DRAFT SYSTEM RECOMMENDATIONS

reimagine RTS

MAY 2018

TMD
TRANSPORTATION MANAGEMENT & DESIGN, INC.

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Project Context

Reimagine RTS is a planning study that is exploring changes to the RTS fixed-route transit system to better meet the evolving needs of the region. This study focuses on transit service in Monroe County, New York, including the City of Rochester and the surrounding suburbs.

Recognizing that the region's economy and community are changing, RTS is seeking to reimagine public transit in Monroe County to promote growth and better meet the mobility needs of the community. The public transit system in Monroe County was designed decades ago. Since then, demographics have changed, the locations of employment centers have changed, and the number of available mobility options has expanded. Demands from senior citizens, millennials, individuals with disabilities, and those working to escape poverty continue to grow. More businesses are locating to areas of the region that are not served well, if at all. The emergence of new transportation options such as bike sharing, car sharing, and ride sharing is changing people's expectations of public mobility. Reimagine RTS is a response to this new reality.

Investments in public transit have not kept pace with growing demands and investments in the community over the past decade. This has placed added stress on the transit system, making it critical for the agency to focus service investments where transit can be both effective and efficient.

Existing Conditions Review

An analysis of existing conditions provides a foundation for understanding the strengths, challenges, and opportunities for transit in Monroe County. The following section provides an overview of both the quantitative (data analysis) and qualitative (community and stakeholder input) factors that informed that understanding and shaped the development of the guiding principles and goals for Reimagine RTS.

Understanding the Mobility Markets

The pattern and density of land use development are key determinants of whether transit will be successful in delivering public mobility. The following section details how the three D's of development – density, diversity, and design – come together to create various market typologies that each have distinct impacts on transit's ability to be successful. As RTS moves forward, it will be important to focus service investments in places where transit is most competitive – higher-density areas with a mix of land uses and walkable street networks – to ensure the success of the network.

Land Use & Development Patterns

Understanding How People and Places Shape Transit

Land use and transportation have an interdependent and inseparable relationship. Investments in transportation systems strongly influence land use patterns, development types, and densities. Likewise, characteristics of the built environment, such as the diversity of neighborhoods and the location of jobs and housing, significantly affect both the type and level of travel demand.

When designing transit service, it is essential to evaluate the built environment to determine where transit can be both effective and efficient. For transit to be effective and efficient, there must be enough density to provide riders; diverse uses that generate all-day all-week demand; and streets that are designed for all modes and users. Without these key characteristics, providing efficient transit service becomes a challenge.

To remain financially sustainable, RTS needs to focus service in the places where it can be effective and efficient. Over time, as the Rochester region continues to make investments in transit, the system will play a progressively important role in land use and development decisions. Robust transit service will attract residents and employers that chose to be car-free, while also providing crucial connections to economic opportunities for individuals trying to transition from poverty to prosperity. This, in turn, will attract development that creates sustainable and people-oriented communities.

Density

Density is the measure of intensity of development in a given area which means more potential transit customers.

Diversity

Diversity is 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.

Density, Diversity, and Design - Establishing Market Typologies

Several land use and development elements were evaluated to establish market typologies for the various communities and neighborhoods throughout Monroe County. The three market typologies found in the region are Urban, Suburban, and Rural. Each of these market typologies has differing mobility needs and opportunities that have specific implications for transit service delivery.

Density

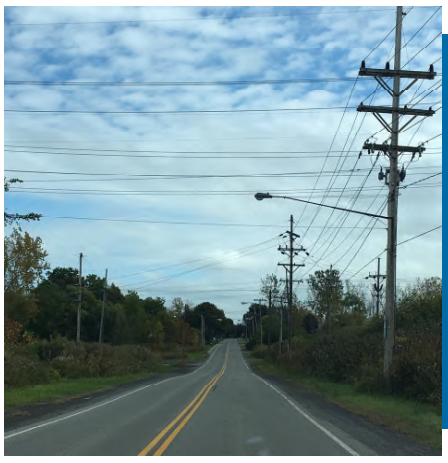
Density is a measure of the intensity of development in a given area. Naturally, more people translates into more riders. Usually expressed in terms of residential dwelling units (du) per acre, employees per acre, or a blend of the two, densities often guide the type and level of transit service that can be supported within a corridor or neighborhood. Whereas higher densities (i.e. greater than 12 du and/or 50 employees per acre) may support high capacity vehicles and increased service frequencies, lower density neighborhoods may be better suited for local service or alternative means of public mobility.

High Density

Residential: 12-24 dwelling units per net acre or greater
Major Employment Center: 50-100 million square feet or greater

Moderate Density

Residential: 7-15 dwelling units per net acre
Major Employment Center: 8-50 million square feet



Low Density

Residential: 5-7 dwelling units per net acre or less
Major Employment Center: 5-8 million square feet or less

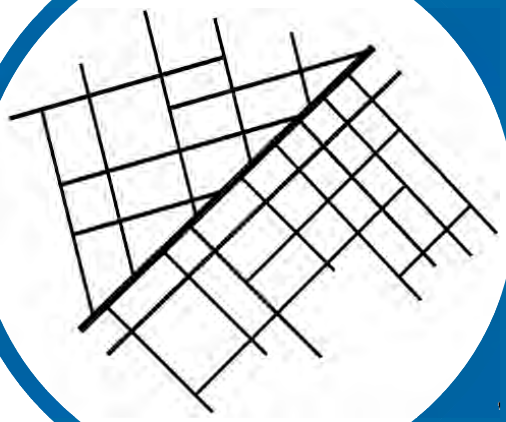
Diversity

Although dense populations centered around or along transit corridors may contribute to high ridership to and from places of work, it is the diversity, or mix, of uses in an area that allows residents and employees to take the bus, walk, or bike to meet their other needs without the daily use of a private automobile. A blend of neighborhoods serving retail and services near home and/or work allows residents to build a lifestyle around transit.

Design

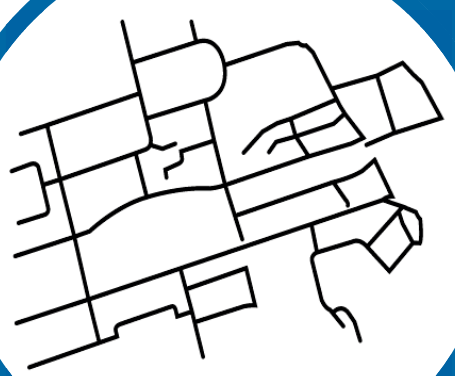
If higher density mixed-use neighborhoods are the foundation of transit-friendly neighborhoods, it is the design, or urban form, that ties them together. High rise apartments, for instance, that are close to transit but separated by a high speed major arterial with narrow sidewalks may be transit adjacent, but they are by no means transit oriented. Similarly, shopping and strip malls may offer a variety of daily retail and service options, but may discourage transit and pedestrian access with large parking lots and numerous curb cuts. Elements of transit oriented design include ample and connected sidewalks, small block sizes, street trees and furniture, properly scaled lighting, on- and off-street bicycle facilities where appropriate, and ADA accessible curb ramps and crossings.

Market Typologies



Urban

Urban networks are typically compact, mixed-use, and multimodal. Compact, dense networks better support transit services with a steady ridership base. Focused, diverse development produces a variety of shorter trips served by efficient infrastructure. Grid networks are typically easier for pedestrians and cyclists to navigate.



Suburban

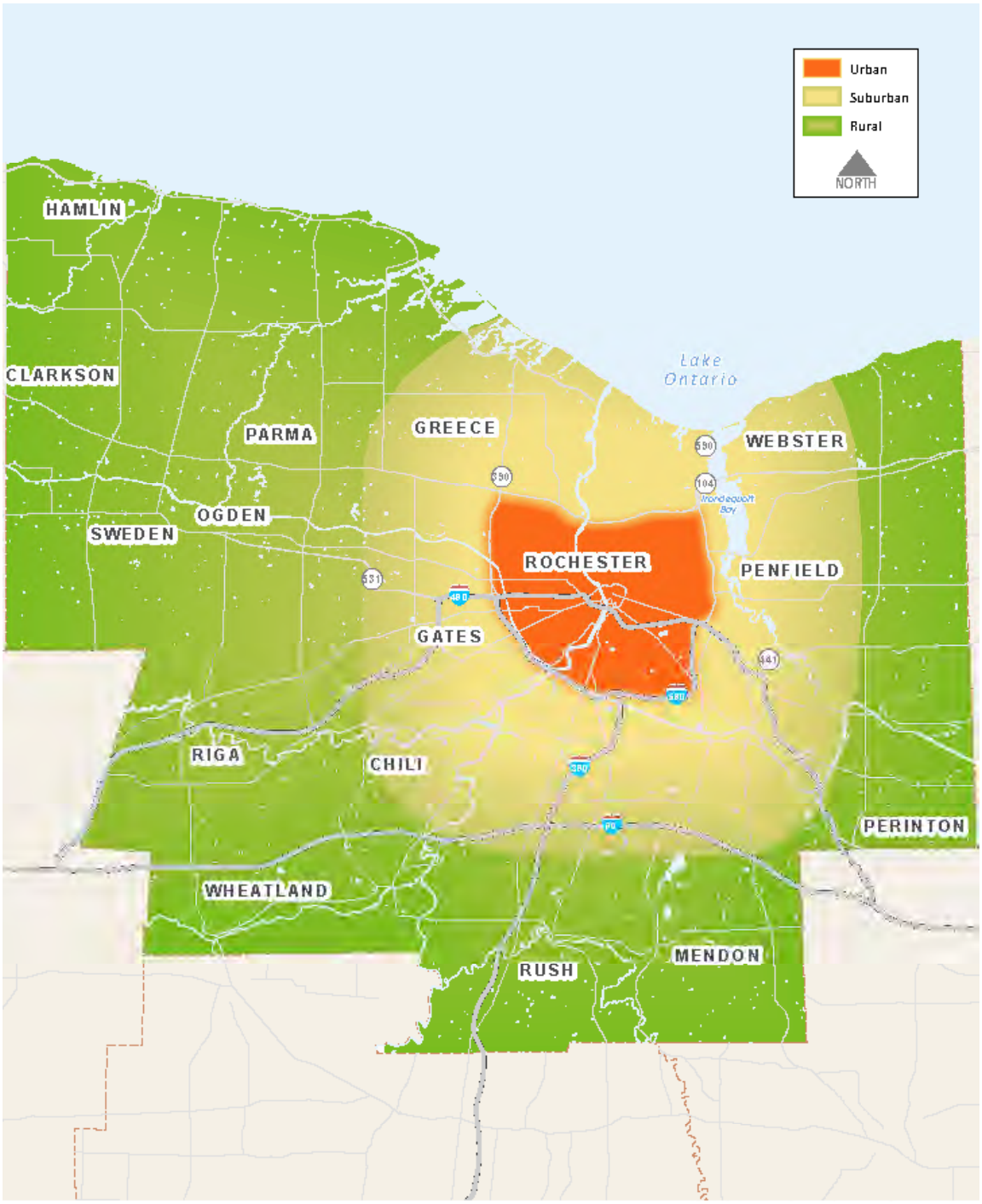
Suburban networks are typically auto-centric, with low density and single-use zoning. Low-density, sprawling neighborhoods make transit infrastructure highly inefficient. When residential, commercial, and retail land uses are separated from one another, automobile travel becomes more convenient than transit.

