



Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Advisory Committee Meeting #3

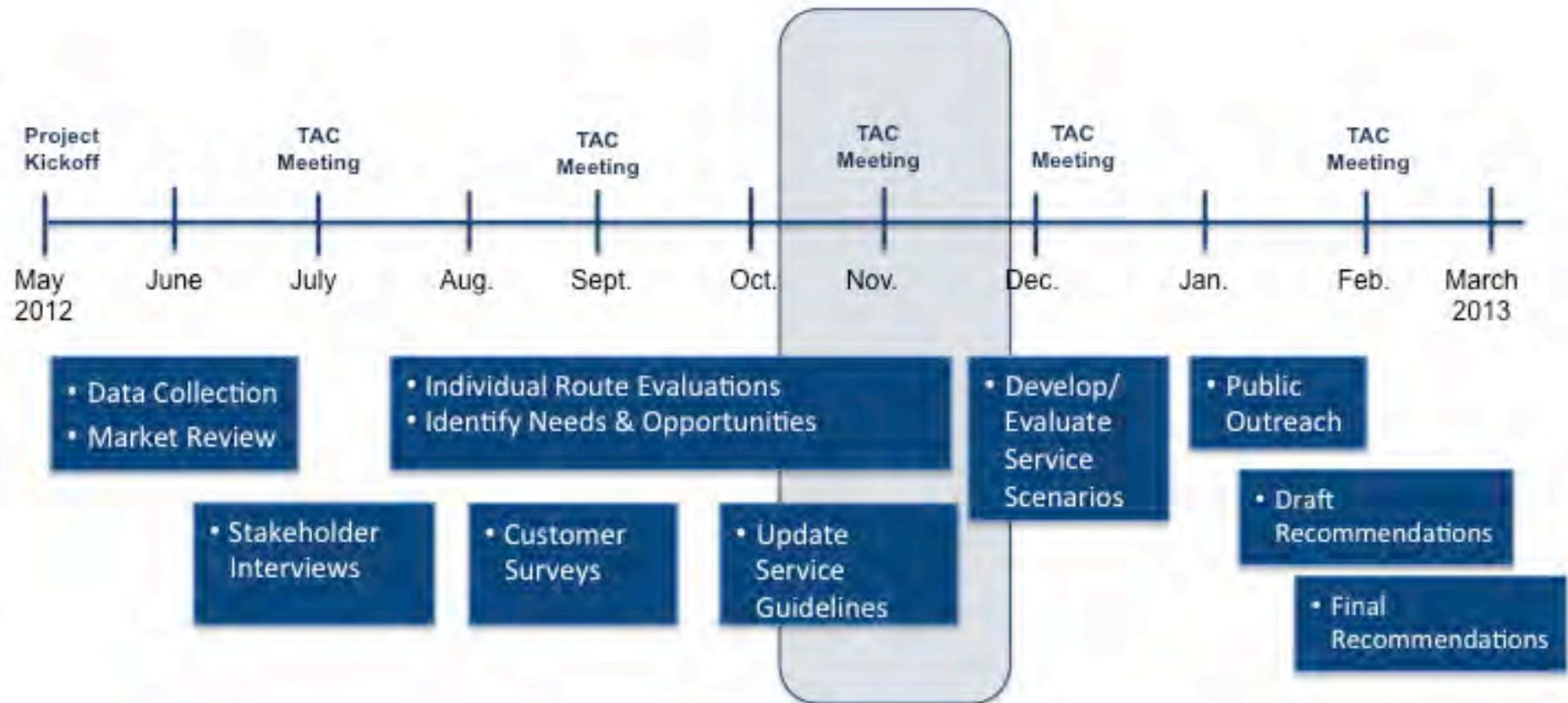
November 8, 2012

Today's Agenda

1. Fixed Route, Flex and Non-Rider Survey Results
2. Proposed Update to RIPTA Service Guidelines
3. Route Evaluations
4. Emerging Themes
5. Balancing Demand vs. Requests for Coverage Based Service
6. Advisory Committee Discussion/Input
7. Next Meeting and Next Steps



COA Timeline





Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Survey Results

November 8, 2012

Passenger Surveys

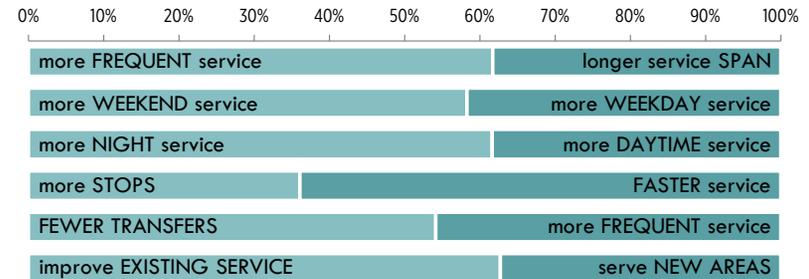
- On-board passenger surveys completed in August/September:
 - All 58 Routes/8 Flex Zones surveyed
 - 9,911 surveys completed
 - Represents nearly 30% of RIPTA's estimated daily riders
- Non-rider surveys still being collected via web:
 - About 178 non-riders have responded to the on-line survey



Rider Survey Report

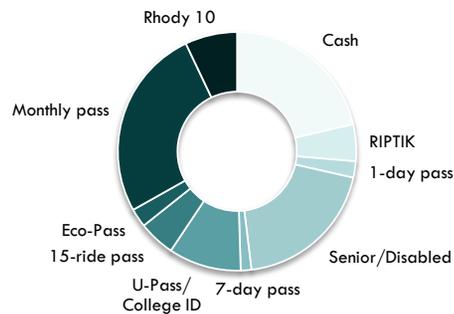
Number of valid fixed-route surveys:	9,843
Percent taken in Spanish:	3.5
Percent completed online:	6.7
Percent of riders with access to a car:	15.8
Average weekday ridership:	65,546
Avg. weekday ridership per vehicle revenue hour:	33.2

