



# Analysis of Mobility Options

---

EXECUTIVE SUMMARY

March 2019

# 1. Introduction

## 1.1 Analysis of Mobility Options: Purpose and Background

This document summarizes findings and recommendations of the Analysis of Mobility Options study conducted by IBI Group on behalf of Regional Transit Service (RTS) of the Rochester-Genesee Regional Transportation Authority (RGRTA).

The Analysis of Mobility Options study is Stage 2 of the Reimagine RTS initiative to restructure and reimagine transit service delivery in Monroe County, NY, including the greater Rochester urbanized area.

Stage 1 of Reimagine RTS proposed fixed-route network restructuring. The objective of this restructuring is to focus routes in areas with appropriate density, diversity, and design to successfully support fixed-route service in a fiscally-sustainable manner:

- **Density:** The measure of intensity of development in a given area, which means more potential transit customers.
- **Diversity:** The type and variety of uses in an area. A mixture of uses (residential, office, commercial) in close proximity creates all-day, all-week activity while also reducing the need for private vehicles.
- **Design:** The design and scale of the street network, streets, and surrounding land uses determines whether development is designed for cars and traffic, or people and places.

However, where sufficient density, diversity, and design characteristics are not present, certain areas of the existing RTS service area will see reductions or eliminations of former fixed-route services. Seven areas have been identified by RTS and are known as Community Mobility Zones, or CMZs:

- Brockport CMZ
- Greece CMZ
- Henrietta CMZ
- Irondequoit CMZ
- Lexington Avenue CMZ
- Pittsford/Eastview CMZ
- Webster CMZ

The focus of this mobility study is to identify preferred new mobility options for each of the seven CMZs, so that existing RTS fixed-route customers will have continuing service options following the implementation of the Reimagine RTS network.

Additionally, this study analyzed how new mobility options can better meet the needs of those who live, work play, and study within the CMZs by better matching service delivered to the travel needs of specific user groups. This includes mobility options that may provide more hours of service, more frequency, greater coverage, universal access, and improved convenience.

## 1.2 What is New Mobility?

Across the transit industry, there is a tremendous amount of innovation underway to develop new mobility options beyond conventional fixed-route bus and paratransit services. Many of these alternatives are enabled or enhanced by new technologies, such as mobile applications

for trip discovery, booking, and fare payment. Peer agencies across the U.S. have been adapting these new mobility modes to better meet the needs of communities that are not particularly well-served by conventional fixed-route transit service.

New mobility captures a wide range of service modes and variations, including on demand and flex route microtransit, personal mobility on demand (PMOD), and car/bike sharing (see Section 3 for detailed descriptions). The candidate mobility modes considered in the analysis are introduced later in this document.

While the modes captured under the rubric of “new mobility” are diverse, they share certain common characteristics:

- Smaller vehicle capacity, ranging from 4-passenger sedans to cutaway buses seating 8-12 persons. The smaller vehicle capacity makes these options more suitable for areas with low transit trip generation.
- Customer responsiveness, such as the ability to reserve rides or requesting a flex route service for a pick-up or drop-off. This provides increased convenience for the customer, such as the ability to access destinations out of reach of fixed-route bus stops, or to travel on a more flexible schedule.
- Enabling technologies that make service delivery possible, or at least more convenient. An example of the use of a mobile phone app to request a trip. That said, peer transit agencies and third-party solution providers have developed tools to ensure that new mobility services are accessible to those who do not have access to such technologies. An example is the use of a call center to make a trip request in addition to a mobile app.
- Accessibility, so that service is available to the largest possible number of users. While not always a complete substitute for conventional ADA Paratransit services, new mobility options can provide increased freedom of mobility for travelers with disabilities, such as more spontaneous same-day travel. An example is the use of lift-equipped vehicles, or the provision of curb-to-curb service that can overcome access barriers related to reaching a bus stop. It is assumed that any new mobility solutions implemented by RTS would be ADA accessible.
- New Operating and Business Models that may include central reservations and dispatch systems, new customer service interfaces, and operating schemes that hybridize aspects of fixed-route and paratransit/demand response operations. Some peer agencies have initiated operations in-house, using agency staff and agency-owned fleets and infrastructure; others have implemented new mobility through third-party providers such as microtransit operators, taxi companies, or transportation network companies (TNCs).

