

**BETTER TRANSIT**     **BETTER RHODE ISLAND**

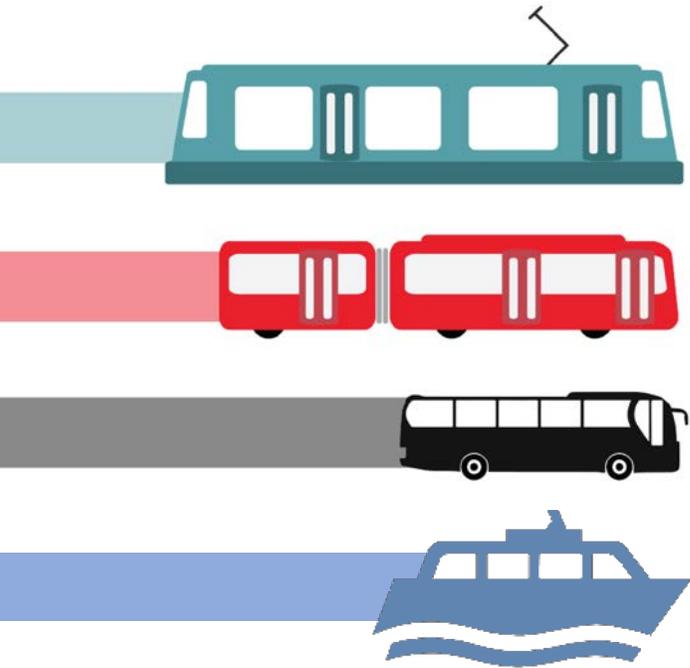
**A TRANSIT MASTER PLAN FOR  
RHODE ISLAND**

Transportation Advisory Committee

April 25, 2019

# INTRODUCTION

# SCOPE OVERVIEW



What is Rhode Island's transit vision?

What investments will enable the vision to be achieved?

How can existing funding be maximized?

What are new funding opportunities?

What policies are needed to ensure success?