Rider Preferences

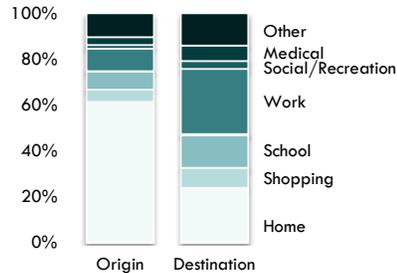


Trip Characteristics

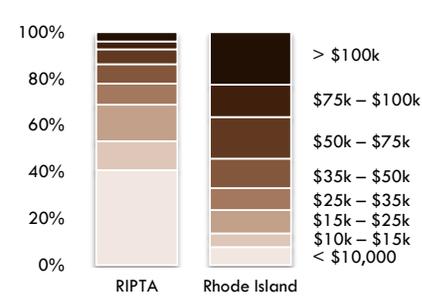
Fare Type



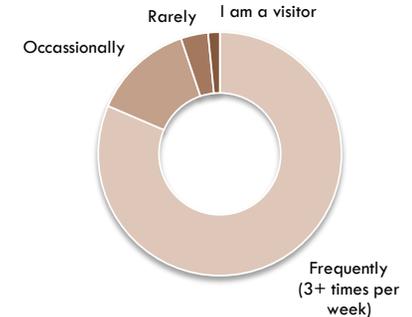
Origin & Destination



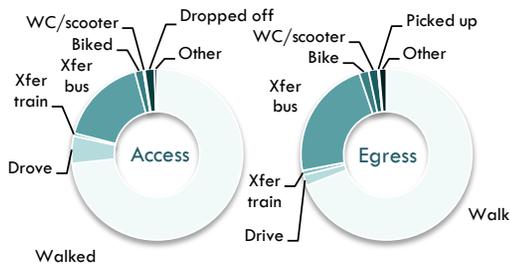
Household Income



Rider Frequency



Mode of Access & Egress

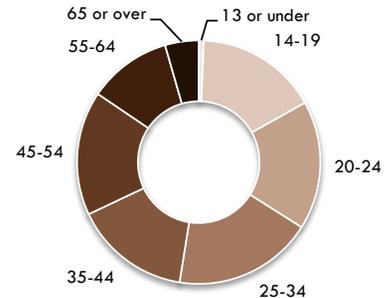


Transfer Activity

Not applicable system-wide.

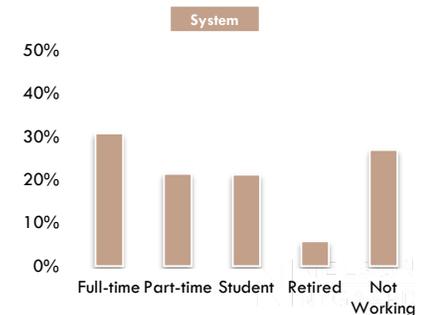
Rider Demographics

Age



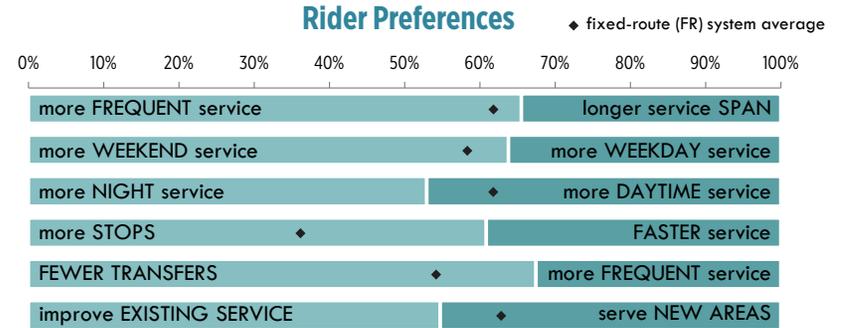
Employment Status

note: respondents could check more than one answer



Rider Survey Report

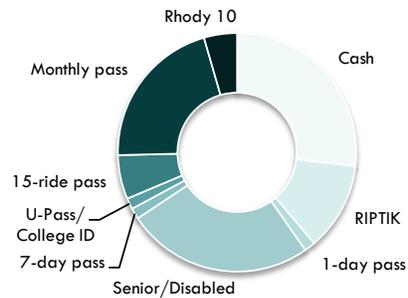
	Flex	RIPTA
Number of valid surveys:	68	9,843
Percent taken in Spanish:	0.0	3.5
Percent completed online:	0.0	6.7
Percent of riders with access to a car:	7.6	15.8
Average weekday ridership:	337	65,546
Weekday ridership per revenue hour:	-	33.2