Rural

Rural areas are typically sparsely populated, auto-centric, and have low density. Wide streets and highways emphasize car accessibility over pedestrian and bike safety. Large plots of land with single uses necessitates personal vehicle travel.

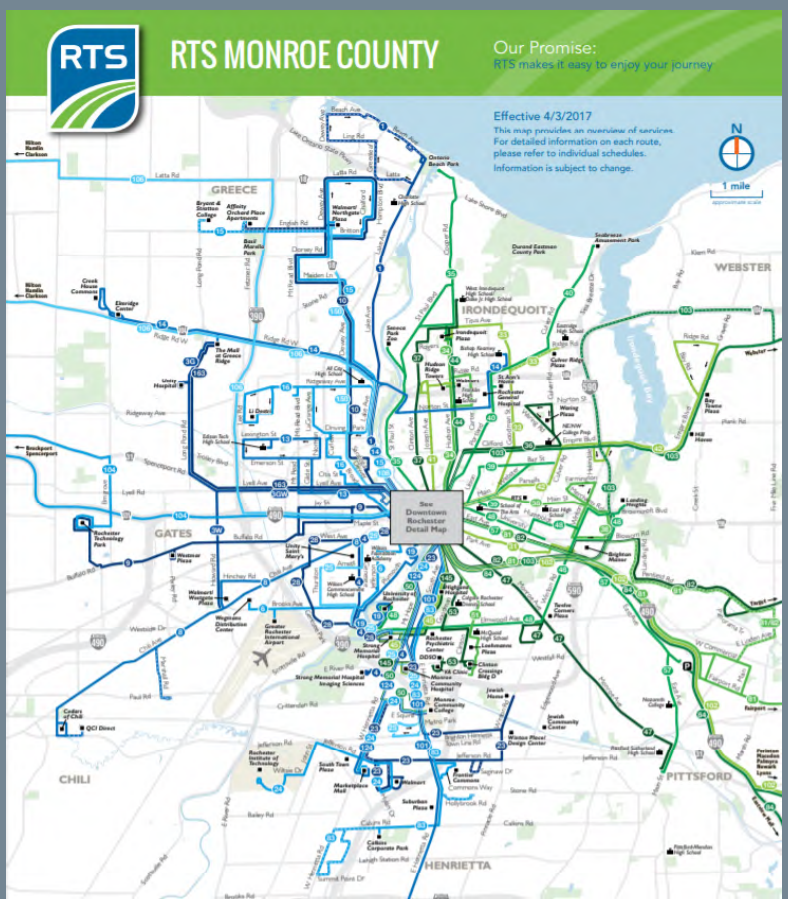
Monroe County Market Typologies

The following map shows the various market typologies within Monroe County. This map can serve as a generalized framework for understanding the differing mobility needs and opportunities within the region.

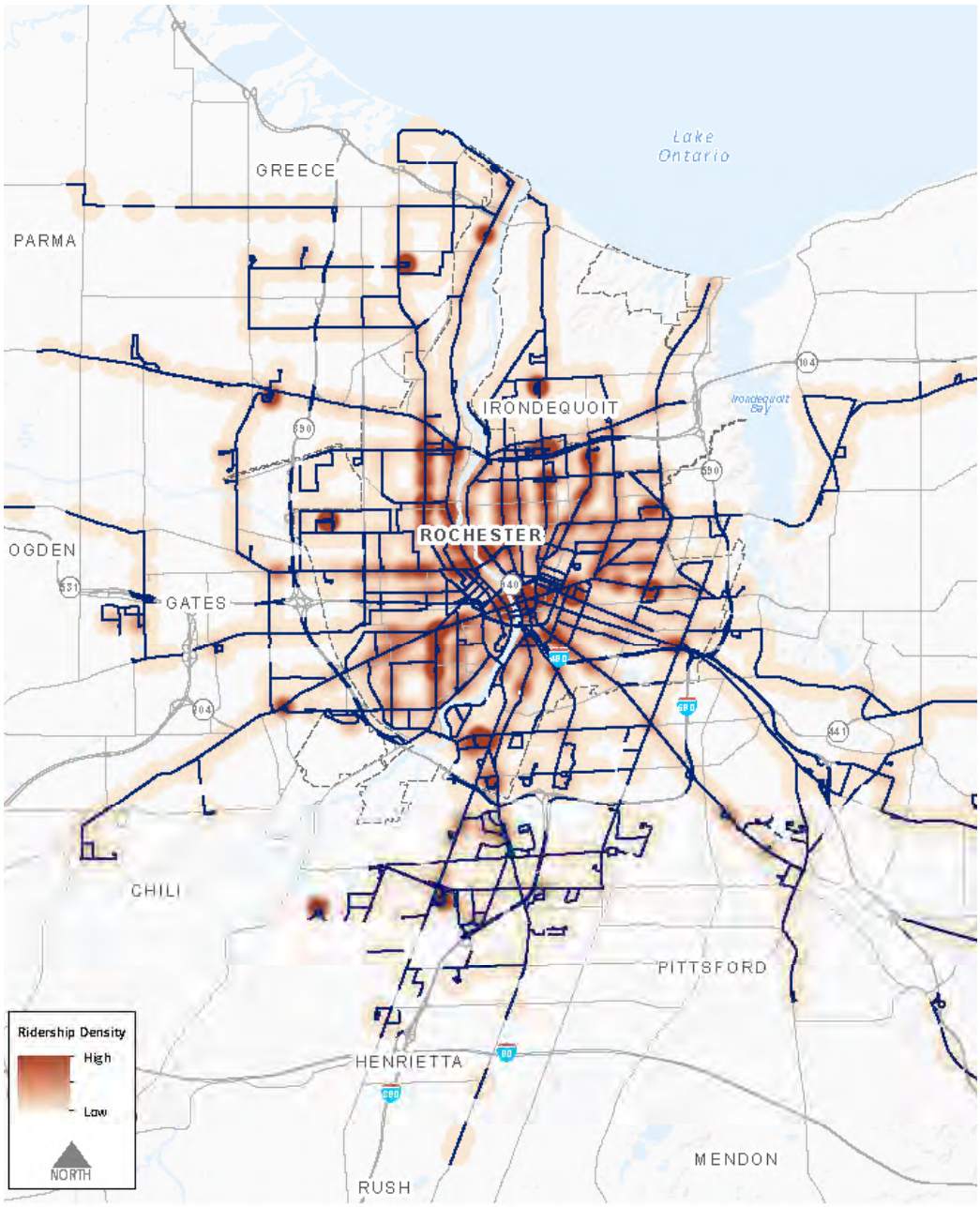


Understanding the System

The evaluation of the existing system is a key component of Reimagine RTS. While the mobility markets provide the context for the system's operations, the service evaluation looks at how well the system interacts with those markets. The following section examines current service delivery, network and route ridership, and service efficiency to identify the strengths in the system, as well as the opportunities for improvement.



Current System Performance



Ridership

The RTS system receives roughly 51,300 boardings per day. As is typical with most hub-and-spoke systems, a map of ridership density of the current network demonstrates a concentration of boardings within the urban core and at employment centers, universities, and attractions scattered throughout the region.

Frequency

Truly frequent service is defined as service that arrives every 15 minutes or better. This frequency encourages "spontaneous" transit use. As seen in the peak frequency map, the majority of the system falls in the 16-60 minute frequency range, with no routes achieving the desired 15-minute frequency.

Productivity

Productivity, which is calculated by dividing the total number of passenger boardings by the total number of revenue hours, is an effective measure of how well a service is performing. The RTS system averages 32.2 passengers per hour, with the strongest routes radiating from the Central Business District along the region's busiest, most dense corridors.