# BETTER TRANSIT BETTER RHODE ISLAND

## GOALS

Make transit attractive and compelling

Connect people to life's activities

Grow the economy and improve quality of life

Ensure financial and environmental sustainability

# EXISTING SERVICES

# A STRONG MULTIMODAL FOUNDATION



53 RIPTA Routes  
7 RIPTA Flex Zones



3 MBTA Commuter Rail Stations  
(+ 1 in construction)  
3 Amtrak Intercity Rail Stations



1 Seasonal Public Ferry Route



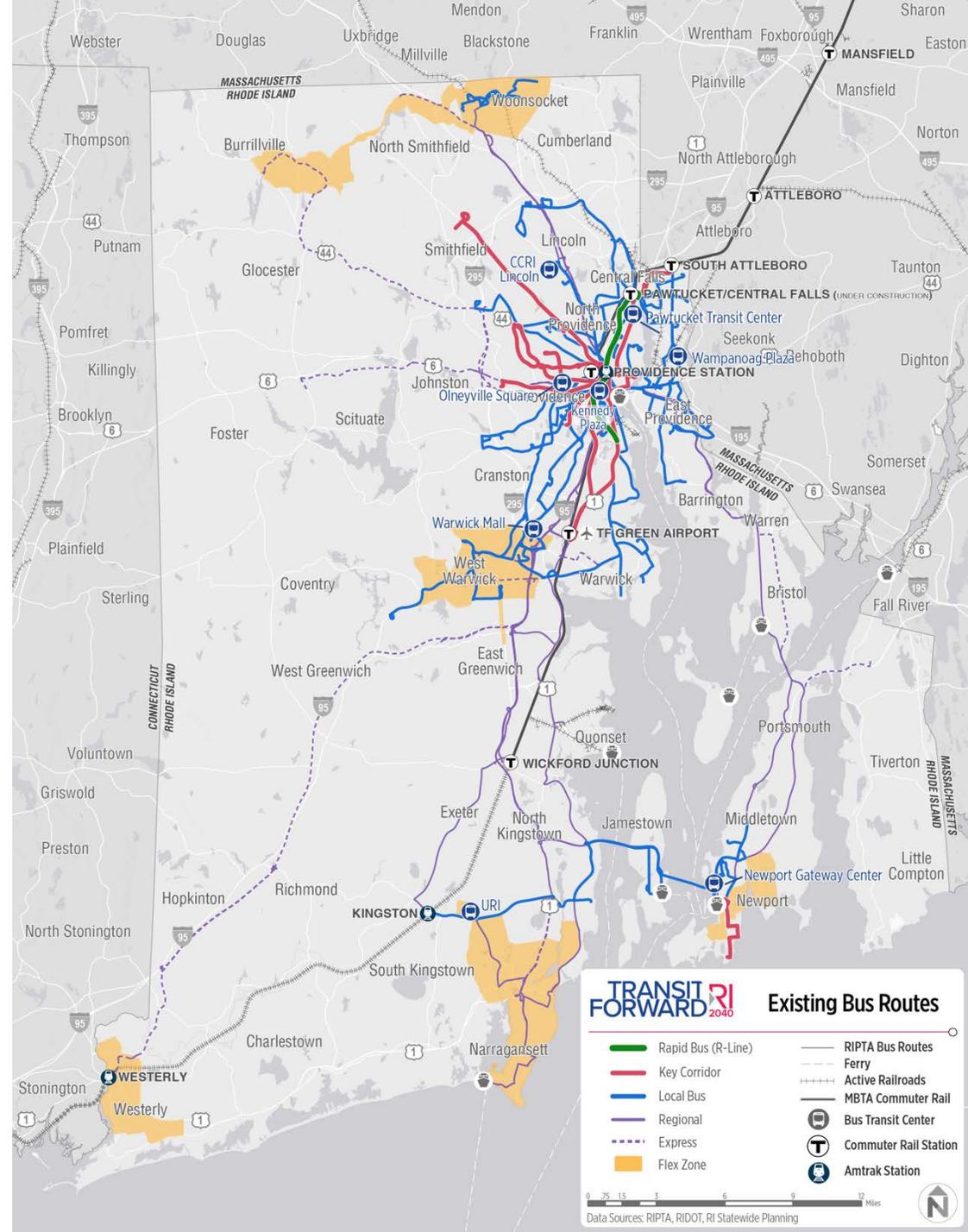
ADA Paratransit



3,100+ public park-ride spaces



Intercity Bus Connections



# OVER 18 MILLION RIDERS PER YEAR

RIPTA	16.2 million
MBTA Rail	1.1 million
Amtrak	950,000
RIDOT Ferry	43,000

## Top 10 Routes

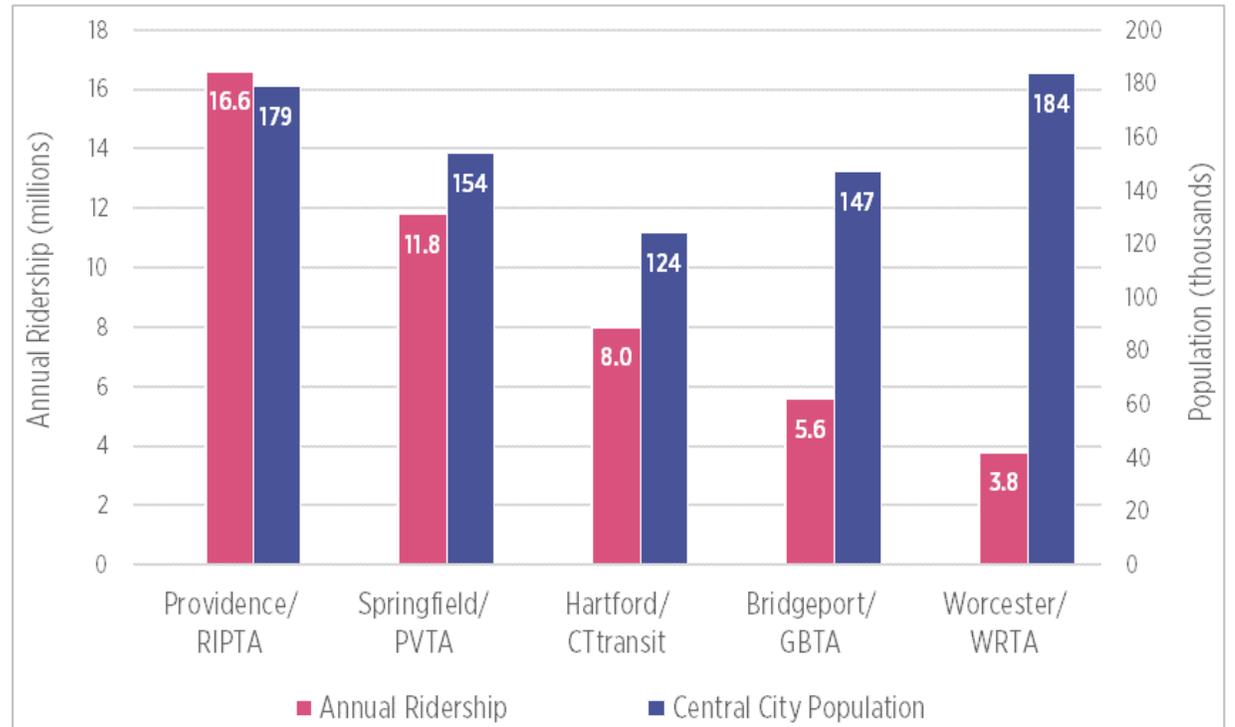
Average Weekday  
Ridership

- R-Line Broad St - N Main St **8,182**
- 1 Hope - Eddy **3,964**
- 20 Elmwood - T.F. Green Airport **2,705**
- 92 RI College - Federal Hill - East Side **2,247**
- 60 Providence - Newport **2,223**
- 31 Cranston Street **2,150**
- 56 Chalkstone Avenue **1,996**
- MBTA Providence Line **1,844**
- 50 Douglas Avenue **1,678**
- 54 Lincoln - Woonsocket **1,674**

# HIGHER BUS RIDERSHIP THAN IN OTHER CITIES

- RIPTA’s ridership much higher than in New England peer cities
- RIPTA also serves more riders than transit systems in many larger cities, including Kansas City, Nashville, and Indianapolis

*Annual Bus Ridership and City Size*



# VERY HIGH RAIL RIDERSHIP

MBTA's Providence Line has highest ridership in Boston's commuter rail system

Providence Station: 3,813 weekday passenger trips

Highest ridership MBTA station outside of Boston

11<sup>th</sup> busiest Amtrak station (out of 532 in U.S.) in 2017

TF Green/Warwick = 450 weekday passenger trips

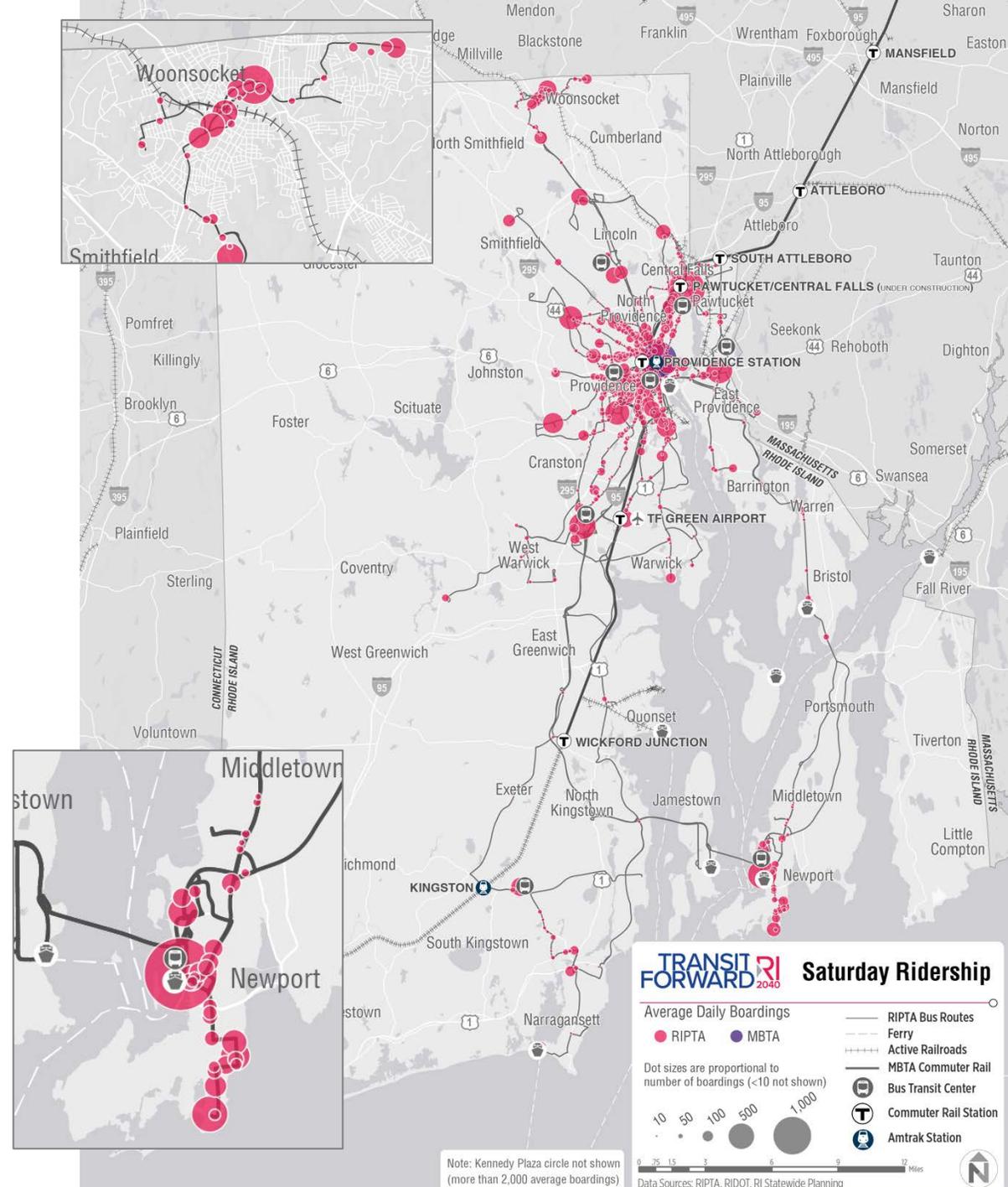
Wickford Junction = 464 weekday passenger trips