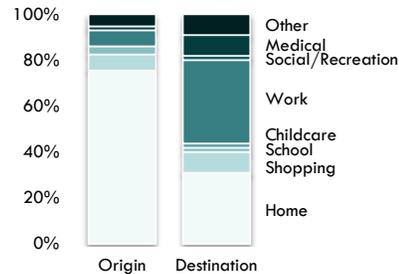
Trip Characteristics

Rider Demographics

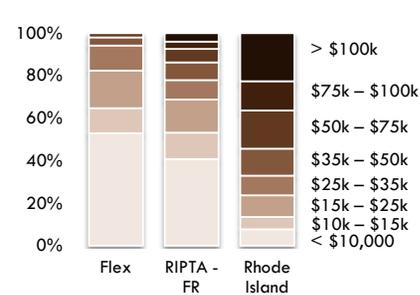
Fare Type



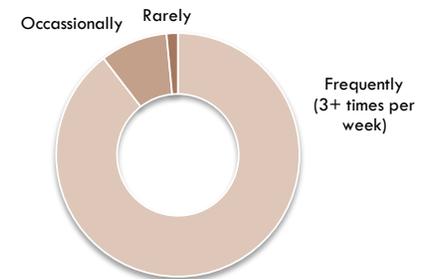
Origin & Destination



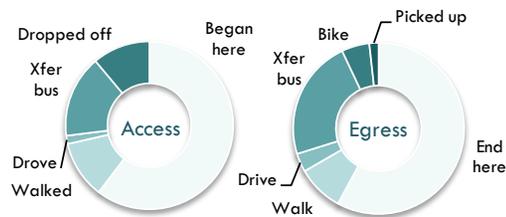
Household Income



Rider Frequency



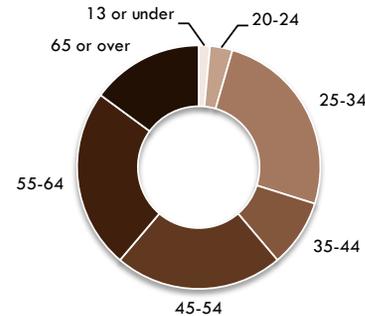
Mode of Access & Egress



Transfer Activity (Top 10)

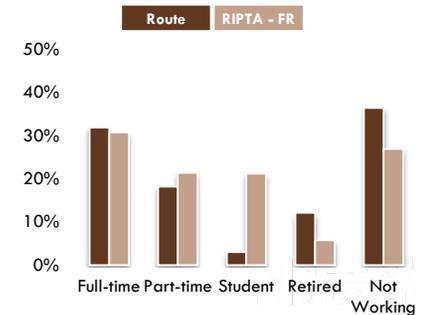
Route	% of Sample
66	11.8
9	5.9
30	2.9
33	1.5
60	1.5
64	1.5
87	1.5

Age



Employment Status

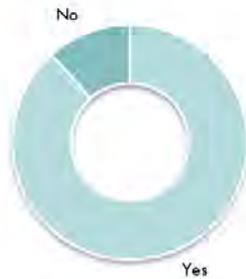
note: respondents could check more than one answer



Non-rider Survey Report

Trip Characteristics

Regular Car Usage



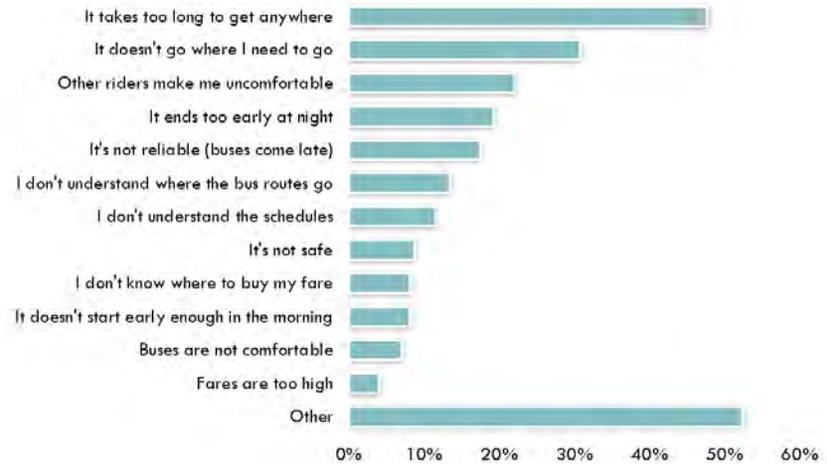
Daily Parking Costs



178 surveys were completed online in English.

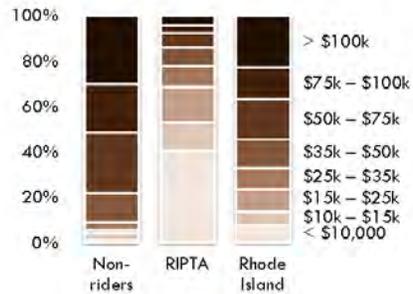
Reasons for Not Using Transit

note: respondents could check more than one answer

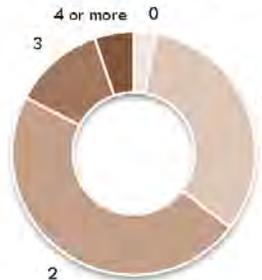


Demographics

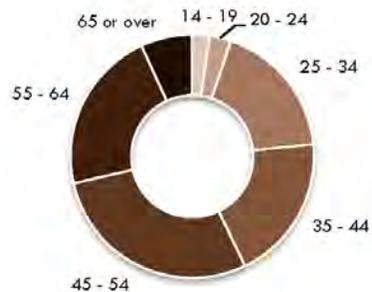
Household Income



Car Ownership

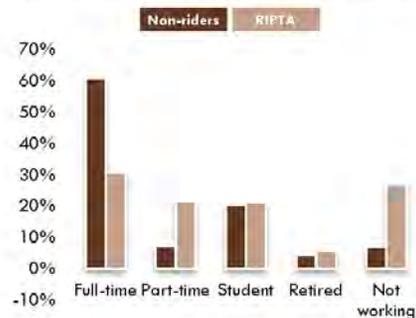


Age

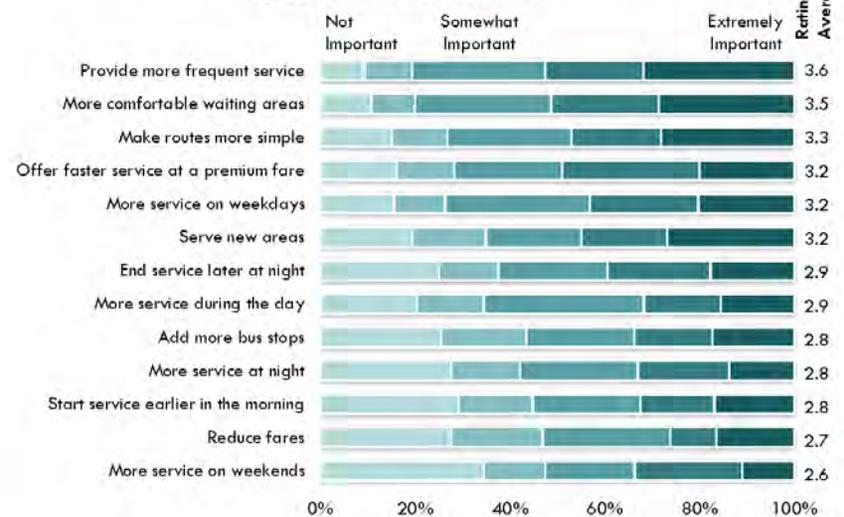


Employment Status

note: respondents answered for all members of their household



Non-rider Preferences





Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Updated Service Guidelines

November 8, 2012

What are Service Guidelines?