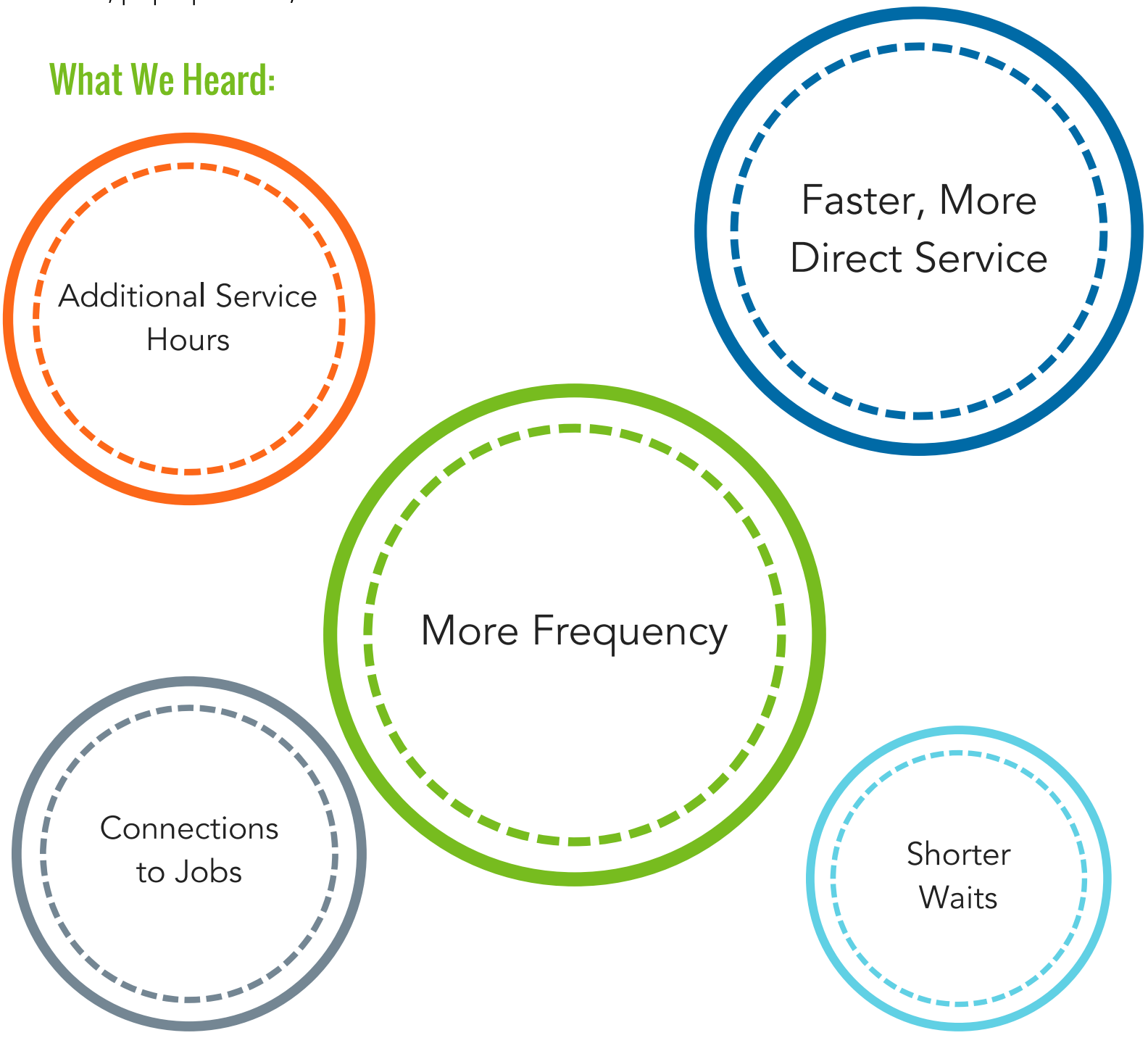
Understanding the Customer

RTS recognizes that realizing a vision for improved public mobility in the Rochester region requires an extensive and collaborative conversation with the community. Throughout the visioning process, RTS engaged key stakeholders, current customers, employees, and the public to learn about priorities and preferences for public mobility in the region. Key themes from those outreach efforts are included on the following page.

Public Outreach Efforts

In order to gather feedback on current system performance and future priorities, the Reimagine RTS project team engaged customers, non-customers, and key stakeholder groups through Public Information Sessions, online and on-board surveys, mapping tools, pop-up events, and various online media forums.

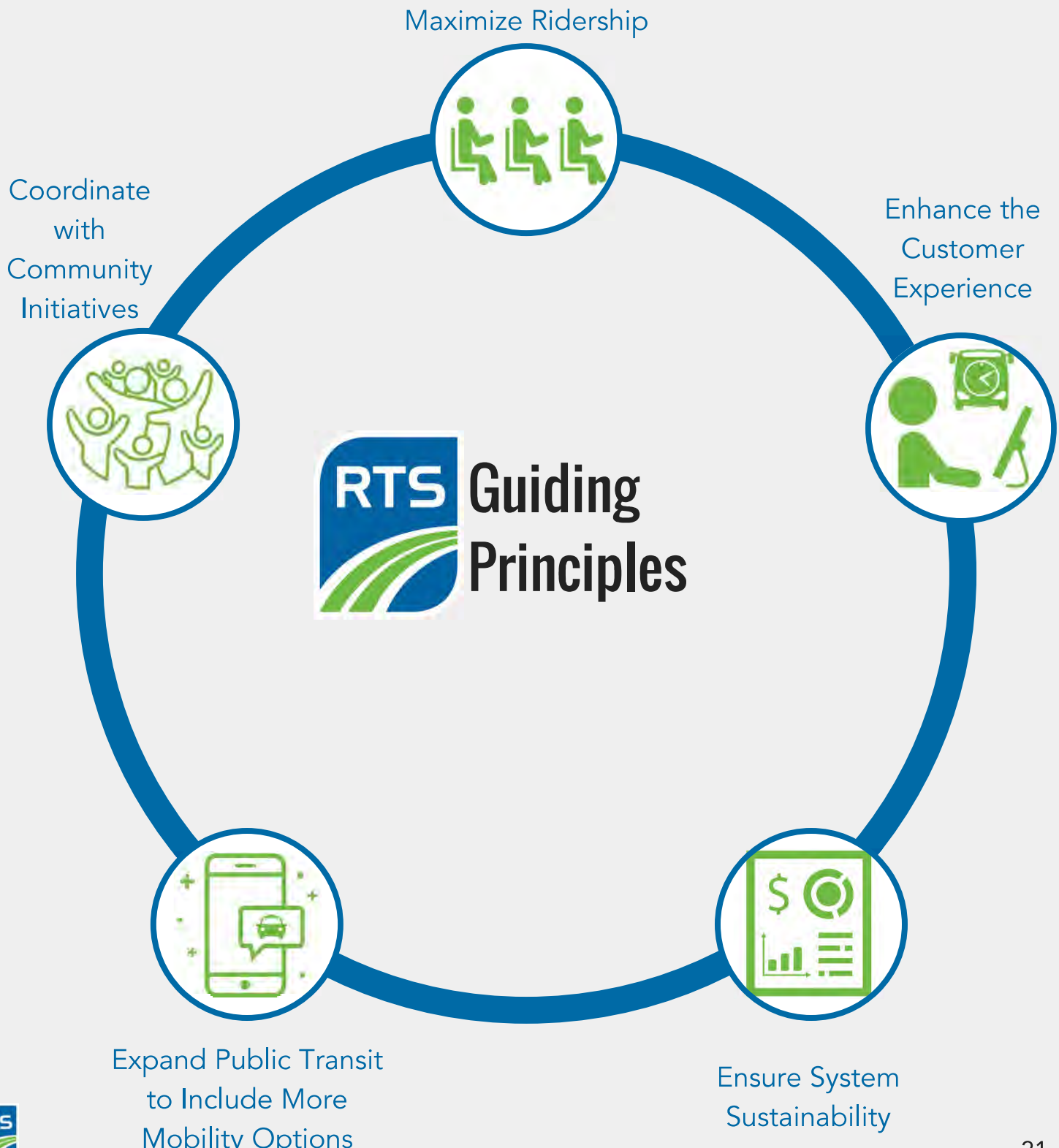
What We Heard:



Guiding Principles

Current market conditions and typologies, system performance, public outreach efforts, and input from numerous stakeholders steered the development of the Reimagine RTS guiding principles and goals. These guiding principles recognize RTS' priorities, establish a framework for decision-making, and provide a foundation for improving service quality. Each guiding principle is broken down into specific goals, performance metrics, targets, and service design actions that provide RTS with a clear pathway to success.

RTS Guiding Principles



Guiding Principle: Maximize Ridership

RTS's financial stability relies on its ability to sustain a strong ridership base. Outreach done through recent on-board surveys revealed that work is by far the most common trip purpose for current customers. To encourage customers to use the network for a variety of different trip purposes throughout the day, RTS must provide service that is as fast, comfortable, and convenient as automobile travel. This will facilitate spontaneous 'lifestyle mobility,' growing ridership by attracting new customers and encouraging existing customers to make more trips on transit.

GOAL

Increase the total number of boardings

PERFORMANCE MEASURE

Passenger counts (APC technology)

TARGET

TBD

ACTIONS

- Focus service in areas with high ridership potential
- Expand frequent network (15 minutes or better)
- Expand off-peak and weekend mobility options
- Strengthen network integration for all public mobility options
- Simplify the system

Guiding Principle: Enhance the Customer Experience

In order to provide a more attractive service, RTS needs to focus on enhancing the customer experience by decreasing customer wait time. Frequency is the number one factor customers consider when deciding whether or not to use transit. Providing service that is frequent enough for customers to walk up to a transit stop and just catch the "next trip," rather than plan to catch a specific trip makes using transit easier and more convenient to use, encouraging additional trip-making.

GOAL

Decrease customer wait time

PERFORMANCE MEASURE

Percent of service within the frequent network

TARGET

TBD

ACTIONS

- Expand frequent network (15 minutes or better)
- Provide coordinated transfers at key hubs or times of day
- Provide real-time information for all integrated mobility options
- Provide real-time information at key hubs and stops

Guiding Principle: Enhance the Customer Experience

In addition to decreasing the out-of-vehicle wait time, getting customers to their destinations as quickly as possible will further attract new customers and enhance the customer experience. Providing fast, direct travel can be done through simplifying the system, streamlining routes, investing in transit priority, and establishing new crosstown routes that will offer customers more flexibility.

GOAL

Decrease customer travel time

PERFORMANCE MEASURE

Calculated travel times

TARGET

TBD

ACTIONS

- Streamline routes and minimize deviations
- Increase transit priority on major corridors
- Optimize bus stop spacing and placement
- Provide more crosstown options and minimize need for downtown transfers

Guiding Principle: Ensure System Sustainability

Like any other service provider, RTS works with constrained and variable financial resources. Decreasing the net RTS subsidy spent per customer will ensure RTS' existing and future financial sustainability. This can be done through investing service in areas of high ridership potential, correctly matching services to meet market demands and needs, exploring new partnerships, and becoming a key stakeholder in future land use decisions.

GOAL

Decrease RTS subsidy per customer

PERFORMANCE MEASURE

Subsidy per customer boarding

TARGET

TBD

ACTIONS

- Focus service in areas with high ridership potential
- Use the 'Mobility Toolbox' to match service to markets
- Continue partnerships with businesses and institutions to provide cost-effective mobility
- Coordinate with city and towns on land use and street design

Guiding Principle: Coordinate with Community Initiatives

When RTS is a major stakeholder in future land use and street design developments, transit becomes an integrated part of the community instead of an afterthought that must adapt to the built environment. Promoting the development of new housing and employment centers around the frequent network makes transit an easy, cost effective choice for everyday mobility.

GOAL

Encourage community development around the frequent network

PERFORMANCE MEASURE

Percent growth in jobs and population within 1/2 mile of the frequent network

TARGET

TBD

ACTIONS

- Coordinate with city and towns on land use decisions
- Coordinate with city and towns on street design and infrastructure to support frequent transit
- Grow partnerships with businesses and institutions to provide enhanced access using new mobility initiatives

Guiding Principle: Expand Public Transit to Include More Mobility Options

With increasingly advancing technology, RTS recognizes that the traditional fixed-route model of service is no longer the only public mobility option. To stay competitive, RTS should start to think of itself as a provider of public mobility, as opposed to just a provider of public transit. This will include identifying service providers that can meet the urgency of consumer expectations and building relationships that provide opportunities for integrated, multi-modal travel.