New mobility options can help to overcome some of the challenges to transit service delivery that are common in the Community Mobility Zones. These challenges include:

- Low transit trip generation, due to development patterns, low density, and other factors.
- Dispersed origins and destinations, such as arterial retail shopping centers, housing subdivisions, and industrial parks.
- Poor first/last mile access to bus stops due to lack of sidewalks, discontinuous street grids, etc.
- Travel demand outside of traditional peak commuting hours—for example, shift and retail worker or college students.

### 1.3 What is the Role of New Mobility in the Reimagine RTS Network?

As introduced previously, new mobility options in each of the seven CMZs are intended first and foremost to provide continuing service to customers of the existing fixed-route network that will no longer have fixed route service following the Reimagine RTS route restructuring. This includes a diverse array of customers—commuters traveling to the urban core and major employment centers; transit-dependent persons who rely on service for employment, shopping, medical area, and other life services; school pupils; college and university students; recreational trips; and others.

In the RTS system, new mobility options may be used to serve intra-zone trips within the CMZs (such as from home to a local supermarket or school), as well as connection to the rest of the RTS network for travel further afield.

RTS envisions Connection Hubs in each CMZ to facilitate transfers between mobility services and future fixed route services.

Locations of Connection Hubs were being finalized at the time of this report, but presumed locations have been identified by RTS and are discussed through the remainder of this document. This study assumes that Connection Hubs will be operational at the start of mobility service to provide connections to other RTS services.

### 1.4 Stakeholder and Community Outreach

A series of stakeholder and public outreach events were conducted to inform the study analysis by identifying community needs and concerns and reviewing proposed recommendations for new mobility options. Outreach activities were led by RTS executive management and outreach staff, with support from the consultant team.

- In November and December 2018, the team met with stakeholder representatives in the CMZs to discuss the objectives of the mobility study and to better understand community needs and concerns. Stakeholders varied by CMZ but generally included: social service representatives, school districts who currently rely on RTS service for pupil and/or Urban-Suburban transportation, college and university representatives, key employers, private sector stakeholders, and community officials such as Town Supervisors.
- In February and March 2019, the RTS executive team presented draft recommendations to stakeholders, customers, and community representatives through a series of public information sessions in the CMZs.
- A briefing on the draft recommendations was provided for the RGRTA Board of Commissioners at its monthly meeting held on February 7, 2019.

Following the completion of this report, mobility recommendations will be subject to review and adoption by the RGRTA Board of Commissioners in summer of 2019, as part of the overall adoption of Reimagine RTS recommendations. AS part of this process, public hearings will be conducted in spring of 2019.