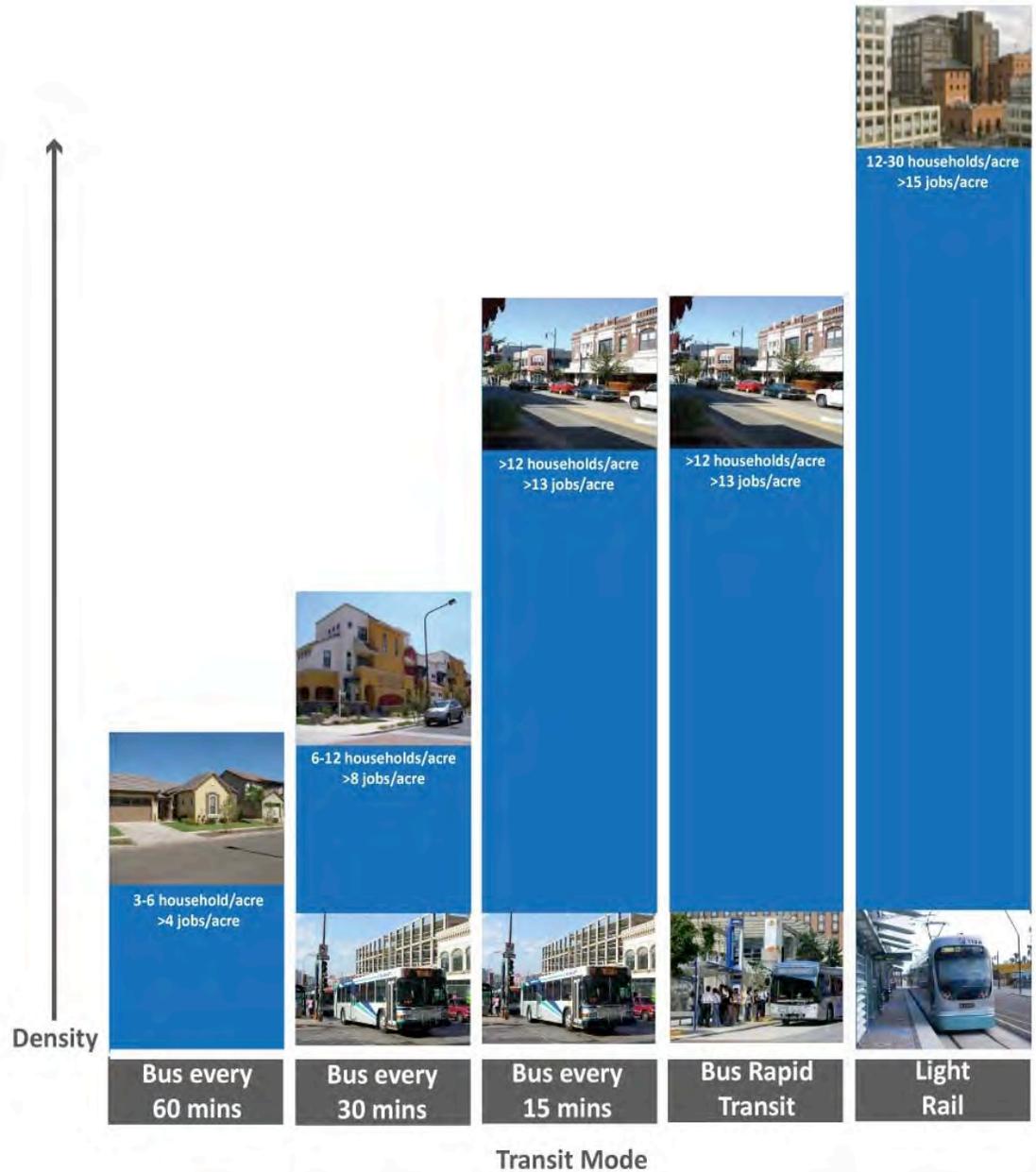
Recap from September meeting:

- ***Service Guidelines are quantifiable measures that are used to:***
 - Set service objectives
 - Determine appropriate service levels
 - Establish minimum levels of service performance
 - Measure service performance
- ***Service guidelines provide a mechanism to:***
 - Deliver service in a consistent and equitable manner
 - Evaluate its service in an objective and consistent manner