GOAL

Increase the diversity of services available to customers

PERFORMANCE MEASURE

Number of alternative mobility partnerships

TARGET

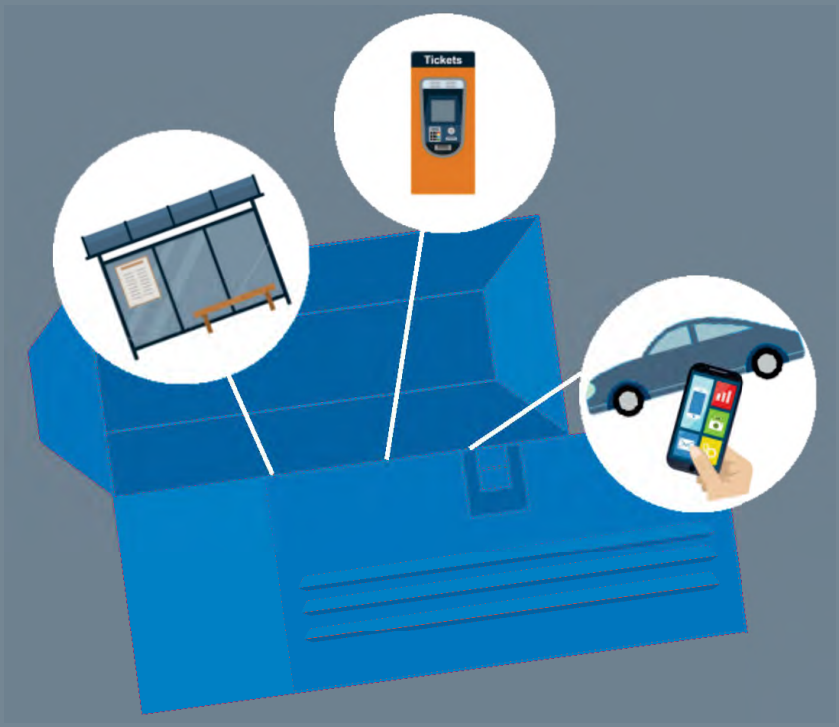
TBD

ACTIONS

- Complement the fixed-route network with emerging mobility options (Mobility on Demand)
- Use the 'Mobility Toolbox' to match services to markets
- Provide fare instruments that allow for "fare capping" and integrated network travel
- Increase availability of non-cash fare instruments

Mobility Toolbox

The suite of public mobility tools available to cities and regions now goes well beyond traditional local bus service. These tools differ in their key target markets, land use contexts, mobility role, and service levels. The purpose of this toolbox is to identify the public mobility options that are available today and understand how they can best be used across the diverse markets that exist within the greater Rochester region.



Mobility Toolbox Categories

CORE

The core all-day fixed-route transit network provides the majority of service and coverage to the system's primary transit markets. The core network can include a broad spectrum of service tiers including local and frequent bus, enhanced on- and off-street bus, and smaller vehicle shuttle buses. These types of services are most appropriate for urban land uses, with some suburban locations.

COMMUTE

Service designed specifically to accommodate work trips during the morning and evening peak periods. Tools include employer-run shuttles, ridesharing such as car and vanpool services, and microtransit in which transportation network companies (TNC) offer point-to-point, but shared service on common travel routes. These mobility options best suit suburban or rural land uses, where all-day fixed route service is not feasible.

COMMUNITY

Suite of tools to extend the core network to specific communities or geographic areas. For example, demand response transit (DRT) is typically targeted and designed for transit reliant populations such as seniors or persons with disabilities who are unable to access traditional fixed-route transit. For transit lifestyle markets (e.g., young professionals, students, no vehicle households), mobility tools including bike sharing and TNCs extend the reach of the system by offering "first and last mile" connections to transit stops and corridors. These types of services are applicable in urban, suburban, and rural communities.

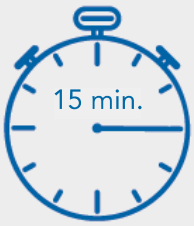
Core Transit Options

Core transit options include a range of service tiers including enhanced bus, local and frequent bus, and smaller shuttle buses. Together these options form the core all-day fixed route network and deliver the majority of the service and coverage provided by the system.

Core Transit Options

Frequent Local Bus

Frequency



Span

5:00 AM - Midnight

Frequent service
6 AM to 6 PM
Weekdays

Stop Spacing

1/4 to 1/3 mile

Vehicle Types

articulated bus

standard bus

Network Role

Provides frequent intraregional travel to local and regional destinations along major arterials and travel corridors.

Key Markets

Moderate to high density urban neighborhoods, mixed-use neighborhood nodes and corridors, local and regional job centers.

Relationship between Density & Frequency

The workhorse of most public mobility systems, local service constitutes bus routes that run primarily on arterial streets in mixed traffic, with narrow stop spacing (approximately eight stops per mile) and operating at speeds of 15 mph or less. Frequencies generally are between 1-3 buses per hour (20 - 60 minute headways). Local service is designed to favor accessibility for residents and employees over speed and availability.

At its most basic, frequent local service is simply local service with shorter wait times between buses. Across systems around the country, frequent service is typically defined as routes with a minimum of 4-6 buses per hour (10 - 15 minute headways). It is at this threshold that riders are less likely to need a schedule knowing they can show up at a stop and not have to wait long for the next bus. To increase speed and reliability, routes may incorporate some elements of on-street rapid transit (e.g. transit signal priority, low-floor buses, special branding and information, wider stop spacing).

Local Bus

Frequency

30 min.

Span

5:00 AM - Midnight

30 minute service
6 AM to 6 PM
Weekdays

Stop Spacing

1/4 mile

Vehicle Type

standard bus

Network Role

Local bus services connect smaller communities of lower population densities to the larger regional transit system.

Key Markets

Low to moderate density urban neighborhoods, neighborhood oriented retail and services, and local job centers.

In order to generate the ridership to support the higher operating costs of frequent service, corridors should exhibit more compact urban style development (minimum of 7-15 housing units per net acre) and connect to large employment centers. Furthermore, service on candidate corridors should exhibit high ridership productivity (i.e., boardings per revenue hour of service), representing a minimum of 150% of the system-wide average.

Commute Options

Commute options consists of service designed specifically to accommodate work trips during the morning and evening peak periods. Commute-based ridesharing refers to regularly organized rideshare services versus on-demand options. This includes carpool and vanpool programs, employer shuttles, and other microtransit options.

Employer Shuttles

Characteristics

Employer-provided shuttles pick up employees at collection points. Travel times are tailored to company start and end times, with a guaranteed-ride-home program responding to spontaneous trips and flexible schedules.

Network Role

Provides direct service for employees from a set collection point to work.

Key Markets

Typically utilized by commuters who look for fast, direct travel to their workplace. Connects employees to job sites located in suburban and rural areas.

Ridesharing

Characteristics

Service where two or more users share high occupancy cars or vans to common or proximate destinations and origins. Driving responsibility is often shared amongst patrons who are able to access high occupancy vehicle (HOV) lanes and preferred parking.

Network Role

Provides more efficient point-to-point service for targeted markets with specific travel needs.

Key Markets

Typically utilized by commuters who look for fast, direct travel. Connects lower density suburban communities to employment centers.

Community Mobility Options

Community mobility extends the reach of the core network by providing first/last mile connections to specific communities or geographic areas. These connections include both traditional mobility options such as demand response transit and emerging mobility options such as bike-share and TNCs.

CREDIT: Enterprise Holdiings

Traditional Options

Demand Response

Characteristics

Demand Response Transit (DRT) does not operate on a fixed route or schedule, but instead operates on a reservation based service. Depending on the need, vehicles can accommodate door-to-door or curb-to-curb service.

Key Markets

Transit reliant populations, including elderly and disabled individuals. Lower density areas with unmet passenger demand among transit reliant populations.

Network Role

DRT meets the needs of underserved and transit dependent populations by connecting them to local and regional destinations. Facilitates independent living by providing disabled patrons access to the larger transit system, or in some cases, curb to curb access to their destinations.

Traditional Options

Shuttle

Characteristics

Smaller transit vehicles providing first/last mile connections to the regional transit system or major destinations with a dispersed land use pattern. Shuttles are often sponsored by major employers (e.g., campuses or business parks) or institutions (e.g., hospitals, higher education). Typically operate within confined service areas with close stop spacing or point to point services.

Network Role

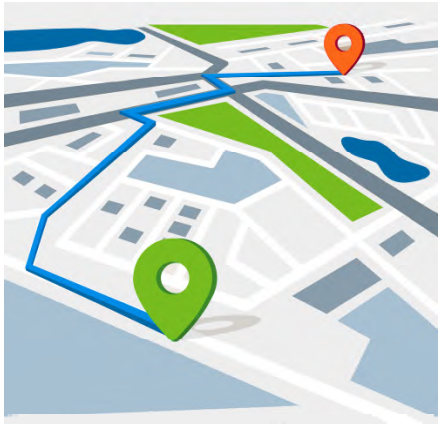
First/last mile connections to major transit hubs or private and public campus environments.

Key Markets

Transit reliant populations, including elderly and disabled individuals, as well as other lifestyle transit riders looking to make short-distance trips. Major employment parks/centers, large education and institutional uses.

First/Last Mile Connections

Community transit tools are a more cost effective solution to providing first/last mile connections from lower density areas to the fixed-route core network. As such, these services are employed based on user demand and are not generally associated with specific minimum density thresholds. For example, senior housing may be located in an otherwise low density area, but exhibit high demand for DRT/paratransit. In the case of low to medium density business parks or campuses, TNCs or employer-sponsored shuttles or vans can connect employees to nearby park-and-ride lots or mobility hubs (e.g. transit center with other public mobility options). The flexibility of these tools allows them to be more responsive to changing conditions than fixed-route service.



Emerging Mobility Options

Community mobility has taken new forms in recent years. With more shared-mobility travel options emerging in the marketplace, community mobility serves a critical role in first/last mile connections. Shared car and bike services can help complement a robust transit network in an efficient and effective manner.

Emerging Options

Carsharing

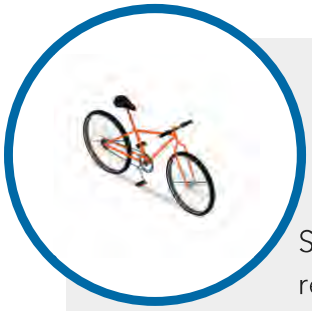
Allows users access to a fleet of cars based on a subscription style service. Users pay only for time used and depending on the service can leave the vehicle parked safely, or must return the vehicle to a specific hub.

Higher density urban neighborhoods with low vehicle ownership rates serve as the key market.

Microtransit

Reservation-based TNC service with multiple users on single trips. Increase in travel times can be offset by lower costs for users.

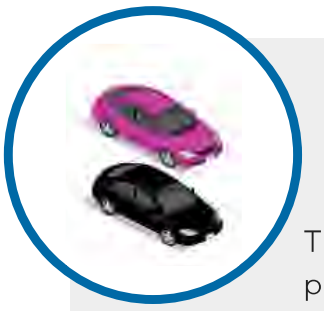
Key markets include higher density urban neighborhoods, large education and institutional uses, and major employment centers.



