operation is limited. Lyft and Uber are two TNCs that have partnered with municipalities.
4. Micro-Mobility: Micro-mobility services are typically shared solutions that rely on a pool of light vehicles such as e-scooters, conventional bicycles, or e-bikes that may be rented for an hourly fee. They can be station-based or dockless. Some micro-mobility operators include Lime Canada, Bird and Jump.

An evaluation framework was developed to guide the assessment of these emerging technologies. The framework was based on four elements that together measure how well the solutions achieve the goal of providing more ways for Rutherford GO station commuters to move around safely, affordably, and with minimal environmental impact. These four elements are:

- **Strategic** – support the vision and transportation policies of the City, particularly regarding equitable access to transportation, reduced dependence on single-occupant vehicles, and supporting low-carbon mobility options.
- **Financial** – The solution should provide an economical means for the City to enable first/last mile transportation options for commuters who use Rutherford GO station.
- **Economic** – The solution should provide economic benefits both to users and to the wider society. These benefits include reduced traffic congestion, travel time, and environmental impact.
- **Market-Readiness** – The solution should be suited to all-season operations and should be ready to be put into commercial service on public roads around Rutherford GO station by June 2020

### **Micro-transit is the top ranked solution and is the preferred option to pilot at Rutherford GO**

Micro-transit can serve a large area and it can support low-carbon and barrier free vehicles. This solution is market-ready, and several solution providers have already indicated interest in working with Vaughan. Costs can be effectively managed with software tools that the City can directly control, and the service is readily scalable to serve other locations.

### **The COVID-19 pandemic situation not only impacts commuters travel behavior, it also brings new challenges for public transit providers**

York Region's report to Committee of the Whole on May 14, 2020, titled "Impacts of Covid-19 on Public Transit", expressed the struggles municipalities are facing to

maintain operations due to the impacts of COVID-19 and requesting assistance from the Federal and Provincial governments to provide emergency funding.

Following the direction of federal and provincial Public Health agencies and the mandatory closure of all non-essential businesses in March 2020, many citizens are working from home. As a result, transit ridership across the country has decreased by approximately 80% including within York Region. York Region Transit (YRT) has been operating at approximately 55% of normal service levels since April 5, 2020 resembling Saturday service, with enhancements to ensure passenger physical distancing and proper cleaning precautions for buses and terminals.

### **The On-Demand Micro-Transit service could also support York Region Transit transition back to normality**

In supporting York Region in their requests to the Federal and Provincial governments to help identify solutions to the challenges faced by public transit service providers due to COVID-19, the City could leverage the opportunity of the On-Demand Micro-transit pilot to assess the effectiveness of this type of transit service in response to unexpected events, such as COVID-19, and as a mean to transition back to conventional transit service.

### **Belleville Transit's adaptation to COVID-19 using On-Demand Micro-Transit proved efficiency and flexibility needed**

Before COVID-19, Belleville Transit was piloting an On-Demand Micro-Transit for the late-night transit service to replace conventional bus services at night, which proved to be an instant success.

Since the start of the COVID-19 pandemic, Belleville's Transit experienced 80% decline in ridership in its conventional fixed-route bus service. Like other transit agencies across the GTHA, Belleville Transit addressed the challenges of physical distancing on vehicles with rear door boarding and minimize spread of virus with increased vehicle cleaning and no fare collection.

In response to the steep increases in operating costs and decline in ridership, Belleville switched to on-demand bus services. This service started on March 27, 2020 utilizing 5-6 vehicles covering the entire city from 7am-12am. The lessons Belleville transit learned from the on-demand transit deployment are:

- On-demand transit can provide coverage more efficiently than fixed routes in low demand situations;
- Supply of vehicles is more flexible on a day to day basis with on-demand transit
- Technology should move toward even more automation (zero driver interaction); and

- Fixed routes are still more efficient than on-demand in busy urban areas but could reduce transfers and commute times.

## **Financial Impact**

### **Planning, Operations, and Evaluation would span approximately 21 months, potentially costing \$725,000 with grant funding**

A detailed implementation plan has been prepared to serve as a blueprint for the deployment. It anticipates a 21-month process to plan, procure, market, deliver, and evaluate the pilot at a cost of \$725,000. If the City can secure 50% funding of eligible expenses through the Federation of Canadian Municipalities Transportation Networks and Commuting Options Pilot Project Initiative grant or through YRT's existing Mobility On-Demand project, the net municipal contribution would be \$323,000. The required municipal funding was approved through the 2020 budget process. If the City is successful in obtaining the FCM grant, it is not anticipated that additional budget will be required.

## **Broader Regional Impacts/Considerations**

The lack of first/last mile mobility options is often the key barrier in commuters to utilize public transportation. With the COVID-19 situation, concerns for physical distancing, contactless payment, and flexibility in travel routes would be added to the barriers in taking public transit. As shown by Belleville's public transit adaptation shift to micro-transit, these added concerns could be addressed and help people transition back to taking public transit.

The City's partnership with York Region Transit to pilot this micro-transit service will allow commuters around GO stations to have more first/last mile mobility options, reduce cost in running conventional fixed route buses at this time of reduced ridership and serve as feeder service to higher order transit services such as Barrie GO rail.

## **Conclusion**

The findings of the feasibility study to implement micro-transit pilot is just one early step in Vaughan's vision to enhance mobility at GO stations and beyond. It provides a solid foundation for the next step of procuring and implementing the proposed micro-transit pilot. It also provides a template for how the City can assess the potential to improve mobility in partnership with York Region and York Region Transit at other key nodes that experience similar challenges of few first/last mile options, increasing traffic congestion, and a growing desire by the City and its residents to move toward more sustainable, inclusive transportation systems

Staff will provide updates to Council and Transportation and Infrastructure Task Force with any new information once the grant decision has been received from FCM.

**For more information**, please contact Vince Musacchio, Director, Infrastructure Planning & Corporate Asset Management

**Attachments and Reference Material**

1. Primary Service Area Map, Shared Mobility Pilot Feasibility Study, January 2020
2. Adapting to COVID-19: How Belleville Responded with On-Demand Transit Presentation [LINK](#)



Map: Primary Service Area (PSA)

