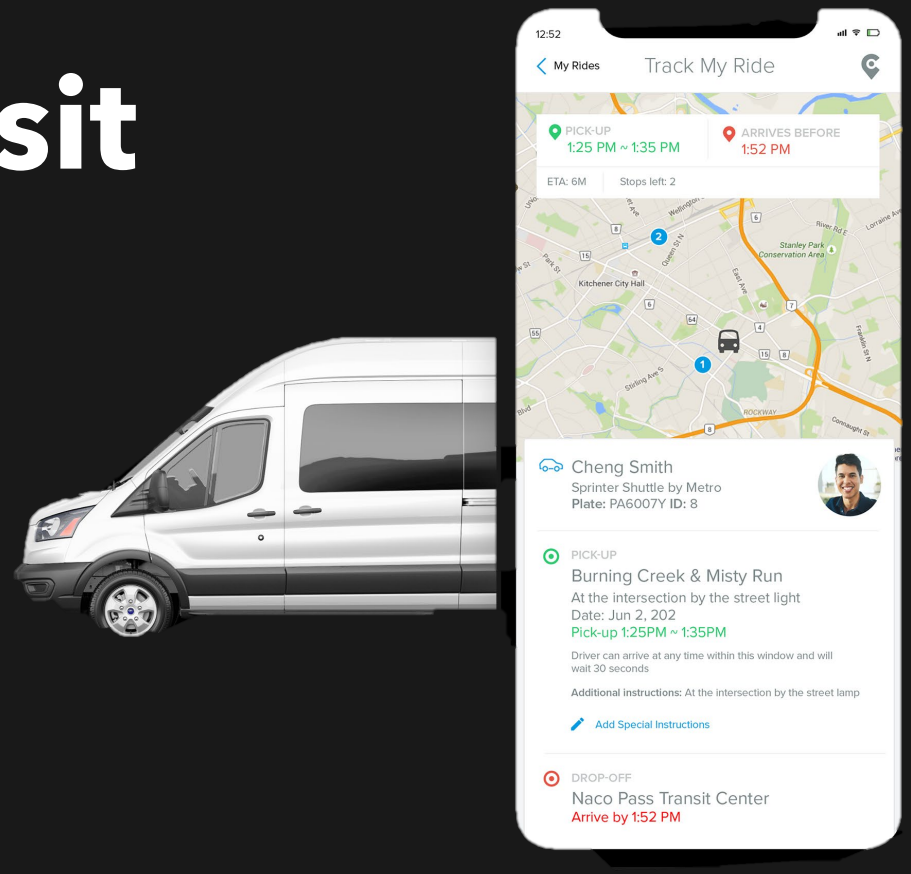
METROLINX

# On-Demand Microtransit Considerations and Observations

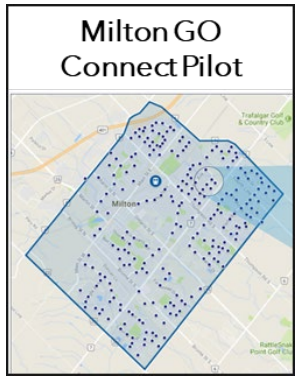



Josh Tzventarny

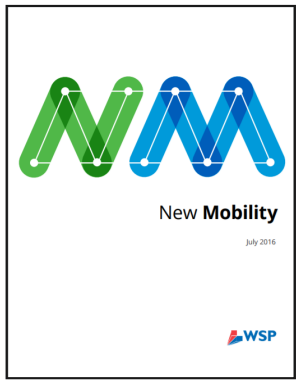
# COVID 19 - SAFE RESTART AGREEMENT

- The Ontario government, in partnership with the federal government, has committed up to $2.15 billion to help municipal public transit providers address financial impacts resulting from COVID-19.
  - This funding was allocated using a base allocation of $40,000 plus a proportion of total funding based on ridership
  - The funding is being provided in three phases and will cover eligible expenses incurred between April 2020 and December 2021.