Bikesharing

Self-serve limited-term bicycle rental designed for short (0.5 to 3 miles) point-to-point local trips.

Key markets include high density urban neighborhoods, large education and institutional uses, and major employment centers.



TNCs

TNCs (e.g. Uber, Lyft) allow patrons to access a team of contract drivers to take them point to point wherever they need to go based on a standard rate. Users must subscribe to the service in order to utilize it. Typically the service is accessed via a mobile device. Subsidized versions of services can provide cost effective solutions for first/last mile connections where running fixed-route service is not feasible.

TNC key markets include all urban contexts with sufficient densities to support TNC driver and user enrollment.

Draft Plan

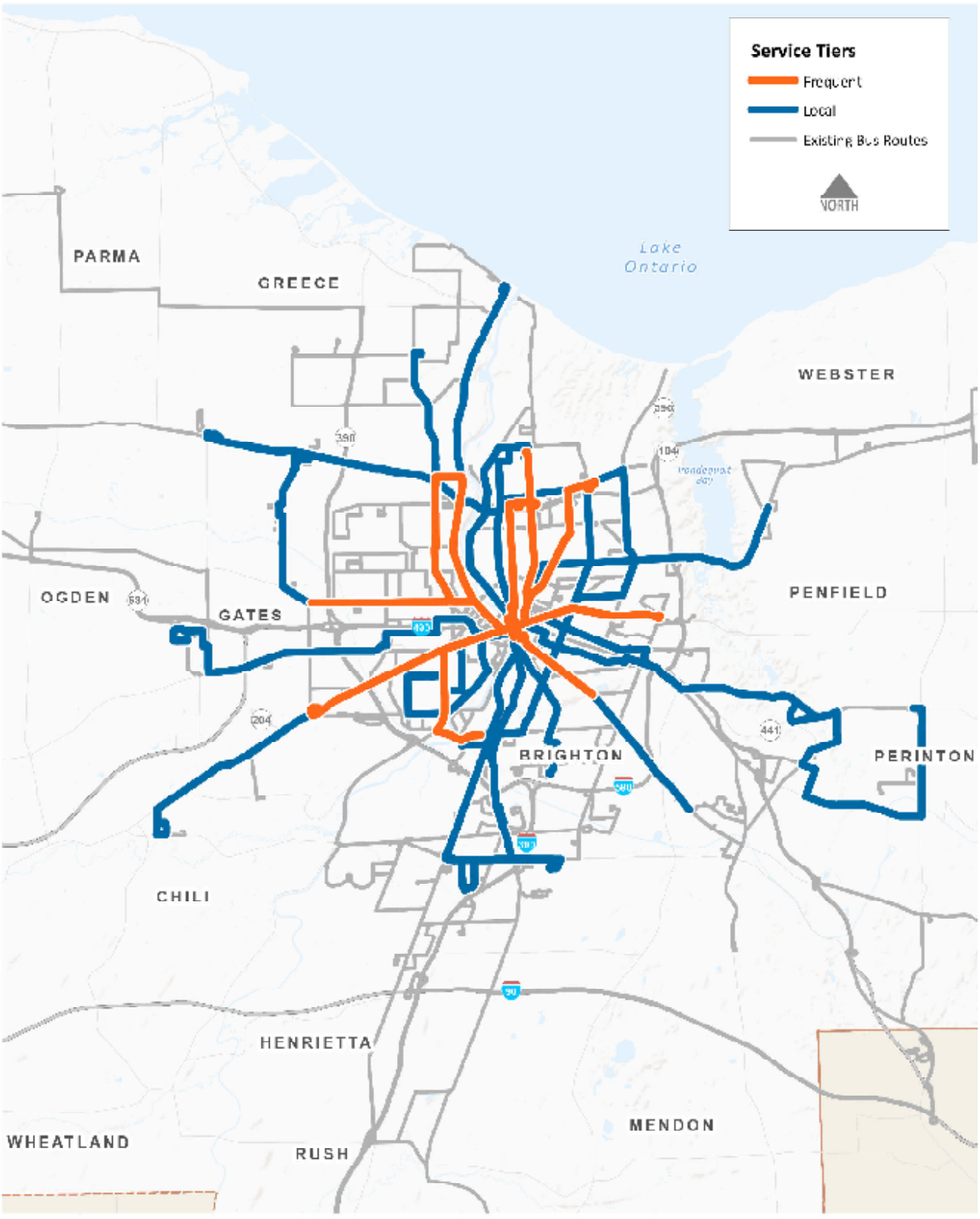
Reimagine RTS refocuses the system using the guiding principles and a best practice approach to deliver what works: a comprehensive network of frequent transit; a simplified system that is easy to understand and use; and an improved customer experience that maximizes effectiveness and efficiency while minimizing the impact on current riders. Specific alignment changes within the RTS system focus on growing ridership and productivity through more direct service, as well as creating a more connected network that reduces the need for customers to transfer routes downtown.

The proposed recommendations are laid out in the following section by service tier. Each tier is mapped, and each map is accompanied by a list of routes included in that tier.

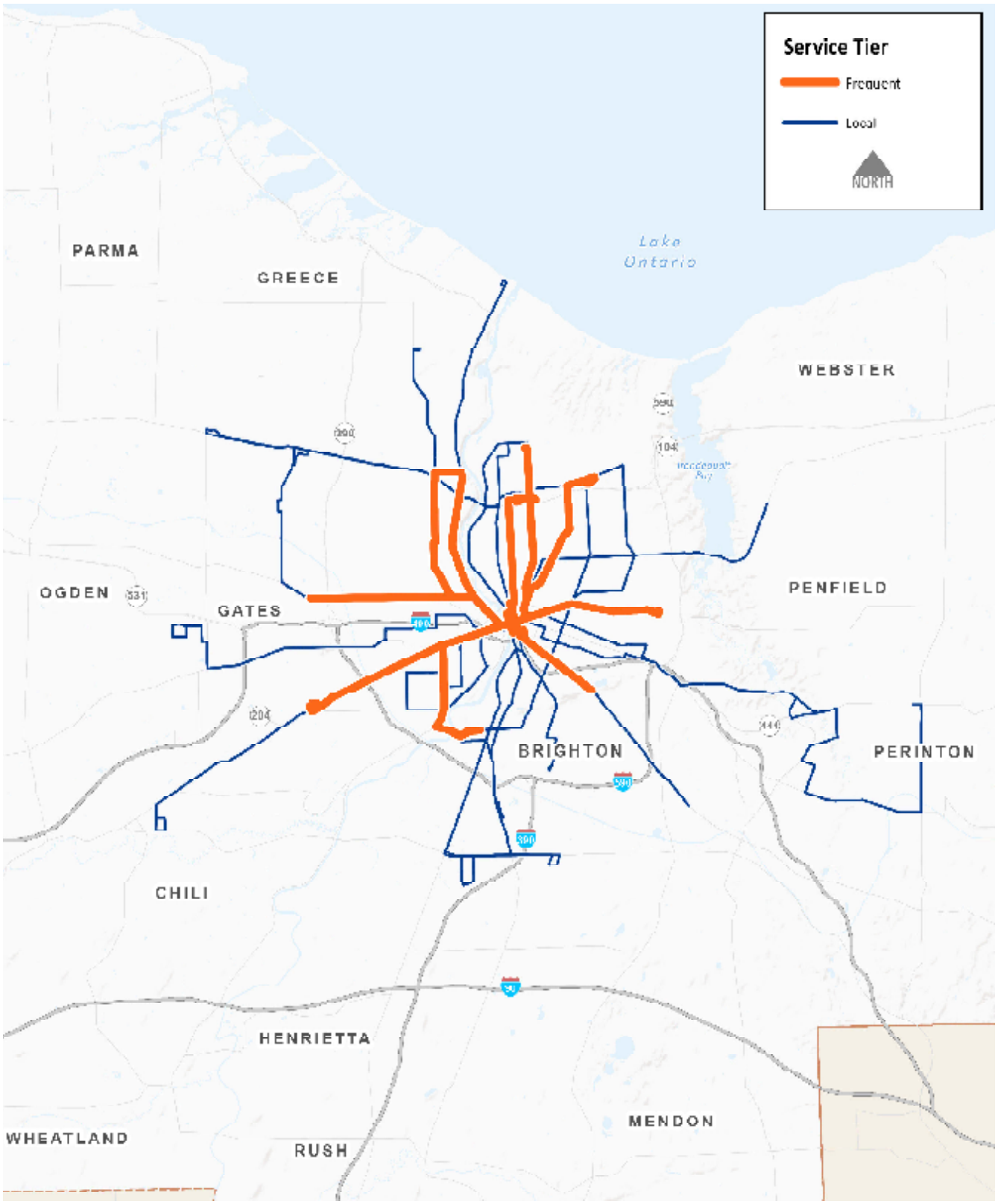
Fixed Route Network

As a result of current financial constraints, the fixed route network demonstrates a focus on increasing frequent service on the region's busiest corridors, getting more people where they want to go faster.