# MANY HIGH RIDERSHIP LOCATIONS

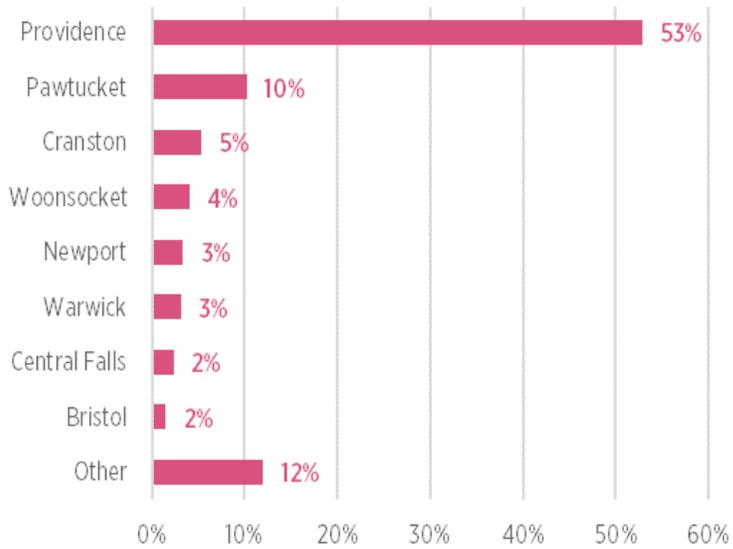
Ridership is strongest in the urban core  
 Over 1,000 transit riders board each day at:

- Kennedy Plaza
- Providence Station
- Pawtucket Transit Center
- Broad Street @ Lockwood (R-Line)
- Goff/Exchange in Pawtucket (R-Line)



# RIDERS: RIPTA

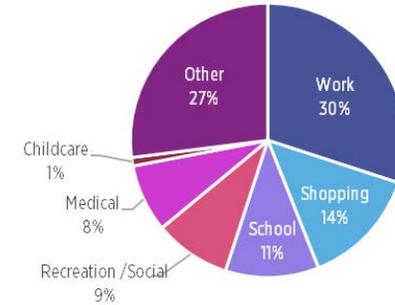
**53%** of RIPTA riders live in Providence, and another **10%** live in Pawtucket.



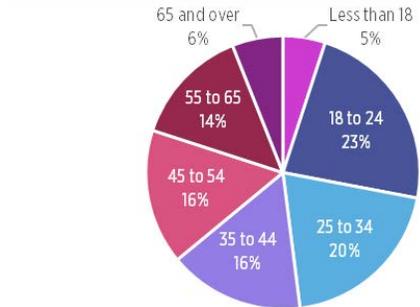
**81%** of RIPTA riders do not have access to a vehicle.



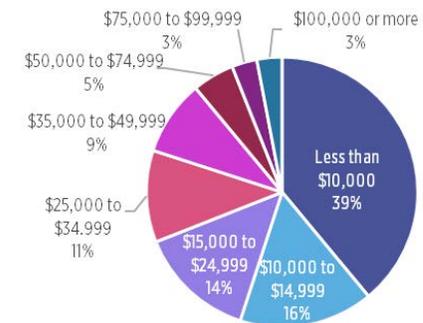
Riders use RIPTA services for various trip purposes - **not just commuting** to work.



RIPTA riders are relatively evenly distributed across age groups. The largest share of riders (**23%**) are between 18 and 24.



**39%** of RIPTA riders have a household income less than \$10,000 a year.



# RIDERS: COMMUTER RAIL

Where do Rhode Island passengers alight?

- 50%** South Station
- 32%** Back Bay Station
- 8%** Ruggles Station
- 6%** Providence Station
- 4%** Other

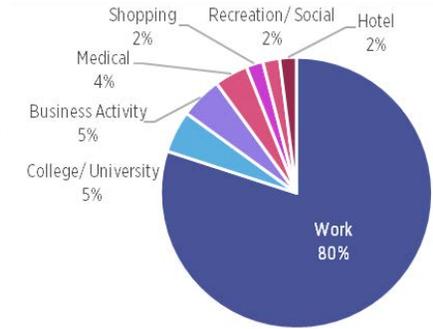
Top 3 Destination Cities

- 77%** Boston, MA
- 8%** Cambridge, MA
- 6%** Providence, RI

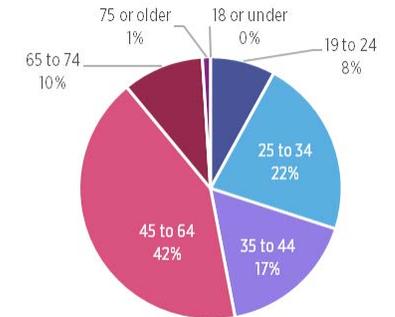
**94%** of commuter rail riders have at least one vehicle in their household; nearly three-quarters have two or more vehicles.



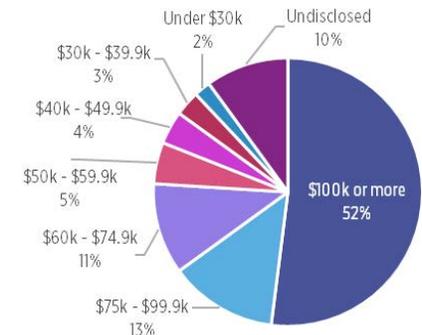
Riders use rail service almost exclusively for **work or work-related trips**.