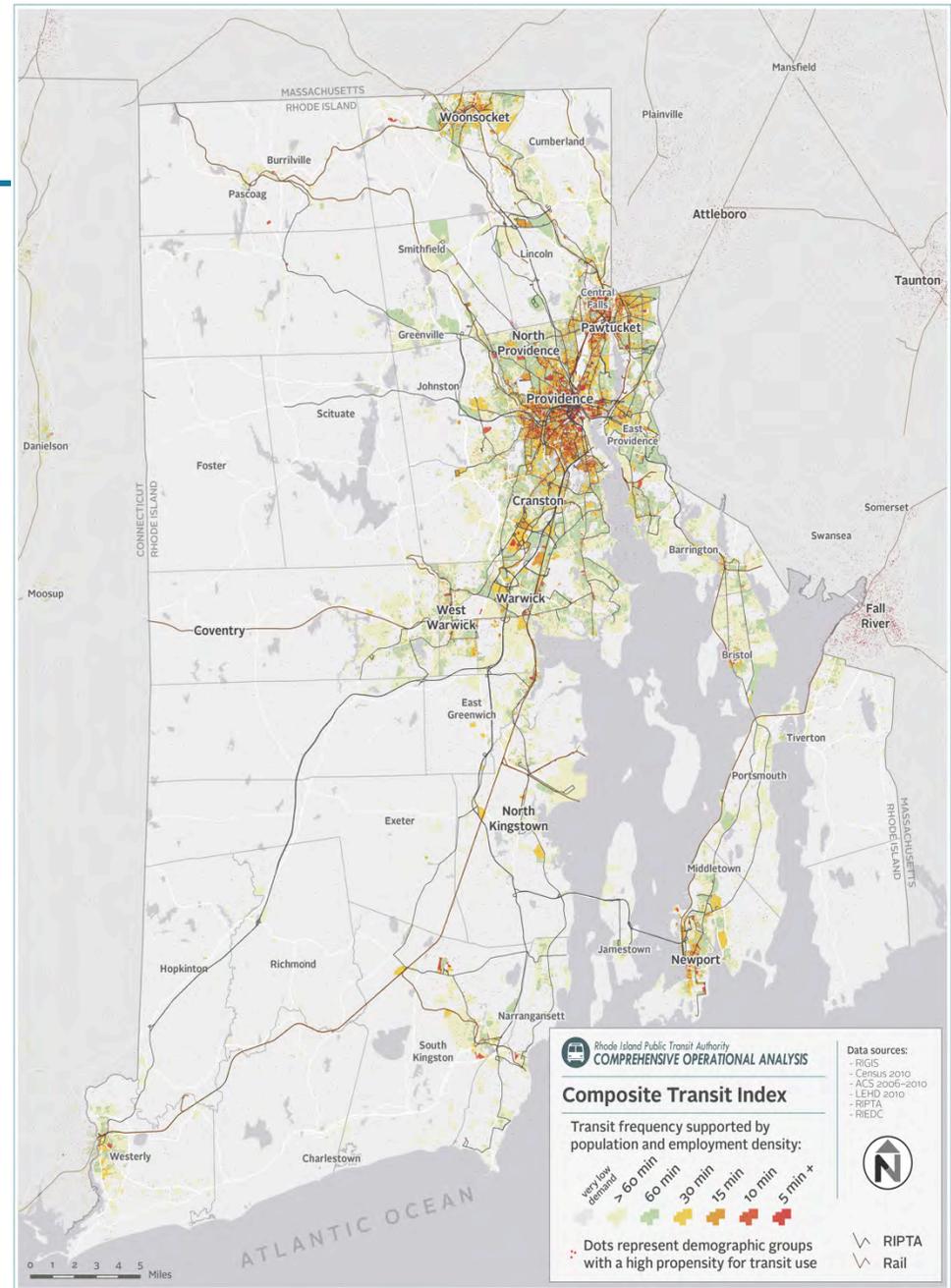
Service Coverage

- Population and employment densities can help guide the type of service best suited for an area.
- RIPTA can also use these guidelines to determine where new services might be warranted.