Draft Recommended Network



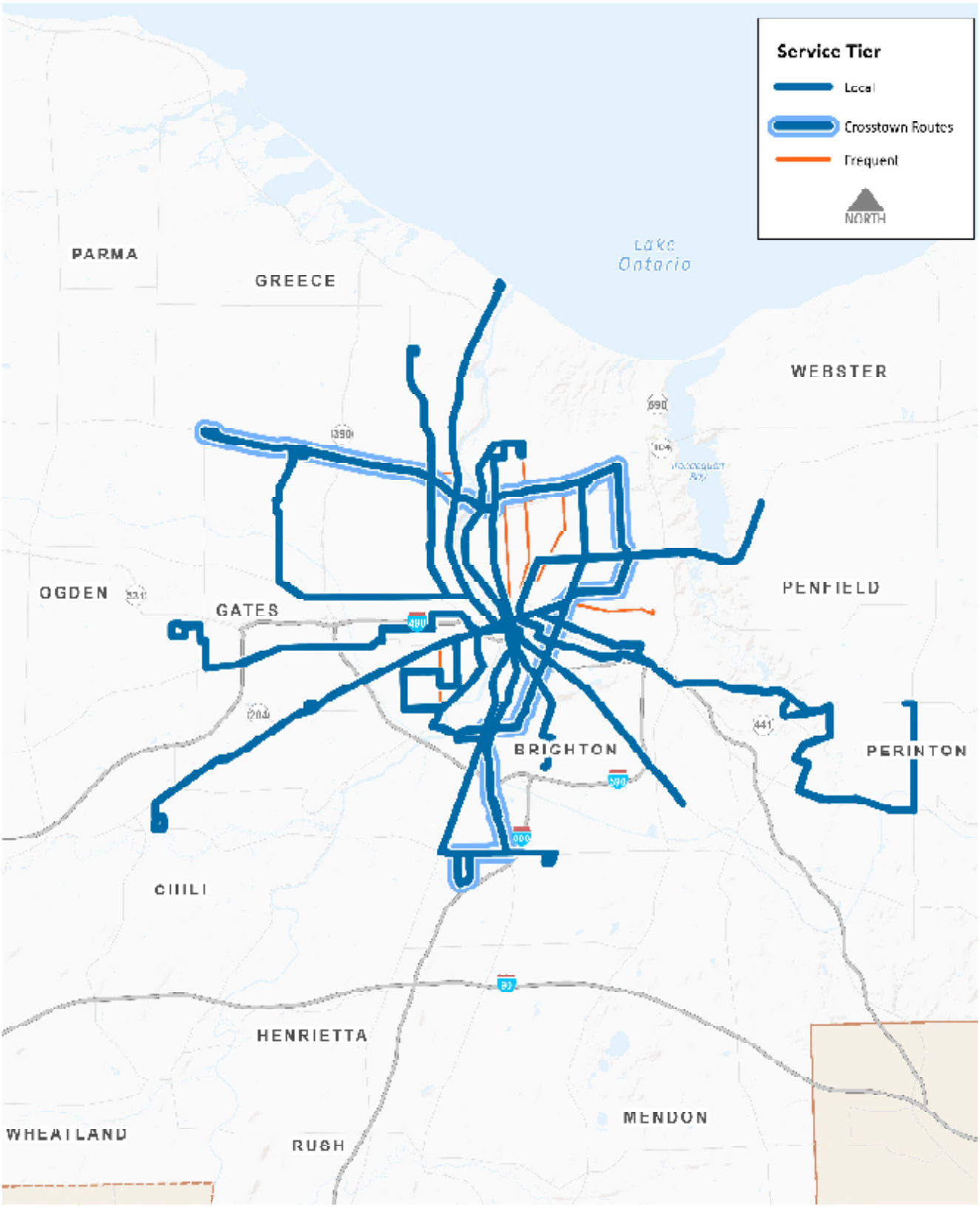
New Recommended Frequent Network



The biggest improvement to the RTS system is a new frequent network, consisting of 10 routes. These routes are proposed to have 15-minute service all-day on weekdays, providing a significant improvement for RTS customers. The 10 routes included in the frequent network represent RTS' highest ridership and most productive routes and cover major corridors throughout the entire city, creating a true network of frequent service that connects multiple neighborhoods and destinations.

Route	Name	Service Tier	Weekday Frequency					Weekday Span		Weekend Frequency			Saturday Span		Sunday Span	
[illegible]																
[illegible]																
[illegible]																
[illegible]																
10	Dewey Short Line	Frequent	30	15	15	15	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
34	Hudson	Frequent	30	15	15	15	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
38	East Main	Frequent	30	15	15	15	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
40	Portland	Frequent	30	15	15	15	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
41	Joseph	Frequent	30	15	15	15	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
47	Monroe Short Line	Frequent	30	15	15	15	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight

Simplified Local Service



Local services supplement the Frequent Network and complete the network by filling gaps, extending coverage to areas warranting fixed route service, and serving specific target markets. These routes follow the best practices set out in the guiding principles and service design actions, including simplified route alignments and new crosstown connections. With few exceptions, local routes are proposed to operate every 30 minutes on weekdays, offering the potential to connect with every other trip within the frequent network.

Route	Name	Service Tier	Weekday Frequency					Weekday Span		Weekend Frequency			Weekend Span		Service Day Span	
								Start	End				Start	End	Start	End
1	Lyell-Long Line	Local	60	30	30	30	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
5	Lyell-Long Line	Local	60	30	30	30	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
8	Clarissa Line	Local	60	30	30	30	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
9	Seyfried	Local	60	30	30	30	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
10	Dewey-Long Line	Local	60	30	30	30	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
12	Plymouth	Local	60	30	30	30	30	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
24	Monteagle	Local	60	30	30	30	30	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
30	Empire/MCC	Local	60	30	30	30	30	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
31	Park	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
33	Goodman	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
35	St. Paul	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
37	Clinton	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
45	South Av.	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
47	Monroe Long Line	Local	60	30	30	30	60	5:00 AM	Midnight	60	30	60	6:00 AM	Midnight	6:00 AM	Midnight
48	University Av.	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
51	S. Clinton	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
81	Fairport	Local	90	90	90	90	90	5:00 AM	Midnight	90	90	90	6:00 AM	Midnight	6:00 AM	Midnight
103	Webster	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
NEW	Ridge Road Crosstown	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight
NEW	Culver Road Crosstown	Local	60	30	30	30	60	5:00 AM	Midnight	60	60	60	6:00 AM	Midnight	6:00 AM	Midnight

Benefits & Impacts

A majority of customers will experience a positive impact from the proposed recommendations, including new access to frequent service, more direct trips, shorter travel times, and a system that is easier to understand. Conversely, a small number of customers who are currently using low-ridership routes or route deviations that are recommended for elimination will potentially experience a loss of service or longer walks to service. The following section illustrates the customer benefits and impacts of the proposed recommendations.

Customer Benefits

Frequent Service

RTS currently does not have a frequent transit network, or any frequent routes. The Reimagine RTS plan introduces a new frequent network, with 10 routes proposed for 15-minute service. Under the proposed recommendations, two out of three existing weekday customers will have access to this new frequent service, and more than 170,000 residents will be within a 10-minute walk of frequent service.

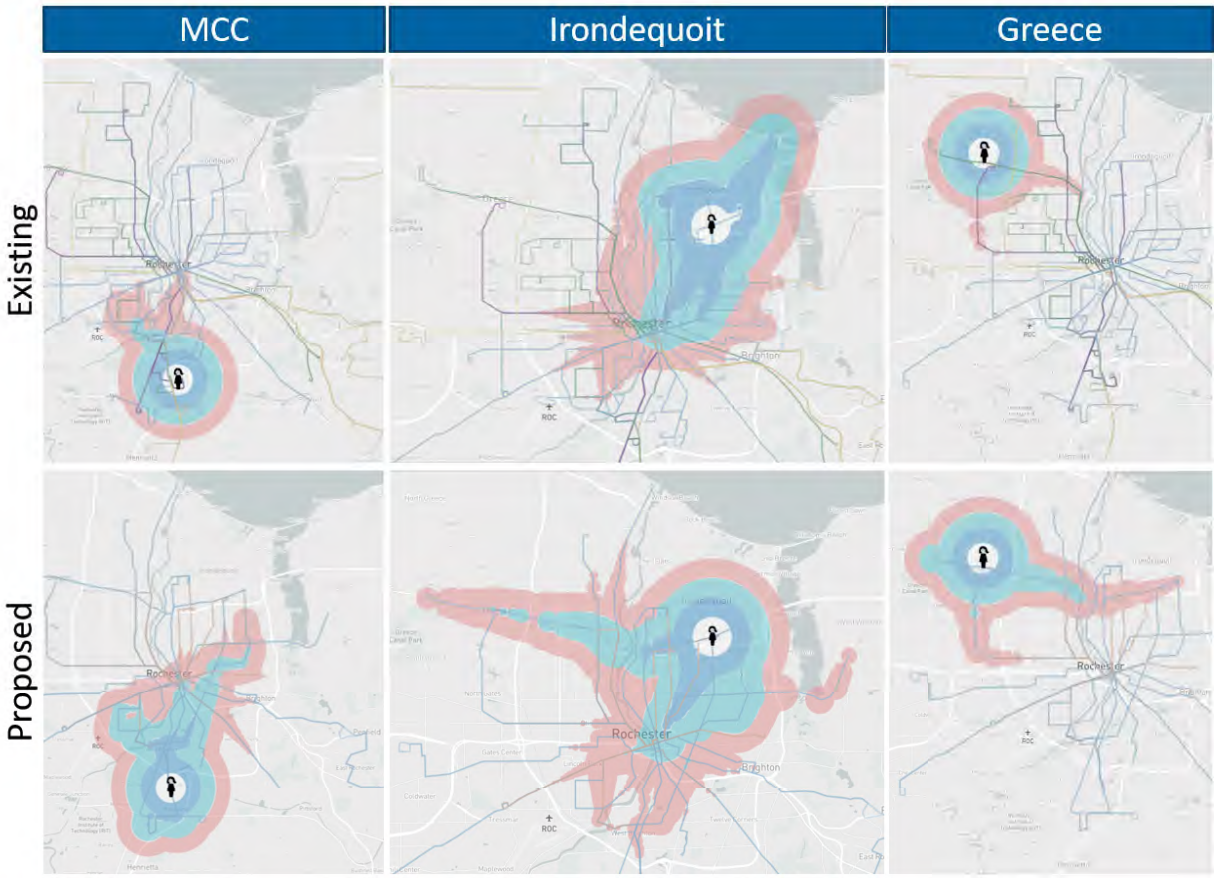
	Frequent Network (15-Minute All Day Service)	
	Existing	Proposed
	**0** weekday customers have access to frequent service	**32,900** weekday customers will have access to frequent service
	**0** people have access to frequent service	**174,400** people will have access to frequent service
	**0** jobs have access to frequent service	**109,300** jobs will have access to frequent service

Based on ½ mile

Improved Travel Times

Reimagine RTS improves in-vehicle travel times by reducing delay from off-corridor deviations (streamlining) and creating new crosstown connections. Streamlined route alignments provide more direct links between key destinations and decrease both route mileage and travel time, speeding up service for riders and resulting in a more cost-effective service for RTS. New crosstown routes improve travel times by providing direct connections between neighborhoods and destinations outside of downtown, reducing the number of transfers required for numerous trips.

Example: How far can a customer go on average at 5pm on a weekday?