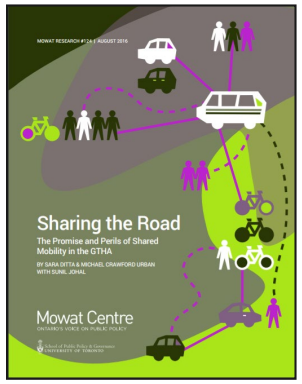
# EXPLORING ON-DEMAND TRANSIT AND NEW MOBILITY



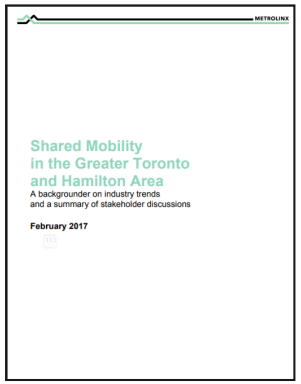

Milton GO Connect Pilot (2015-2016)



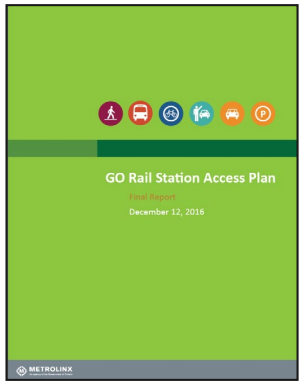

New Mobility (2016)




Sharing the Road - Promise and Peril of Shared Mobility – Mowat Centre (2016)

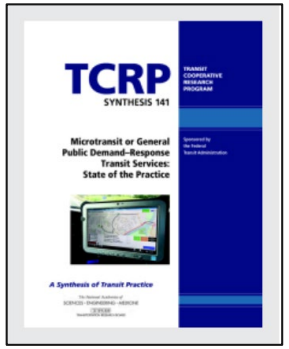



Shared Mobility in the GTHA - Workshop (2016)

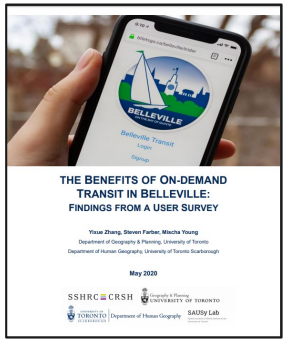



GO Rail Station Access Plan (2016)