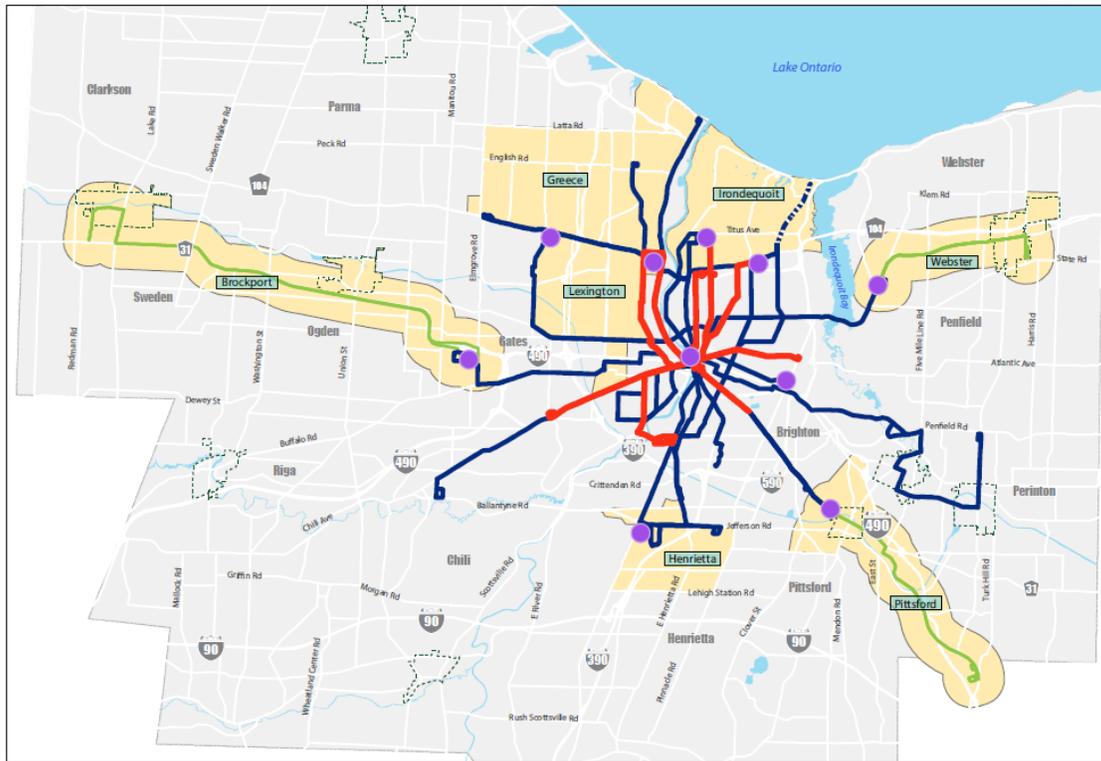
## 2. Community Mobility Zones (CMZs): Existing Characteristics

### 2.1 Introduction

The Analysis of Mobility Options covers seven Community Mobility Zones (CMZs) identified by RTS (Figure 2-1). These are:

- Brockport CMZ
- Greece CMZ
- Henrietta CMZ
- Irondequoit CMZ
- Lexington Avenue CMZ
- Pittsford/Eastview CMZ
- Webster CMZ

**Figure 2-1**  
**Community Mobility Zones**



**Legend** 1 Mile

Connection Hub	Proposed Flex Routes
Reimagine RTS Frequent Routes	Reimagine RTS Seasonal Routes
Reimagine RTS Local Routes	

### 3. Mobility Modes Considered

This section describes mobility option service design alternatives for consideration in each of the Community Mobility Zones.

Table 3-1 presents a summary of the service design alternatives and their attributes for each of the following:

1. Personal Mobility on Demand (PMOD)
2. Scheduled Microtransit
3. On Demand Microtransit
4. Flex Route Microtransit
5. RTS Access Plus – Comingling eligible ADA registrants and general public
6. Vehicle Sharing