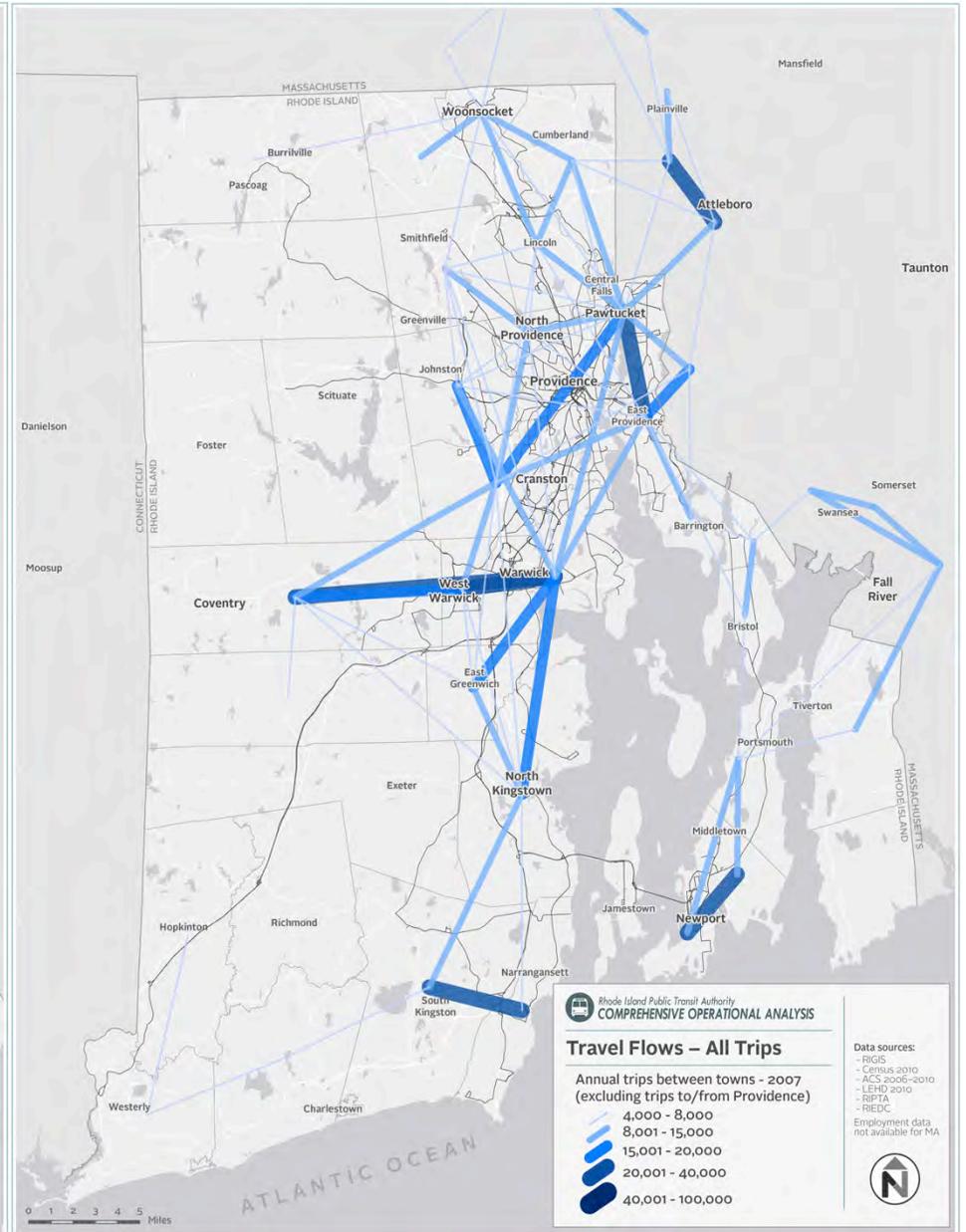
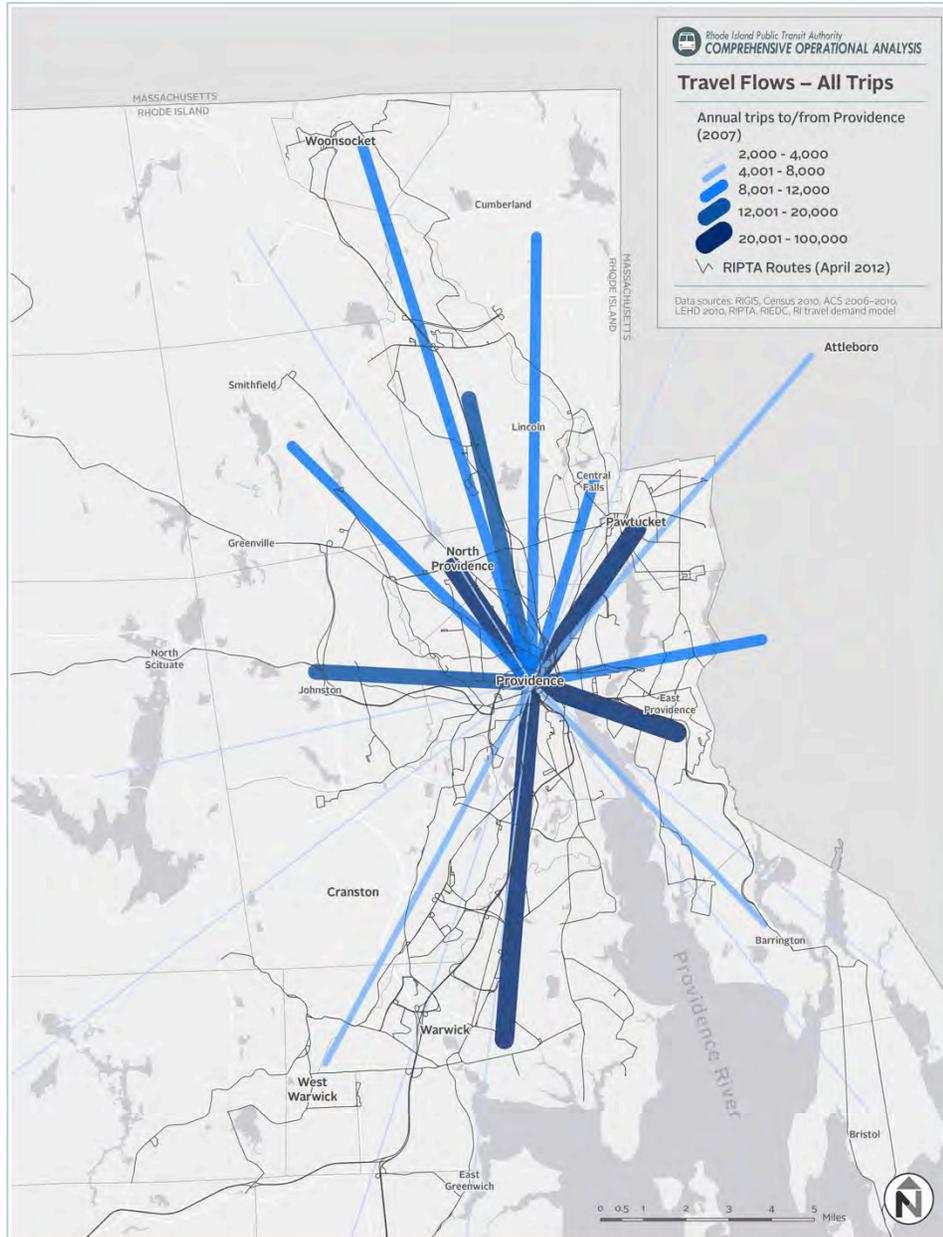


Service Coverage

- Transit resources are limited and should be prioritized to serve higher density areas, or area with high levels of travel demand
- A market review completed this summer identified areas with a high propensity for transit



Transit should also bring people where they want to go



Family of Services

Type of Route	Description
Rapid Bus	Frequent, limited stop service using distinct vehicles and intelligent technology to reduce travel time
Key Corridor	Highest ridership or most productive routes offering direct service on major roads.
Urban Arterial	Operated in densely developed areas, serving downtown Providence or Pawtucket.
Crosstown/ Suburban/Non-Urban	Operate outside the urban core, but may serve a hub via a more indirect or “crosstown” route.
Regional	Provide service between regional centers: Providence, Woonsocket, Newport, URI.
Express/ Commuter	Designed primarily to serve commuters
Flex	Service to low density areas with demonstrated need