**42%** of commuter rail riders are between the ages of 45 and 64. Nearly **one quarter** are between 25 and 34.



**52%** of riders have an annual household income over \$100,000.



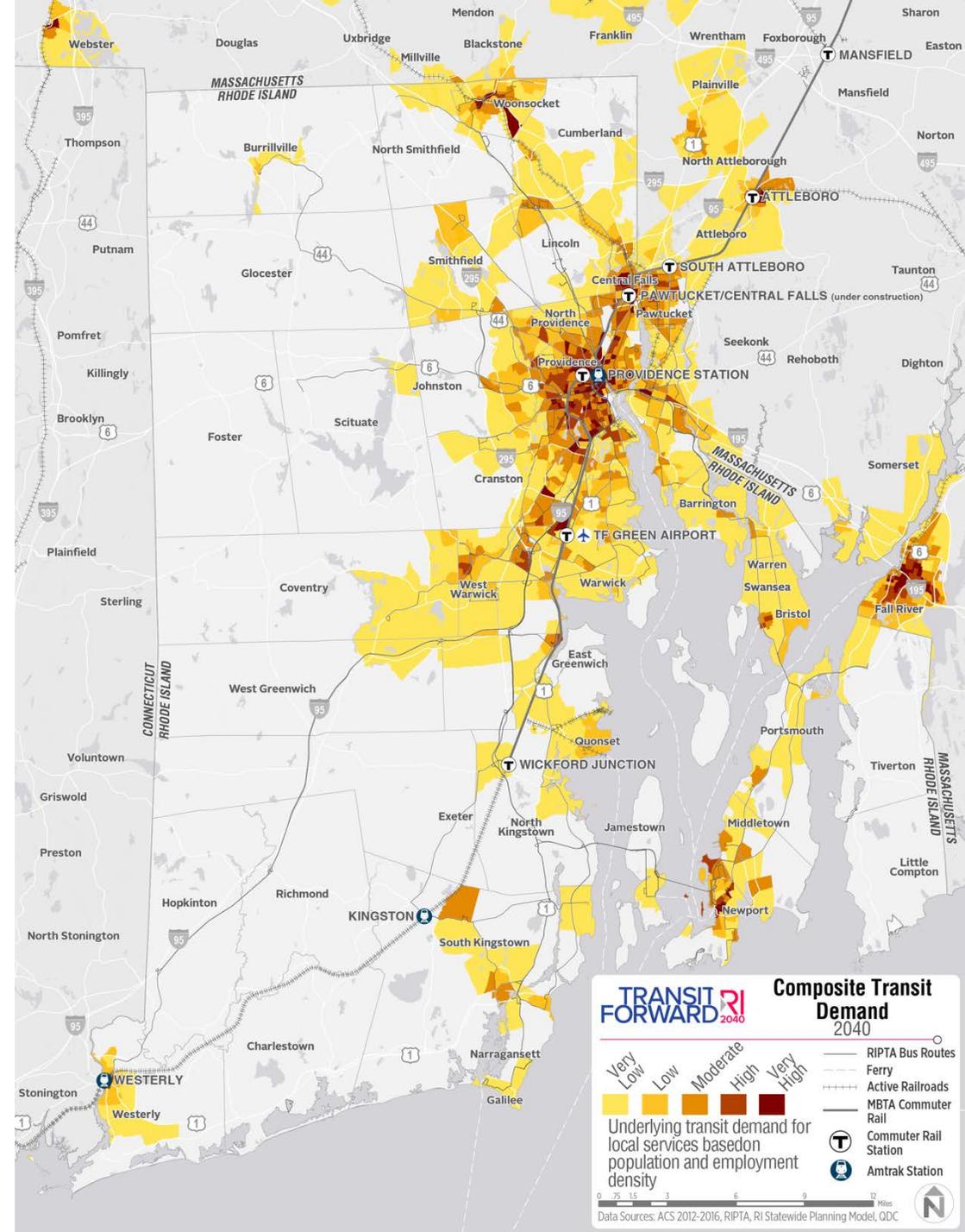
# DEMAND FOR TRANSIT

# DEMAND FOR LOCAL SERVICE VARIES GREATLY ACROSS RI

From very high in Metro Area to extremely low in rural areas

Some growth, but similar patterns of demand over next 20 years

Large variations in demand require different solutions across the state



# SERVICES NEED TO BE MATCHED WITH DEMAND

One size does not fit all

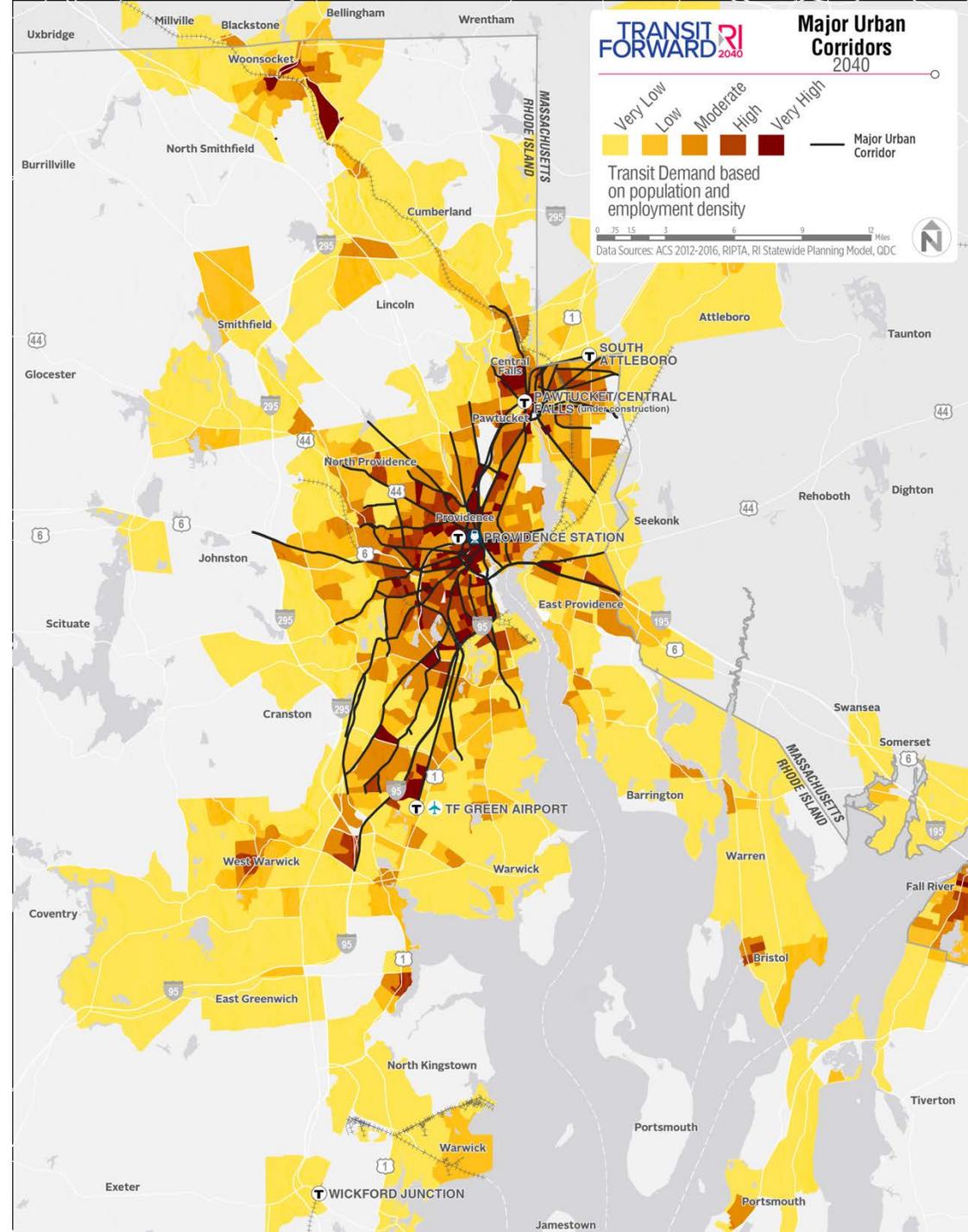
There are many ways to provide transit service