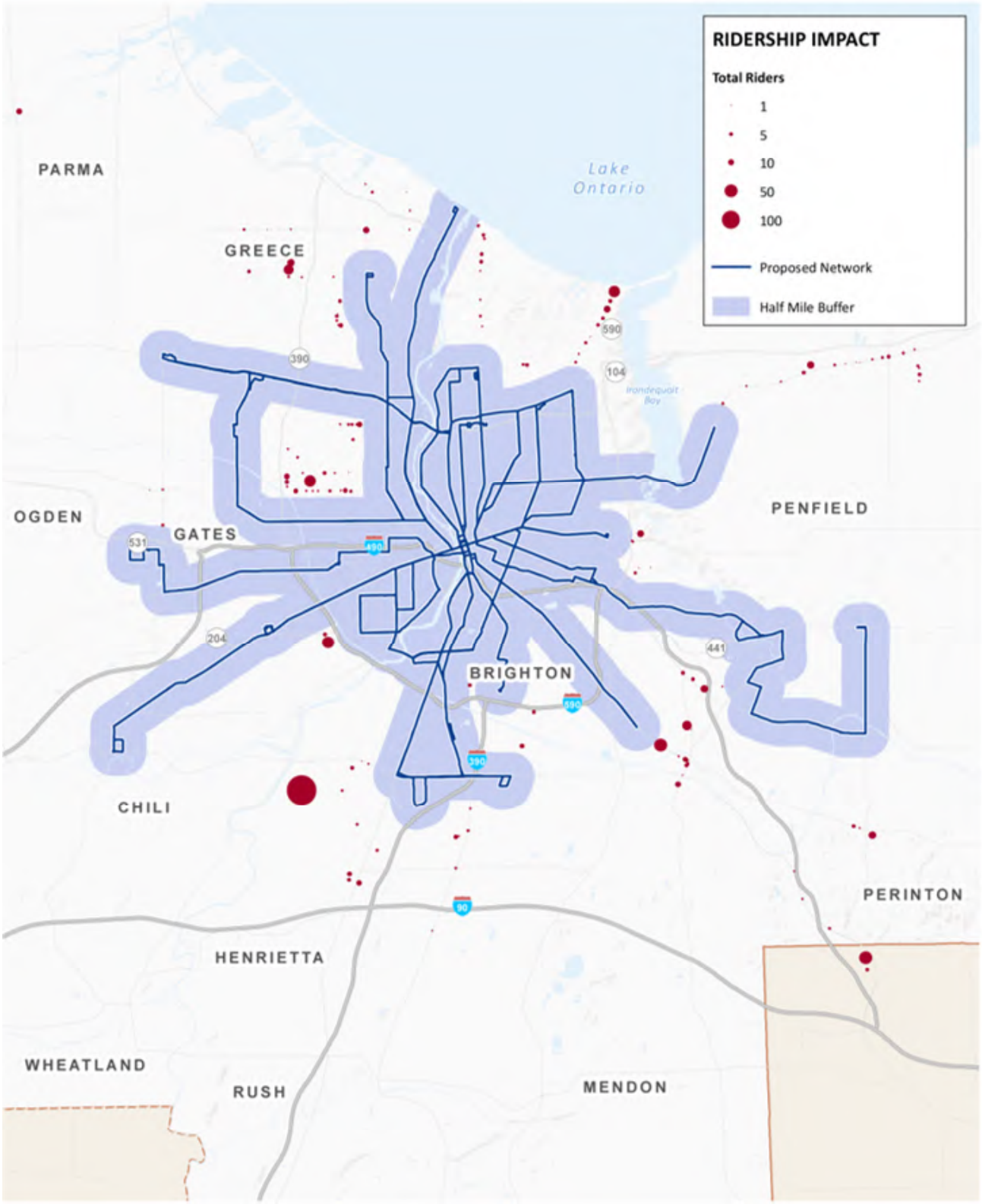


Legend

15 min
30 min
45 min
60 min

Customer Impacts

A key objective during the development of recommendations was to minimize negative impacts to existing customers. While some routes and route segments are proposed for discontinuation, special attention was given to avoiding unnecessary impacts to customers. To assess the impacts of the plan recommendations, an analysis was performed of current customer's access to the proposed network. A customer is considered to be impacted if they are further than ½ mile (10-minute walk) from the nearest proposed bus stop. Current customers that fall outside of a 10-minute walk (half-mile distance) are shown in the map on the following page. Overall, the proposed plan impacts about 5 percent of customer trips.


RIDERSHIP IMPACT
Total Riders
1
5
10
50
100
Proposed Network
Half Mile Buffer
PARMA
Lake Ontario
GREECE
OGDEN
GATES
PENFIELD
BRIGHTON
CHILI
PERINTON
HENRIETTA
WHEATLAND
RUSH
MENDON
590
390
104
531
490
204
441
90

Unfunded Recommendations

The following section details recommended network enhancements for RTS should additional funds become available. These recommendations are currently unfunded and represent future potential actions and investments.

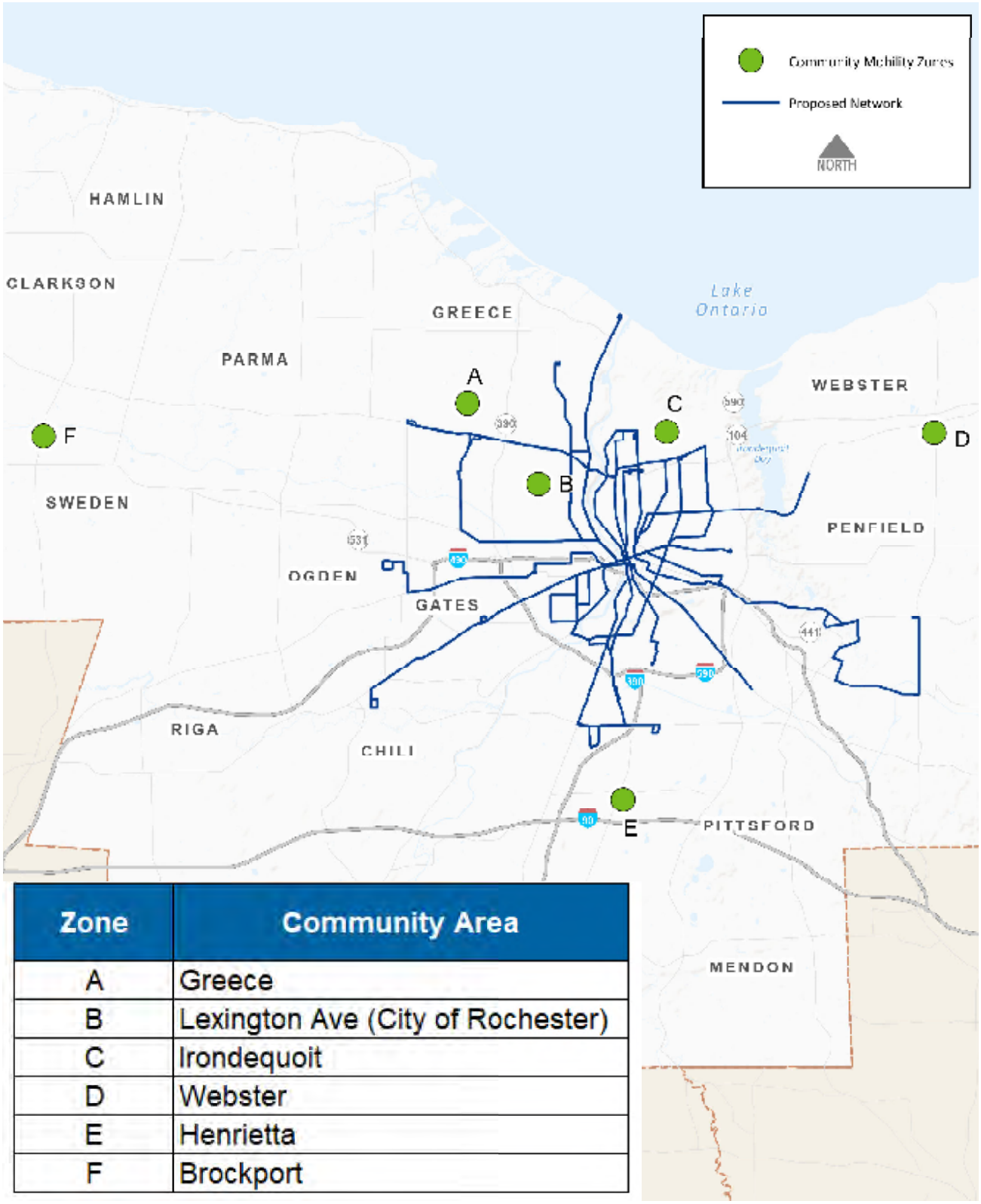
Weekend Frequency

To further enhance the customer experience, RTS should continue to invest in frequency improvements as funding becomes available. The first priority should be improvements to weekend service, such that weekend frequencies match weekday frequencies. This would decrease customer wait times and travels times on weekends, and would encourage more all-day, all-week travel by current and potential customers.

Community Mobility Zones

The Draft Network Recommendations refocused the RTS system around a new frequent network where fixed route transit is cost-effective. Areas that are not fixed route transit supportive due to low densities, disconnected development patterns, or poor road network structure and have existing RTS service are proposed as Community Mobility Zones to pilot more cost-effective mobility solutions. These may include shared-ride trips, destination shuttles, vanpools, and carsharing options and would be cost-effective solutions tailored to the needs of individual communities. These pilot projects will be developed in conjunction with the community to ensure that the proposed alternatives are appropriately marketed and thoroughly evaluated.