Minimum Service Frequency

	RAPID BUS	KEY CORRIDOR	URBAN RADIAL	SUBURBAN/ CROSSTOWN	REGIONAL	EXPRESS/ COMMUTER	FLEX
Weekdays							
Early AM	30	30	60	60	60	—	n/a
AM Peak	10	15	30	60	60	3 trips	n/a
Midday	10	20	60	60	60	—	n/a
PM Peak	10	15	30	60	60	3 trips	n/a
Night	30	30	60	60	120	—	n/a
Saturdays							
All Day	15	30	60	60	—	—	n/a
Sundays							
All Day	15	30	60	60	—	—	n/a



Minimum Span of Service

	RAPID BUS	KEY CORRIDOR	URBAN RADIAL	/SUBURBAN/ CROSSTOWN	REGIONAL	EXPRESS/ COMMUTER	FLEX
Weekdays							
Begin	6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM	—	8:30 AM
End	12:00 AM	12:00 AM	7:00 PM	7:00 PM	9:00 PM	—	4:30 PM
Saturdays							
Begin	6:00 AM	7:00 AM	<i>Service may be provided, if warranted, but is not required.</i>				
End	11:00 PM	11:00 PM	<i>Service may be provided, if warranted, but is not required.</i>				
Sundays							
Begin	7:00 AM	7:00 AM	<i>Service may be provided, if warranted, but is not required.</i>				
End	11:00 PM	9:00 PM	<i>Service may be provided, if warranted, but is not required.</i>				



Seating Capacity & Vehicle Loading Maximums

SEATING CAPACITY OF RIPTA VEHICLES						
	RAPID BUS	40' BUS	35' BUS	35' TROLLEY	FLEX	FUTURE ARTICULATED BUS
100% of Seating Capacity	36	36	28	28	16	55
120% of Seating Capacity	43	43	34	34	n/a	66

- Maximum vehicle load guidelines are averaged over one hour
- RIPTA's standard 40' buses have 36 seats, thus the maximum average load should not exceed 43 passengers (or 120%).
- Some individual trips may exceed these averages.

	RAPID BUS	KEY CORRIDOR	URBAN RADIAL	SUBURBAN/ CROSSTOWN	REGIONAL	EXPRESS	FLEX
Average Maximum Passenger Loading (as a percentage of seating capacity)							
Peak	120%	120%	120%	120%	100%	100%	100%
Off-Peak	100%	100%	100%	100%	100%	—	100%



Performance / Minimum Productivity

- Measured in terms of **passengers per revenue vehicle hour** for most routes
- Measured in terms of **passengers per trip** for long routes with little rider turnover

	PASSENGERS PER REVENUE SERVICE HOUR					PASSENGERS PER TRIPS	
	RAPID BUS	KEY CORRIDOR	URBAN RADIAL	SUBURBAN/CROSSTOWN	FLEX	REGIONAL	EXPRESS
Weekdays							
Early AM/Late PM	20	15	10	10	5	15	15
All Day	50	40	20	15	5	20	25
Saturdays							
Early AM/Late PM	20	10	10	10	5	15	–
All Day	30	20	15	10	5	15	–
Sundays							
Early AM/Late PM	20	10	10	10	5	15	–
All Day	30	20	15	10	5	15	–



How will Service Guidelines be Used?

- To provide a consistent and quantifiable basis for the provision of service (and development of COA recommendations)
- To ensure that any new services are designed to meet guidelines
- To provide the basis for an updated RIPTA Service Planning Process to periodically adjust service to meet changing demand
- If routes no longer meet minimum standards:
 - First step would be to identify changes to help the service be more productive
 - Second step may be to reduce service levels or discontinue service
 - Decision could also be explicitly made to continue non-compliant “lifeline” route





Rhode Island Public Transit Authority

COMPREHENSIVE OPERATIONAL ANALYSIS

Route Evaluations

Route Evaluations

- A detailed assessment of RIPTA's 58 routes/8 Flex zones intended to:
 - Identify the purpose of each route (markets and activity centers served)
 - Assess how well each route is performing
 - Identify *potential* strategies or options to improve route performance
 - Obtain public comment on the potential options suggested



RIPTA's "Route Evaluation Blog"

- 24 route evaluations have been posted on-line
- Nearly 400 comments have been shared so far, providing excellent feedback on potential changes:

Route 58

I live on the corner of Sunset Ave & Bourne Ave & I agree that this extra variant should be cut out. I myself see very few people getting on. I take it but I don't have a problem to walk to Mineral Spring to get my bus near McD's. I also think the elimination of both Esmond Village & Stop & Shop Variants is OK. I support this change and to me it will keep most people taking these routes happy.

Posted by Anthony on October 15, 2012

Route 58

I live in pawtucket and work in home depot at the smithfield crossings, currently buses only come to the smithfield crossings every couple of hours so i end up having to be up to 3 hours early for work and when I get out of work I have to wait up to 3 hours for the next bus to come. Also there are no buses that run on the weekend which makes it impossible for me to get to or from work. I love ripta but please add more bus routes to and from smithfield commons.

Posted by jason on October 31, 2012





Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Emerging Themes

Emerging Themes: Service Design

- Improve downtown transit experience (KP)
- Reconfigure downtown Pawtucket service
- Develop “Family of Services”
- Develop Key Corridor Network
- Develop Transit Emphasis Corridors
- Apply Service Guidelines
 - Straighten and simplify service
 - Eliminate poorly utilized variant services
 - Consolidate bus stops and reduce overlapping routes
- Consider New or Expanded Services
- Develop new transit centers/super stops
- Marketing/Rebranding



Emerging Themes: Scheduling

- Improve service coordination
 - In trunk corridors
 - At key transfer locations
- Schedule service more consistently/introduce clockface headways
- Adjust service frequencies
- Adjust spans/days of services guidelines