To be effective, services must be matched to markets

LAND USE			TRANSIT	
Land Use Type	Residents per Acre	Jobs per Acre	Appropriate Types of Transit	Frequency of Service
 Downtowns & High Density Corridors	>45	>25	 Light Rail  BRT  Rapid Bus  Local Bus	 10 mins or better
 Urban Mixed-Use	30-45	15-25	 BRT  Rapid Bus  Local Bus	 10-15 minutes
 Neighborhood & Suburban Mixed-Use	15-30	10-15	 Local Bus	 15-30 minutes
 Mixed Neighborhoods	10-15	5-10	 Local Bus  Micro-transit	 30-60 minutes
 Low Density	2-10	2-5	 Micro-transit  Rideshare  Volunteer Driver Pgm	 60 mins or less or On Demand
 Rural	<2	<2	 Rideshare  Volunteer Driver Pgm	 On Demand

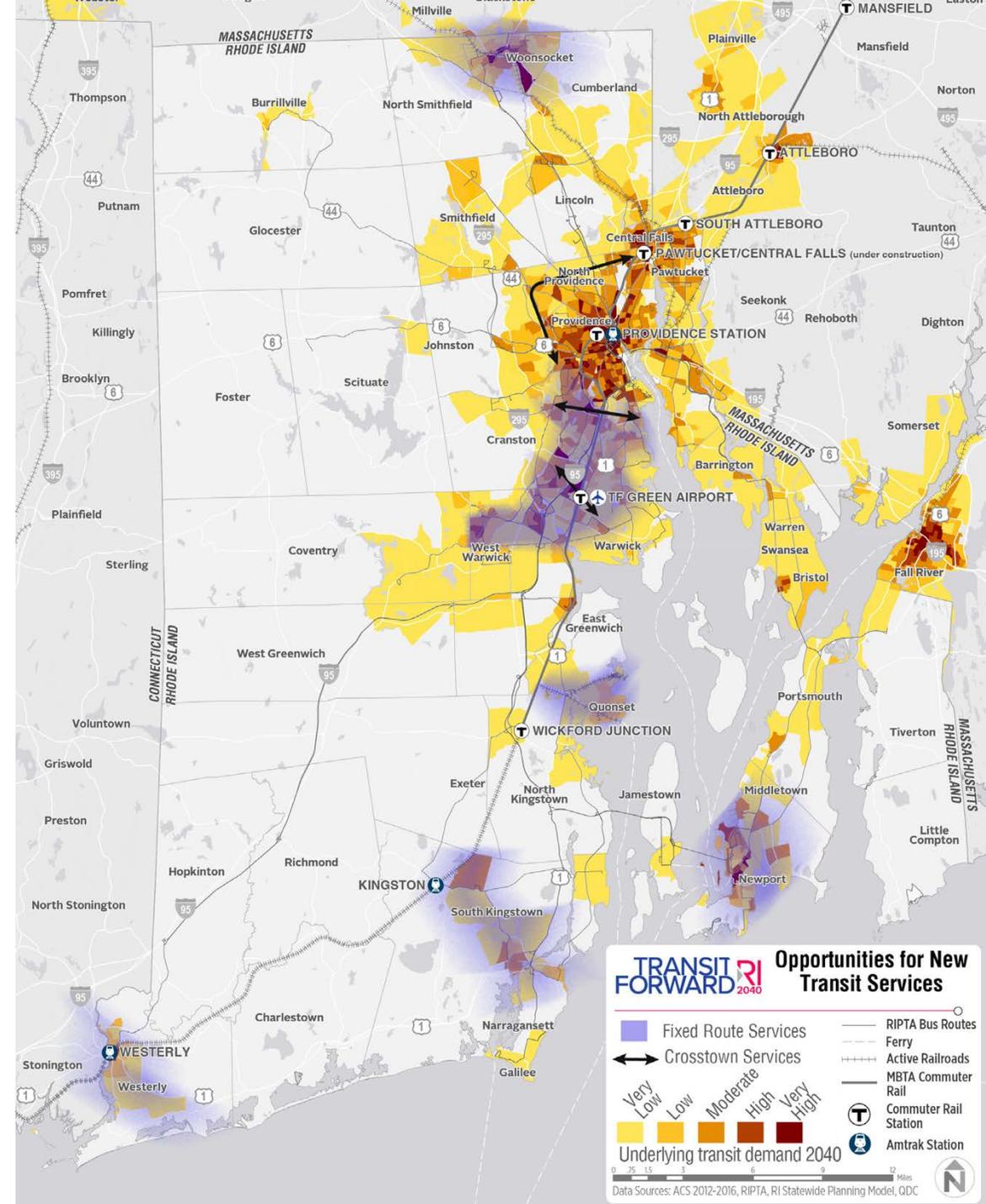
# THERE IS DEMAND FOR MUCH BETTER SERVICE WITHIN THE URBAN CORE

- Within Providence
- Within Pawtucket
- Pawtucket-Providence
- Central Falls-Pawtucket
- Smithfield-North Providence-Providence
- North Providence-Providence
- Johnston-Providence
- Cranston-Providence
- Warwick-Providence
- East Providence-Providence



# ALSO DEMAND FOR BETTER SERVICES IN MANY OUTER AREAS

- Connections between Quonset and regional routes
- Between, Narraganset, Wakefield, and Kingston/URI
- Within Newport and Middletown
- Within Woonsocket
- Within Westerly



# IN LOW DENSITY AREAS, SPECIALIZED SERVICES ARE MOST APPROPRIATE

Transportation Management Associations (TMAs)

Microtransit

Ridesharing

Volunteer Drivers

Partnerships with employers



# DEMAND FOR COMMUTER SERVICE IS MUCH HIGHER TO BOSTON THAN TO PROVIDENCE

Primarily for two reasons:



Transit Travel Time Compared to Auto Travel Time



Parking Costs at Destination

Transit faster to Boston  
Transit slower to Providence

Parking costs are very high in Boston  
Parking costs are low/free in Providence

# CONSEQUENTLY, COMMUTER RAIL CARRIES VERY HIGH SHARES OF BOSTON COMMUTERS BUT LOW SHARES OF PROVIDENCE COMMUTERS

	To/From Providence	To/From Boston
Wickford Junction	7%	76%
TF Green	2%	48%
Providence	--	47%