**TABLE 3-1:  
MOBILITY MODES CONSIDERED**

SERVICE ALTERNATIVE	SERVICE DESCRIPTION	VEHICLE TYPES	POTENTIAL PROVIDERS	LEVEL OF SERVICE	CUSTOMER ACCESS OPTIONS	FINANCIAL MODEL/ STRUCTURE
<b>Personal Mobility on Demand (PMOD)</b>	Low-capacity - individuals or small groups. On demand (next vehicle available) +/- advanced booked	sedans, minivans	Taxis, transportation Network Companies (TNCs)	Flexible: commuter peak hrs., late night "owl" service, 24/7. Typically 15 to 30 minute response time.	Reservations required: app based and/or phone reservations/call center	Typically subsidized taxi/TNC service. May use pricing policy to influence travel behavior and/or destinations.
<b>Scheduled Microtransit</b>	Moderate capacity - fixed route, set schedule (shuttles, circulators)	vans, shuttle buses/ purpose built vehicles	Private, for-profit and/or RTS	Flexible: span & frequency range from defined periods (commuter peaks) to RTS operating hrs. Primarily as feeders. Typically 30 to 60 minute schedule frequency.	Walk-up service. No booking. Enhanced customer information.	Traditional service contracting (VRHs), sponsorship, advertising revenues. May incorporate on-board fare collection.
<b>Flex Route Microtransit</b>	Moderate capacity, dynamic itinerary.	vans, shuttle buses/ purpose built vehicles	Private, for-profit and/or RTS	Flexible: span & frequency range from defined periods (commuter peaks) to RTS operating hrs. Dynamic in response to demand. Typically 30 to 60 minute response time.	Reservations required: app based and/or phone reservations/call center	Traditional service contracting (VRHs), sponsorship, advertising revenues. Fares may be integrated into RTS fare structure.
<b>On Demand Microtransit</b>	Moderate capacity - fixed route, set schedule (shuttles, circulators) - with deviation up to pre-determined distance/ parameter	vans, shuttle buses/ purpose built vehicles	Private, for-profit and/or RTS	Flexible: span & frequency range from defined periods (commuter peaks) to RTS operating hrs. Primarily as feeders. Typically 30 to 60 minute schedule frequency.	Walk-up service, no booking - for fixed route/ schedule. Reservations, app based for route deviated requests.	Traditional service contracting (VRHs), sponsorship, advertising revenues. May incorporate on-board fare collection.
<b>RTS Access Plus: Co-Mingle ADA and General Public</b>	Moderate capacity, dynamic itinerary.	vans, shuttle buses/ purpose built vehicles	Private, for-profit and/or RTS	Flexible: span & frequency range from defined periods (commuter peaks) to RTS operating hrs. Dynamic in response to demand. Typically 30 to 60 minute response time.	Reservations required: app based and/or phone reservations/call center	Traditional service contracting (VRHs), sponsorship, advertising revenues. Fares may be integrated into RTS fare structure.
<b>Vehicle Sharing (compliment to other service alternatives)</b>	Bike share, car share, and ride share services - expand reach of network at strategic access points	bicycles, electric scooters, sedans	Private, 3rd party vendors.	Flexible. Typically available 24/7.	Typically walk-up service. May be reservation and/or subscription based.	Typically determined market rates.

## 4. Evaluation of Mobility Alternatives

Informed by an understanding of industry practice with next-generation mobility solutions combined with detailed profiles of the respective CMZs, stakeholder and RTS staff input, this section presents an evaluation of mobility solutions for the CMZs.

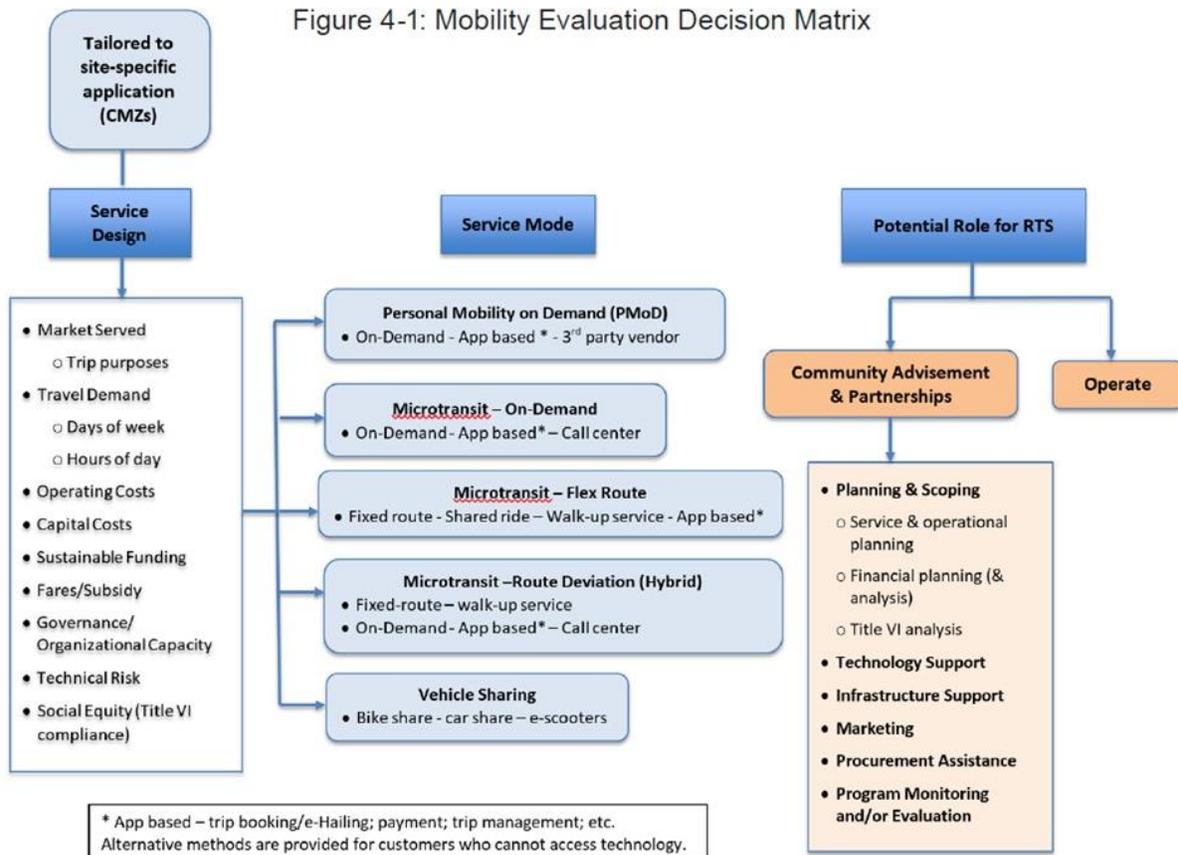
To evaluate the applicability of mobility solutions for each of the CMZs, several tools have been developed including:

- A Decision Framework
- A Service Mode Evaluation Framework
- A Ridership Estimation Tool

### 4.1 Mobility Evaluation Decision Framework

The Decision Framework is intended to guide both internal discussions as well as conversations with key external stakeholders. The Decision Matrix is shown in Figure 4-1.

The Decision Framework may be used to guide discussion where there is expressed interest in advancing a mobility service. Decisions affecting service design characteristics, service mode, and a potential role for RTS may be determined based on consideration of the needs of a particular CMZ and the characteristics of the candidate service modes.



## 5. Recommendations by Community Mobility Zone

### 5.1 Introduction

This section provides a summary of preferred mobility options by CMZ based on the recommended mobility options identified previously:

- On Demand Microtransit
- Flex Route Microtransit
- Personal Mobility on Demand (PMOD)

The recommendations reflect the modes and assumptions used in the ridership model, as well as response to community demographics, geography, needs, and existing fixed-route patterns in each CMZ.

A summary of recommendations for all seven CMZs is provided in the Table 5-1 below.

A map of all CMZs with the proposed CMZ boundary modifications is shown previously in Figure 2-1.

The proposed mobility services in each zone have a combined total service span of 19 hours on weekdays (5:00 AM – Midnight) and 18 hours on weekends (6:00 AM – Midnight) to match the span of the Reimagine RTS fixed routes.

This extended service span ensures that connections are possible to and from the fixed route system for those who rely upon transit very early or very late in the day. It also provides expanded service availability for intra-zone travel compared to existing fixed-route service. The relative cost-effectiveness of PMOD, based on cost per service consumed in low demand periods, allows for this extension of service span at a considerable cost reduction as compared to fixed cost per hour of service modes like fixed route and microtransit.

**TABLE 5-1:  
IMPLEMENTATION OF RECOMMENDED MODES BY CMZ**

COMMUNITY MOBILITY ZONE	FLEX ROUTE MICROTRANSIT	ON DEMAND MICROTRANSIT	PERSONAL MOBILITY ON DEMAND (PMOD)
Brockport CMZ	●		●
Greece CMZ		●	●
Henrietta CMZ		●	●
Irondequoit CMZ		●	●
Lexington Ave CMZ		●	●
Pittsford/ Eastview CMZ	●		●
Webster CMZ	●		●

## 6. Full Report

The full Analysis of Mobility Options final report is available at <https://reimagine.myRTS.com>.