Community Mobility Zones



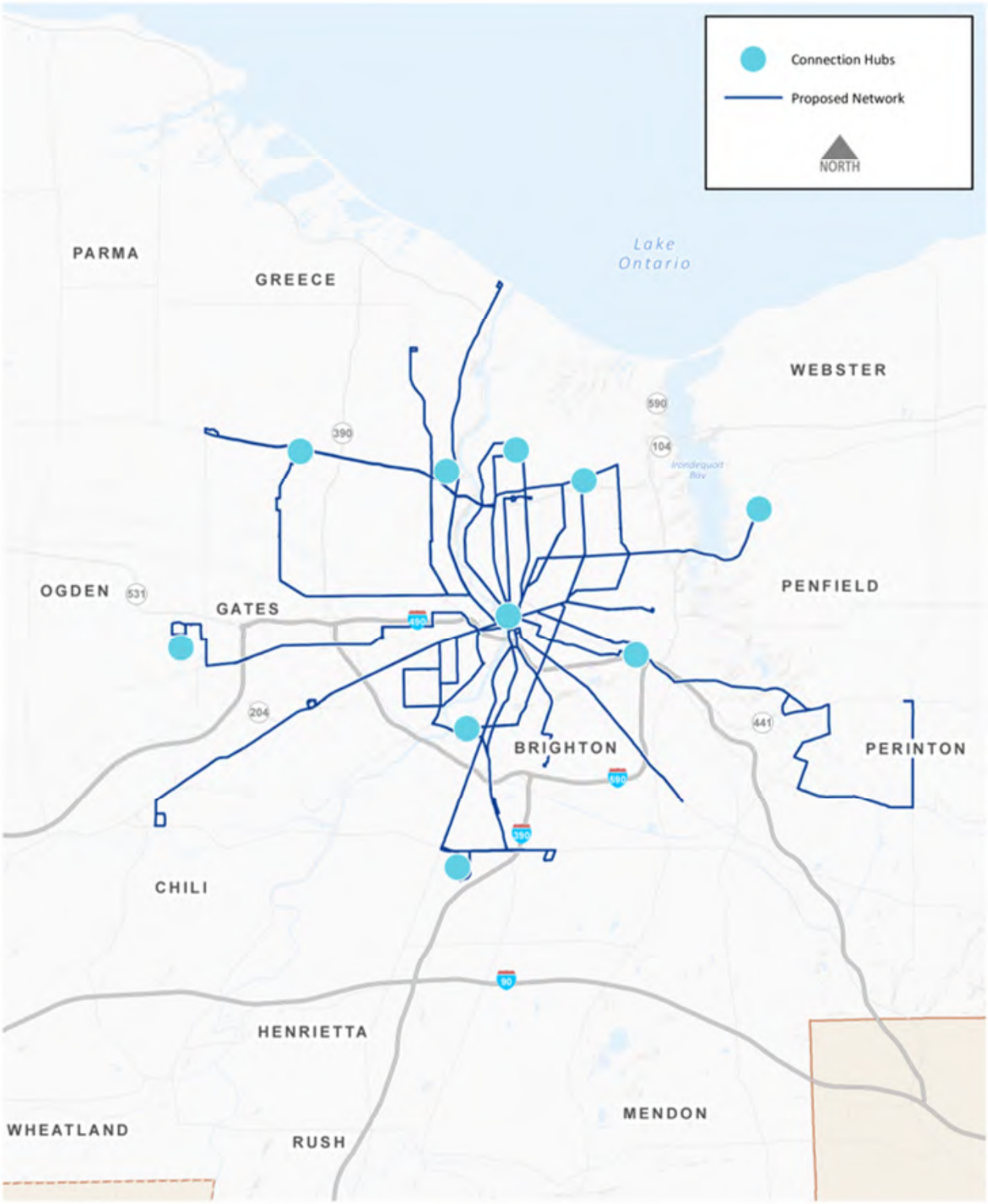
Zone	Community Area
A	Greece
B	Lexington Ave (City of Rochester)
C	Irondequoit
D	Webster
E	Henrietta
F	Brockport

Connection Hubs

One solution to changing demand patterns is the integration of multiple mobility options with the core transit network at connection hubs. This concept recognizes that regular fixed-route transit is not the optimal choice for every mobility need and that integrating multiple forms of transportation at a single location allows people to choose the mode that best meets their travel needs for making or completing a particular trip. This allows fixed-route service to serve corridors where it provides the most benefit to the largest number of customers, while leveraging alternative transportation options to offer cost effective mobility solutions for lower demand trips.

Connection hubs can be a variety of shapes and sizes, depending on the space available and the needs of specific communities and neighborhoods. Ideal locations for connection hubs are at key network convergence points that maximize connections to the core transit system. Connection hubs are also beneficial on the outlying portions of the network; places where the fixed-route network transitions to more cost-effective alternative mobility options. Here, mobility choices at the hubs provide transportation options to complete journeys beyond the RTS service area.

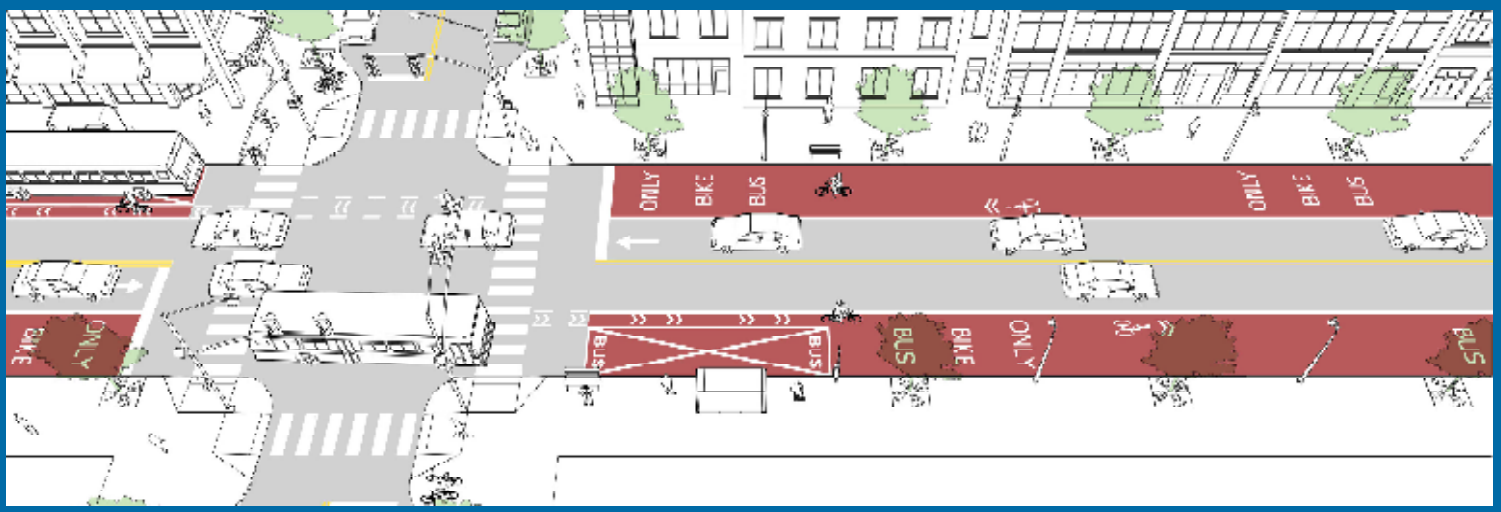
Transportation modes and facilities that can be co-located at connection hubs include, but are not limited to: RTS transit service, bike storage, Pace bike-share stations, parking for carsharing services, taxis/TNC stands, electric charging stations, and parking for private station vans and shuttles. For example, if a business is located two miles from Baytowne Plaza, instead of extending a fixed-route to serve the business, the employer can provide station vans and/or a corporate shuttle at the connection hub to help employees complete their journey to and from work.


Connection Hubs
Proposed Network
NORTH
Lake Ontario
PARMA
GREECE
WEBSTER
OGDEN
GATES
PENFIELD
BRIGHTON
PERINTON
CHILI
HENRIETTA
MENDON
WHEATLAND
RUSH

Enhanced Transit

Once RTS implements the frequent network, the next step will be to work collaboratively with Monroe County, the City of Rochester and surrounding jurisdictions to identify key corridors for transit priority investments.

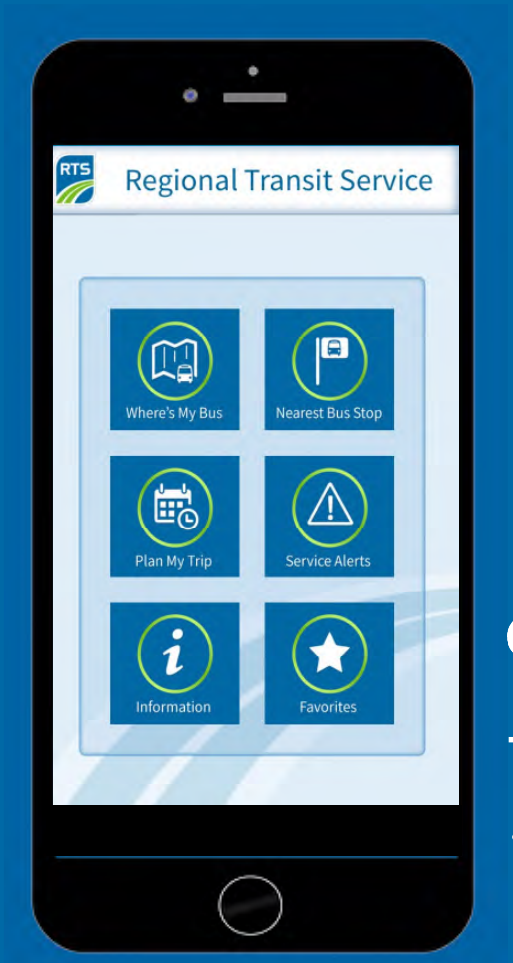
These investments can include, but are not limited to, traffic signal priority, consolidated bus stops, all-door boarding, and preboard fare payment. In order to get the most of this service investment, the key opportunity areas are high ridership markets in high density urban neighborhoods, large education and institutional uses, and major employment centers in urban land uses. More specifically, this level of investment is best suited for major corridors and corridors that travel between key destinations and connections hubs, where speed and reliability improvements would benefit the highest number of customers.



Source: National Association of City Transportation Officials

Integrated Mobility

In the coming years, the mobility environment and transit's role within that environment will continue to evolve in the Rochester region. While public transit has an advantage in certain markets, it is not competitive in every market. Transit's growing competition has become largely technology-centric, with one-stop mobility shopping and on-demand services becoming the norm. For RTS to remain financially sustainable it must embrace new ways of integrating multiple modes into the system. This will ensure these new mobility options complement, rather than compete with, the transit network.



The Role of Technology in Integrated Mobility

Technology is revolutionizing transportation and ushering in a new age of mobility choices. With widespread adoption of personal smart phones, people can choose the mobility option that makes the most sense for any trip at any time. Real-time transit tracker information allows customers to take different transit routes if their regular bus is delayed. In another instance, if traffic happens to be light and they need to pick up groceries on the way home, they can find the nearest carsharing vehicle. If it's late and nightly transit service is reduced, they can quickly request Uber or Lyft service.

Contrary to what one might expect, these advances have the potential to increase transit usage rather than reduce it. According to the American Public Transportation Association, the more people use shared transportation options, the less likely they are to own a car and the more likely they are to use public transit. By aligning itself with other shared mobility options through technology (e.g., trip planners, traveler information, fare payment), transit has the potential to be the backbone of new integrated mobility networks nationwide.

INTEGRATED MOBILITY

1. Fixed-Route Transit
2. TNCs
3. Microtransit
4. Ridesharing
5. Carsharing
6. Bikesharing

MOBILITY MANAGER

RTS' Role as a Public Mobility Manager

As alternative mobility options continue to emerge and evolve, transit agencies must rethink their service model. New private initiatives and options from the shared economy have recently entered the market, changing customer expectations regarding mobility. With public transit now just one of many mobility options, attracting and retaining customers will require a paradigm shift for most transit agencies – from transit-provider to mobility-provider.

RTS understands the need to embrace these opportunities as it rethinks public mobility in Monroe County. An integrated network approach will provide maximum value for consumers and member jurisdictions and will also ensure RTS stays a competitive mobility choice. To evaluate the best approach moving forward, RTS will be starting a mobility management program study in the coming months. The study will detail the resources needed to implement and maintain a mobility management program, as well as the most effective way to structure the program. This is a key next step for RTS as more and more mobility options enter the region.