# BIG IDEAS

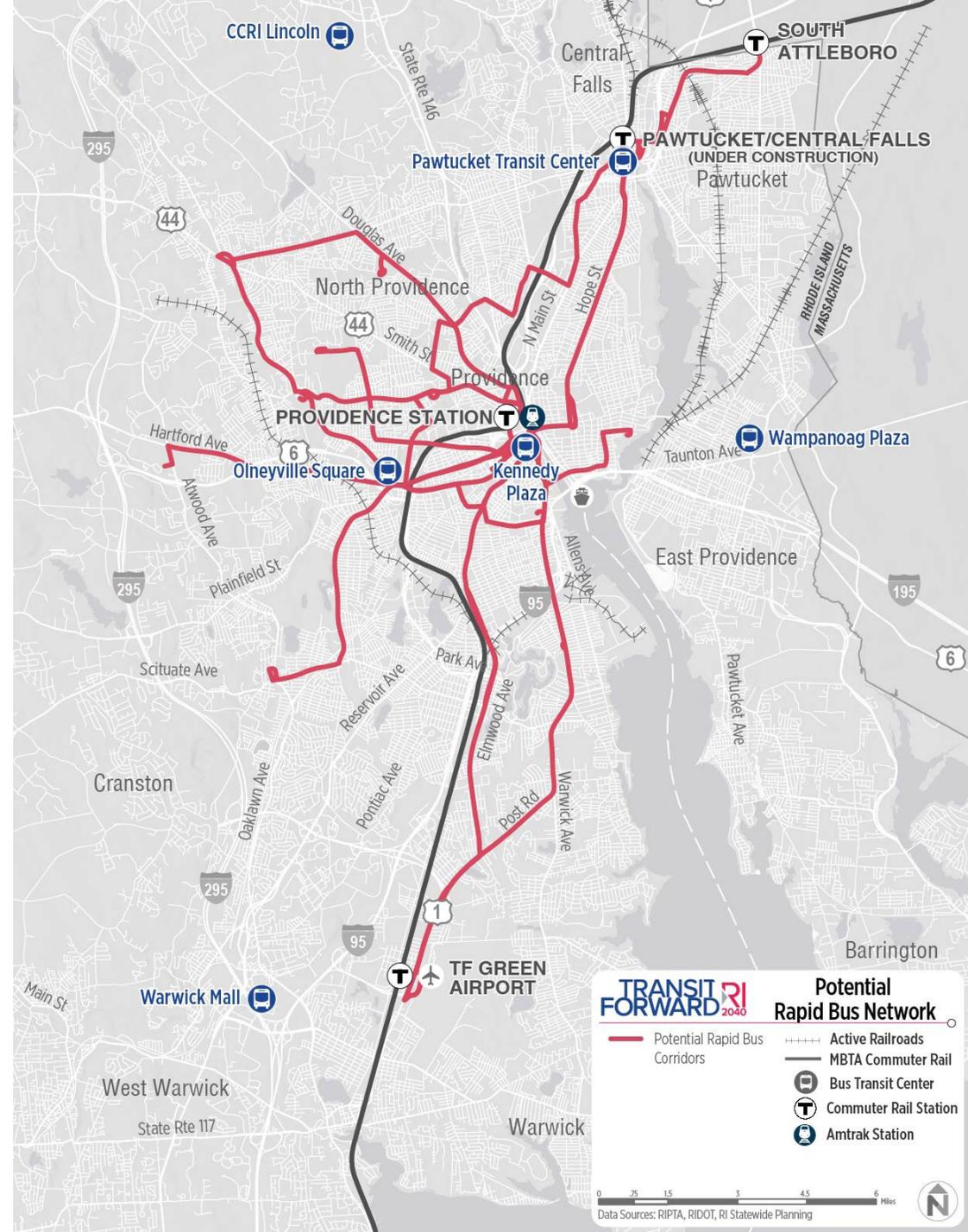
# FREQUENT TRANSIT NETWORK

Frequent transit – every 15 minutes or better for long hours – to make transit much more convenient

Few services currently provide frequent service all day

R-Line is best, at 10 mins. for most of day

Most major metro area corridors could support frequent service



**TRANSIT FORWARD RI 2040**

**Potential Rapid Bus Network**

- Potential Rapid Bus Corridors
- Active Railroads
- MBTA Commuter Rail
- Bus Transit Center
- ⊙ Commuter Rail Station
- ⊙ Amtrak Station

0 0.75 1.5 3 4.5 6 Miles

Data Sources: RIPTA, RIDOT, RI Statewide Planning

# BRT AND RAPID BUS

Upgrades to “regular” local bus service to improve service quality

## REGULAR BUS

### TYPICAL FEATURES

- No special branding
- Frequent stops
- Wide range of stop facilities – from very basic to elaborate
- Wide range of service frequencies – from very infrequent to very frequent
- Wide range of service spans – from early morning to late night to only a few trips



RIPTA local bus service

## RAPID BUS

### TYPICAL FEATURES

- Special branding
- Simple service design
- Limited stops
- Enhanced stops/stations
- Frequent service (at least every 15 minutes)
- Service from early morning to late night
- Real-time passenger information

### OTHER COMMON FEATURES

- Unique vehicles, including high-capacity buses
- Queue jump lanes
- Transit signal priority
- Off-board fare collection



Los Angeles Metro Rapid service

## BUS RAPID TRANSIT (BRT)

### TYPICAL FEATURES

- Special branding
- Simple service design
- Limited stops
- High quality stations
- High-capacity buses
- Exclusive bus lanes
- Transit signal priority
- Very frequent service (at least every 10 minutes)
- Service from early morning to late night
- Real-time passenger information

### OTHER COMMON FEATURES

- Unique vehicles
- Level platform boarding
- Off-board fare collection



Cleveland Healthline BRT service

# FASTER AND MORE FREQUENT RAIL SERVICE

## Faster service

- Use of electric locomotives/EMUs
- High level platforms at all stations
- Express trains

## More frequent service

## More service to TF Green Airport

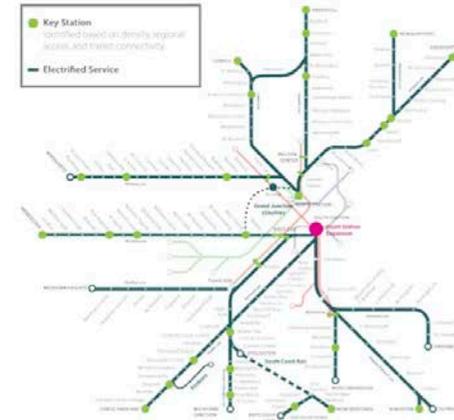
## MBTA/Amtrak cross-honored fares

## ALTERNATIVE 5

### About Rail Vision

Rail Vision identifies cost-effective strategies to transform the Commuter Rail into a system that better supports improved mobility and economic competitiveness in Greater Boston. The Rail Vision team is evaluating the costs and benefits of 7 possible service alternatives.

### Alternative 5: Regional Rail to Key Stations (Electric)



Regional Rail is high-frequency service to **key stations**.\* This alternative uses self-powered electric trains known as electric multiple units (EMUs) that operate more like our current subway trains. Service to non-key stations would be equal to or better than current levels.

\***Key stations** are in gateway cities, dense areas outside central Boston, and/or locations that provide regional access and transit connectivity.

### Benefits

- **Faster, more frequent service:** EMUs accelerate and decelerate faster than diesel locomotives, so travel times between stations are shorter, and trains can run closer together
- **Reduced vehicle commutes:** People won't need to travel as far for access to fast, frequent, direct service to downtown Boston
- **Reduced emissions:** The current system relies on diesel locomotives, electrification reduces overall emissions

### Trade-offs

- Service will not change at stations that aren't key stations, and those key stations may become more crowded
- Significant capital investment required for electrification
- System electrification requires removing trees alongside routes
- Electric trains may not be as reliable in inclement weather

# REGIONAL RAPID BUS SERVICE

## Potential Routes

Woonsocket – Providence

Newport – Providence

Via East Bay

Via West Bay

Narragansett – Providence

## Features

More comfortable buses

Transit priority and bus on shoulder service

Attractive and comfortable stations

Off-board fare collection

And more...