2041 Regional Transportation Plan (2018)



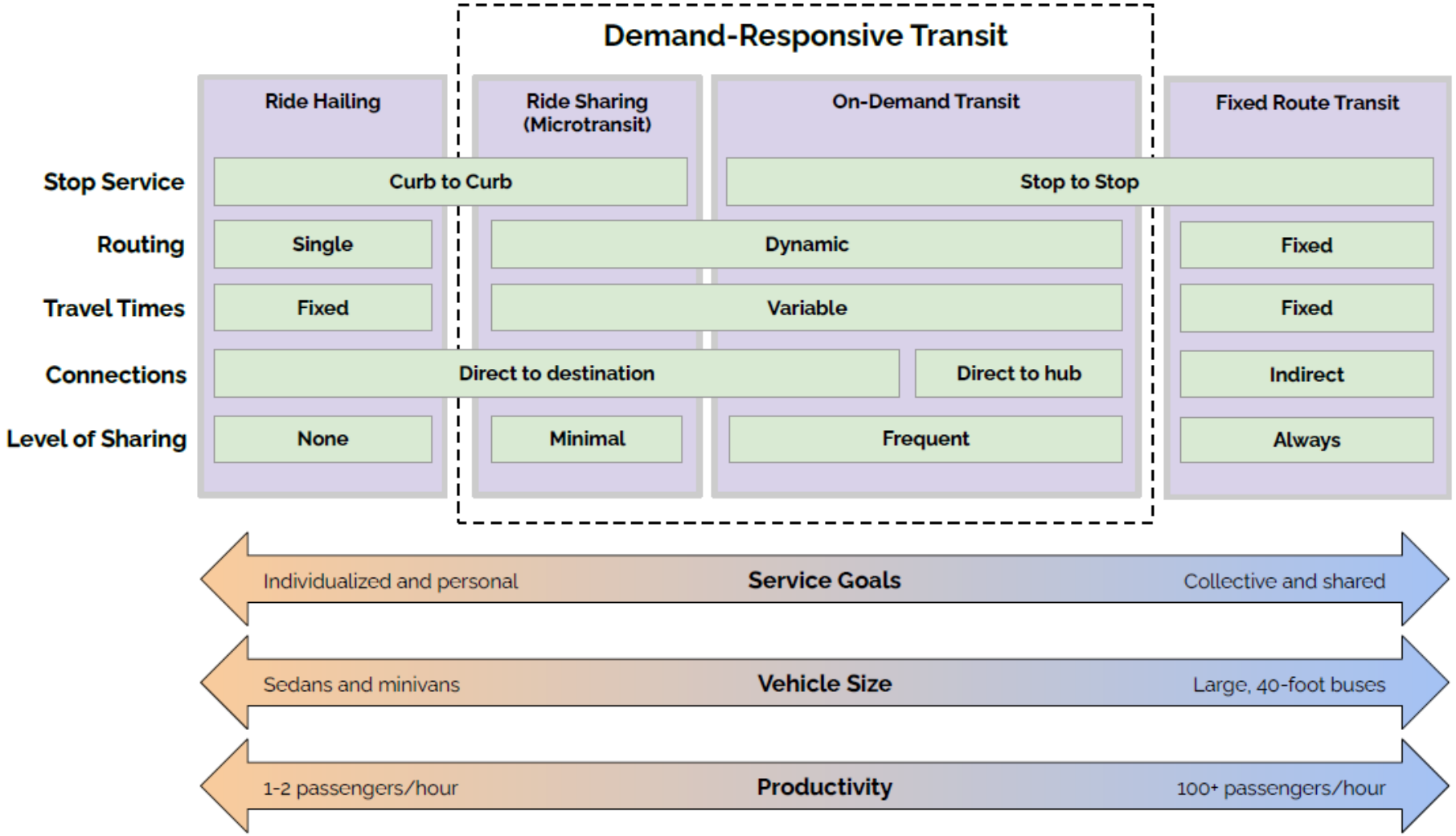

Microtransit or General Public Demand Response Transit Services: State of the Practice (2019)




The Benefits of On-Demand Transit in Belleville (2020) Zhang, Farber, Young - Ryerson University and University of Toronto


The State of Demand Responsive Transit in Canada (2020) Klumpenhouwer - University of Toronto

# ON-DEMAND MICORTRANSIT (ODMT) ECOSYSTEM




Source: Klumpenhouwer (2020)

# KEY CONSIDERATIONS FOR ON-DEMAND TRANSIT

## Service Objective

- Is there an existing transit system or is this for a service area with no transit service?
- Will your service complement an existing fixed route service or provide a new service within an existing system?
- Will your service connect to fixed stops such as transit terminals/hubs or large retail/employment hubs?
- What customers is the service designed to serve?
- What type of service is it?
  - FMLM to local transit or higher-order transit
  - Augment service to a local route
  - Replace an existing route, either fully or partially
  - Provide a service to a new community or low-density area
  - Provide night-time or weekend service

## Operating Model

- Does the service use existing transit fleet or work with smaller vehicles, right sized to the needs of the community? Is there an opportunity to work in accessible vehicles into the system?
- What resources exist currently that can support the on-demand service? (ex. Call centre for customer support, vehicles, drivers, maintenance facilities, routing software, digital payments, etc.)
- What type of service will this service provide? (Door to door or stop to stop, frequency of service, etc.)
- Will the service use a third-party software or in-house software for booking, routing and dispatching?

## Service Area

- What is the appropriate size of the service area based on your service objective and operating business model?
- Where do your customers want to travel?

# KEY THEMES

## Application of Service

- Complementing existing transit network or new standalone service
- Low performing routes
- First Mile/Last Mile
- Creation of mini transit hubs (shopping, schools, hospitals, community centres, etc.)

## Size of Service Area & Vehicle Type

- The larger the zone, the larger the number of possible route combinations.
- Doubling the size of the service zone may necessitate tripling the number of vehicles on the road to maintain the same quality of service.
- Type of vehicle and number of vehicles required

## Customer Experience & Quality of Service

- Wait times
- Customer booking time (immediate vs several hours vs day(s) in advance)
- Walking distance to stops
- Pick-up and drop-off location (door or bus stop or virtual bus stop)
- Access to new or key destinations
- Customer safety

## Trip Routing

- Determining routes for ODT service
- Potential third party vendor to conduct route analysis

## Demographics

- Who lives in your community? What are their needs?
- What are the common origins & destinations?

## Data Management

- Flexible options - open payment, cash, tickets
- Integration with existing payment systems (i.e. Presto)

## Form of Payment

- Flexible options - open payment, cash, tickets
- Integration with existing payment systems (i.e. Presto)

# CANADIAN ON-DEMAND TRANSIT IMPLEMENTATIONS

- Since 2015, more than 20 On-Demand Transit initiatives have launched in Canada.
- Service design options provides flexibility to municipalities to fit their needs
  - Augment an existing service;
  - Replace an under-performing route such as off-peak or Sunday service;
  - Regional service connecting smaller communities;
  - Specialized service to support accessibility; and,
  - FMLM to higher-order/rapid transit.