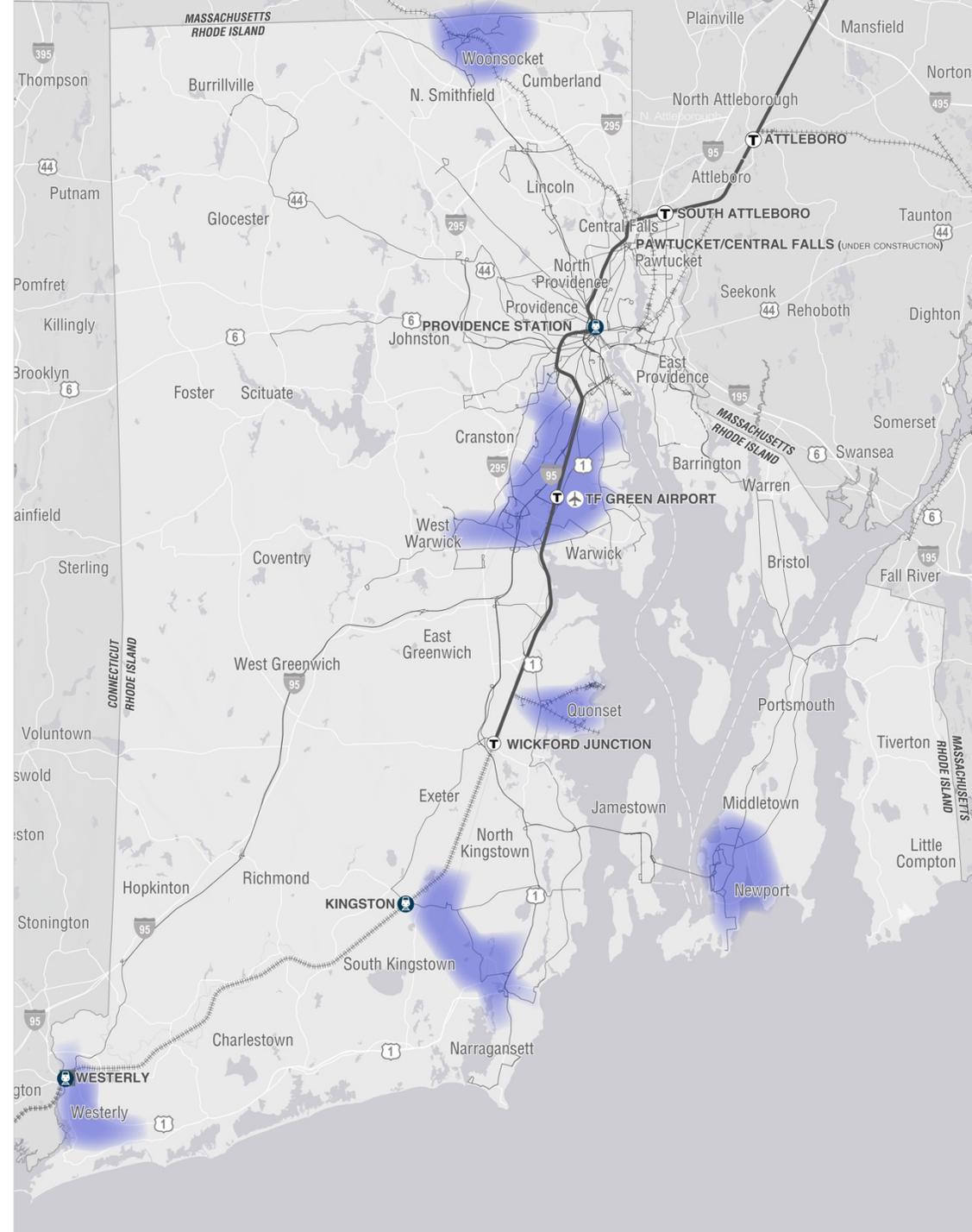
# BETTER LOCAL BUS SERVICE

## More frequent service for longer hours

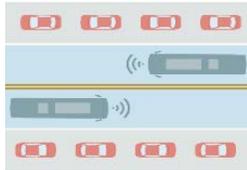
- Upgrades to meet RIPTA's service standards
- Earlier service to serve earlier work start times
- Later service to serve later work end times and social activities

## New services in underserved areas

- Better crosstown service in metro area
- Woonsocket
- Warwick
- Quonset
- South Kingstown
- Westerly
- Newport



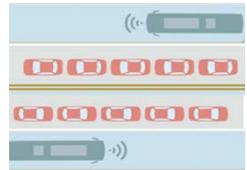
# INFRASTRUCTURE AND TECHNOLOGY IMPROVEMENTS TO MAKE BUS SERVICE FASTER



Full-Time Bus Lanes



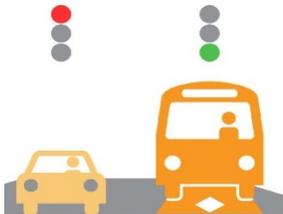
Off-board Fare Payment



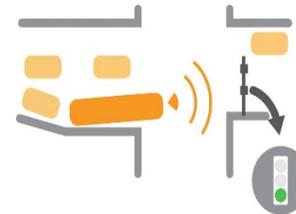
Part-Time Bus Lanes



Level Boarding



Queue Jump Lanes



Transit Signal Priority

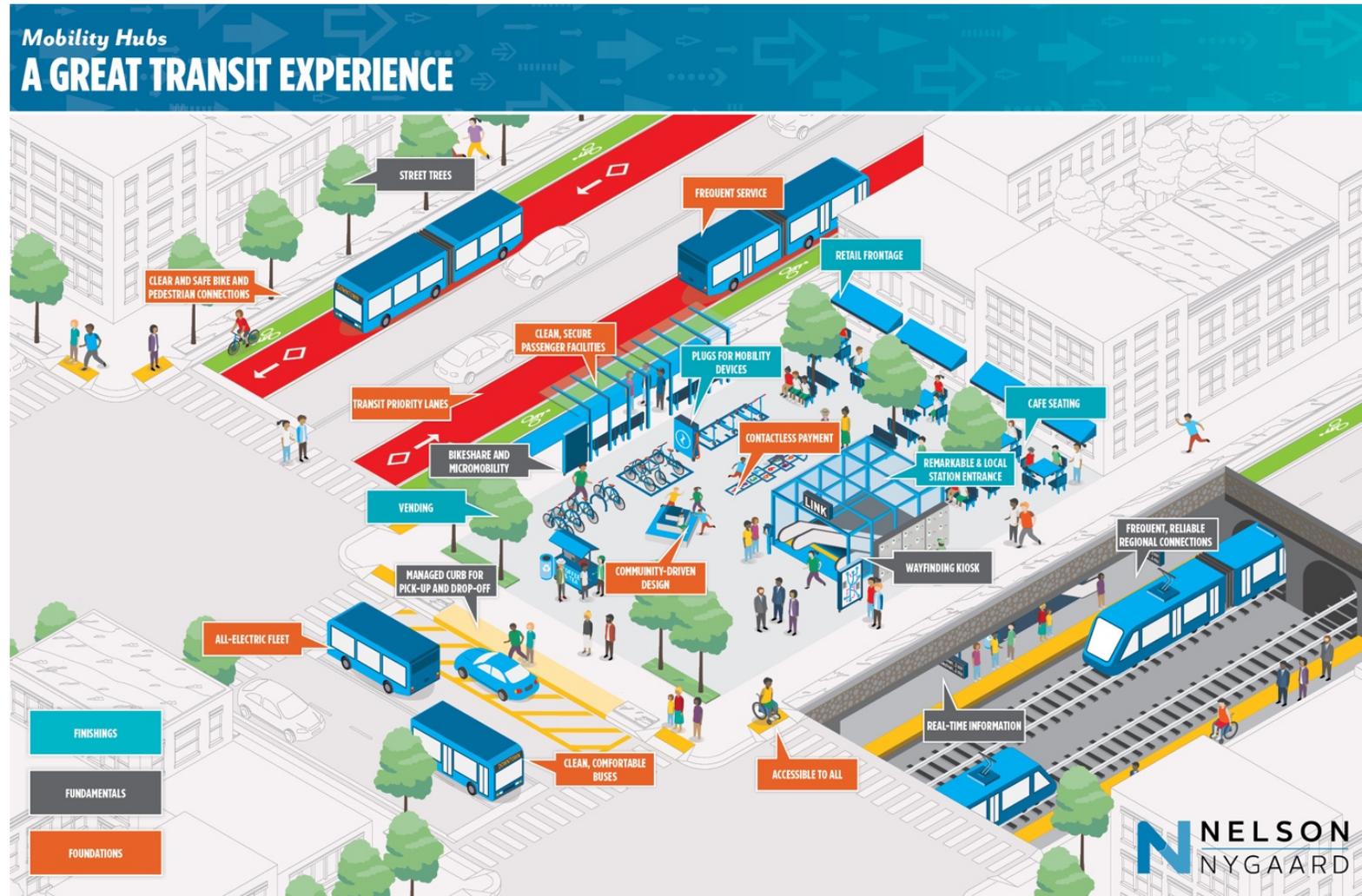
# NEIGHBORHOOD MOBILITY HUBS

Safe, convenient and attractive places of connectivity to catch the bus and make connections

Located in neighborhood centers

Easily accessible in many ways

Transit service plus other connections



# BETTER FIRST MILE/LAST MILE CONNECTIONS TO MAKE IT EASIER TO GET TO AND FROM TRANSIT

Pedestrian

Bicycle/Bikeshare

Rideshare/Rideshare partnerships

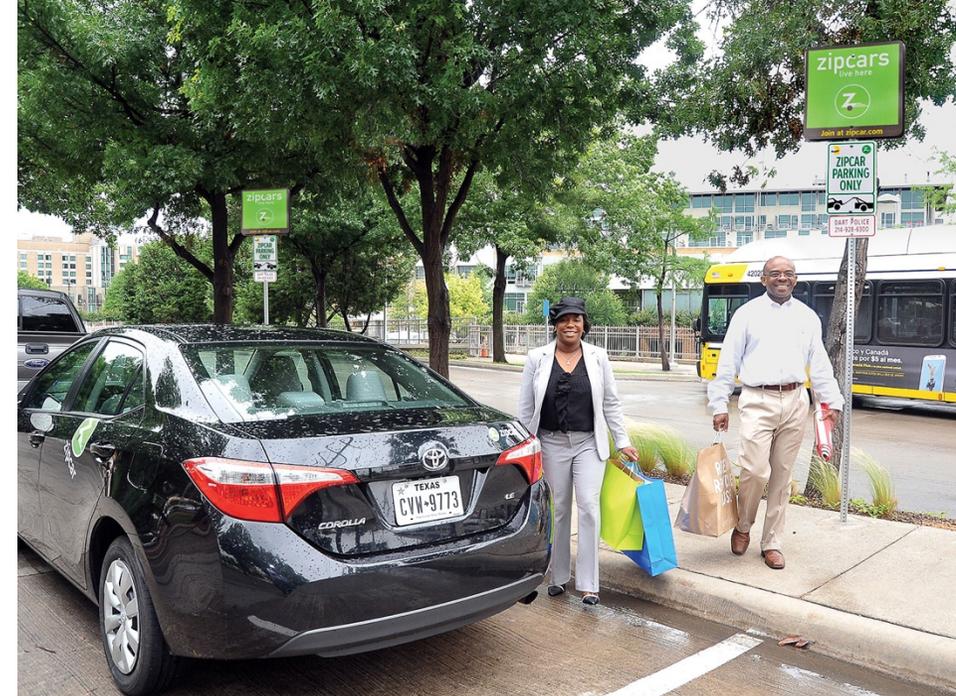
Scooter-share

Carshare

Park and ride

Private shuttles

Microtransit



# NEXT STEPS

# NEXT STEPS

Continue to develop strategies to improve service

Evaluate strategies

How to implement

Likely effectiveness

Develop and evaluate scenarios

Packages of strategies

Identify funding opportunities

Develop recommended plan

## Transit Strategies

### RAPID BUS



Over the past decade, much attention has been placed on the development of Bus Rapid Transit (BRT) systems. These systems provide rail-like service, but with buses, and are typically less expensive to construct than rail service. However, while costs are lower than rail, BRT systems can still be expensive. Implementation times can also be long.

In order to provide many of the benefits of BRT service, many transit systems—including Los Angeles Metro, the San Francisco Bay Area’s AC Transit, and Kansas City’s KCATA—have begun operating “Rapid Bus” services.<sup>1</sup> This type of service includes the elements of BRT that can be implemented on existing roadways at a lower cost and in a much shorter timeframe. Rapid Bus can also be a first step toward full-featured BRT.

#### Rapid Bus Benefits

While BRT represents a middle ground between light rail service and regular bus service, Rapid Bus represents a middle ground between BRT and regular bus. The service benefits are significant compared to regular bus service:

- **Service Quality:** Rapid Bus is faster, more convenient, more comfortable, and more attractive than regular bus service.
- **Higher Ridership:** Because it is more attractive, Rapid Bus can significantly increase ridership over regular bus service. LA Metro’s first two Metro Rapid lines increased ridership by 49%, AC

**Rapid Bus in Rhode Island: The R Line**  
 RIPTA implemented its first Rapid Bus line, the R-Line, in 2014 by running more frequent service for longer hours on N. Main Street and Broad Street, building more widely spaced stops with enhanced amenities, adding transit signal priority, and creating a unique brand. The R Line reduced travel times by 10 minutes (8%) and is the highest ridership transit service in Rhode Island.



<sup>1</sup> Especially in the United States, many premium bus services, including most of those described in this document, are marketed as “BRT” even though they lack important BRT elements such as dedicated bus lanes. This document uses the term “Rapid Bus” for premium bus services that provide meaningfully better service than regular bus services but fall short of full-featured BRT.

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