| Municipality | Province | Approx. Project Timeline |
|---|---|---|
| Barrie | Ontario | 2020 |
| Belleville | Ontario | 2018 to Present |
| Bowen Island | British Columbia | 2019 |
| Calgary | Alberta | 2019 to Present |
| Chatham-Kent | Ontario | Planned |
| Cochrane | Alberta | 2019 to Present |
| Durham Region | Ontario | 2017 to Present |
| Edmonton | Alberta | Planned (2021) |
| Hamilton | Ontario | Planned (2021) |
| Oakville | Ontario | 2015 to Present |
| Okotoks | Alberta | 2019 to Present |
| Regina | Saskatchewan | 2020 |
| Milton | Ontario | 2015 to 2016 |
| Niagara Region | Ontario | 2020 |
| North Bay | Ontario | 2021 |
| Saskatoon | Saskatchewan | 2020 |
| Sault St. Marie | Ontario | 2019 to Present |
| St. Albert | Alberta | 2020 |
| Thunder Bay | Ontario | Delayed to 2021 |
| Waterloo | Ontario | 2018 to Present |
| Winnipeg | Manitoba | Planned |

# NOTED DELIVERY MODELS

| | Transit Agency Operated | Third Party Operated | Transportation Network Company (TNC) |
|---|---|---|---|
| **VEHICLES AND DRIVERS** | | | |
| Vehicle Type | Existing: Transit Bus<br>New: Bus, passenger van, or sedan | Passenger van or sedan | Sedan or minivan |
| Capacity | Dependent on vehicle | Dependent on vehicle | Dependent on vehicle and trip sharing |
| Ownership | MSP or Third Party | Third Party | Private non-commercial |
| Sourcing | Existing fleet | Supplied by vendor or municipality | Driver-owned |
| Drivers | Professional | Professional | Non-Professional |
| Levels of Service | Set by Municipality | Outlined by contract | Outlined by contract, vehicle availability and demand |
| **BENEFITS AND CHALLENGES** | | | |
| Benefits | Existing vendors, vehicles & drivers | Core focus of vendors | High customer familiarity with apps |
| Challenges | Marketing / customer awareness of service. Technology challenges and costs. | Procurement and implementation of new service. | Lack of data provided by TNC.<br>Less inclined to promote shared trips.<br>Relies on an existing pool of drivers in the area. |
| Est. Operating Costs (per vehicle hour) | ~$95 | ~$65-$100 | ~$96 [8 trips/hr @ $12/trip] |

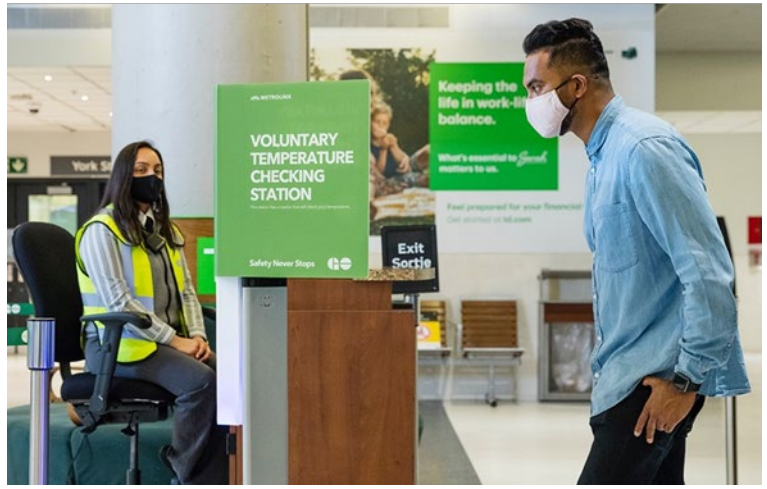
# 2019-2021 NEW MOBILITY PILOT PROGRAM

- Three Year New Mobility Testing Program to support on-demand microtransit pilot projects
  - Test different approaches and use-cases for on-demand service
  - Understand costs, benefits and impacts for operators and customers
  - Evaluate opportunities for on-demand transit to solve first mile/last mile (FMLM) connectivity issues in the Great Golden Horseshoe (GGH); and
  - Share findings with partners across the region.

- Partnerships with transit agencies:
  - Durham Region Transit (DRT) – Live Fall 2020
  - Grand River Transit (GRT) – Initial public engagement and service design finished.

# WHAT'S NEXT

- Metrolinx continues to support MTO with the implementation of the Safe Restart Agreement and the implementation of On-Demand Microtransit options across Ontario.
- Metrolinx is developing resources to support ODMT implementation through academic and industry research.
- Metrolinx continues to support MTO with the implementation of priority transit initiatives under the Safe Restart Agreement including On-Demand Microtransit options across Ontario.



# THANK YOU!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