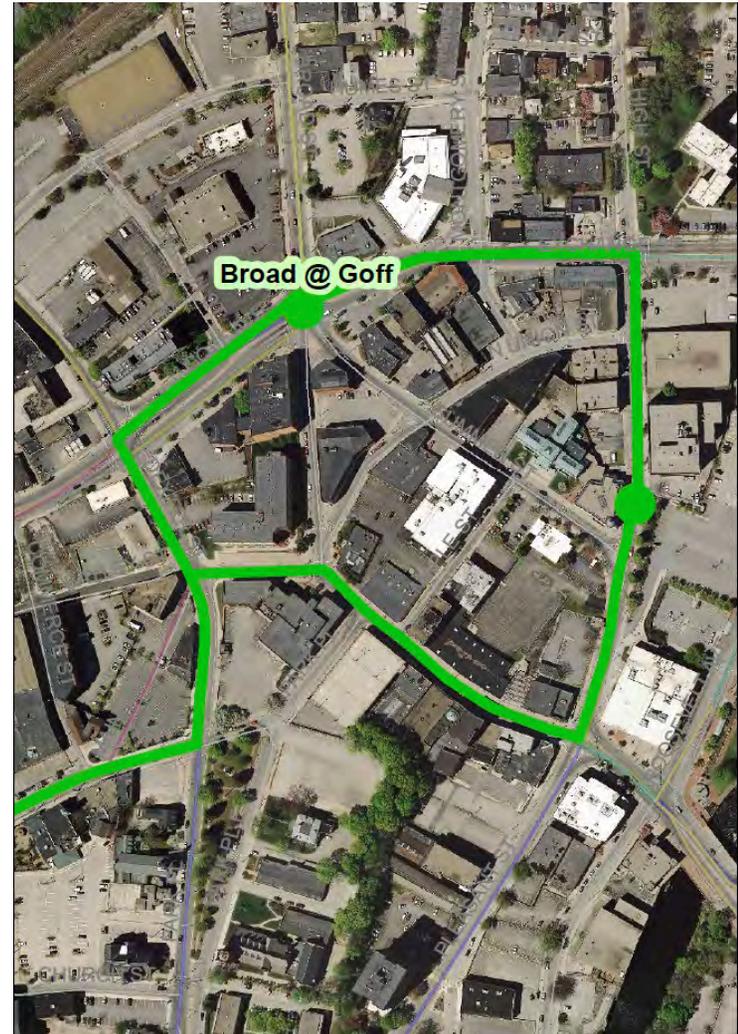
Improve Downtown Transit Experience - KP

- Kennedy Plaza
 - Making progress; still much to be done
- Current direction:
 - Eliminate inner berths
 - Transform to large rectangular plaza
- Becoming more and more confident that fewer berths will be needed
- But still need to determine how to relocate some berths



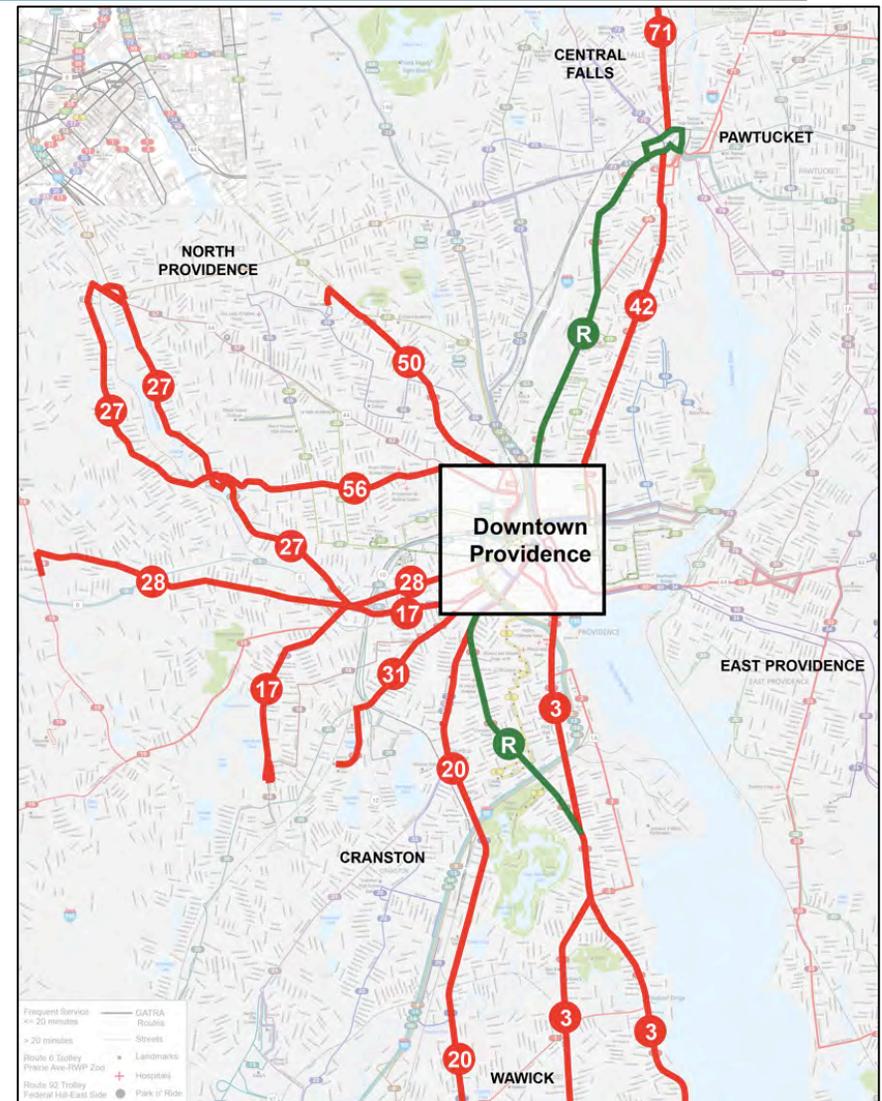
Reconfigure Downtown Pawtucket Service

- Also making progress
- Considering a relocated Pawtucket Transit Center
- Current direction:
 - Move transit center from Roosevelt Avenue to High Street (opposite side of visitor center building)
 - Operate most service in loop via Main, High, Exchange, Goff



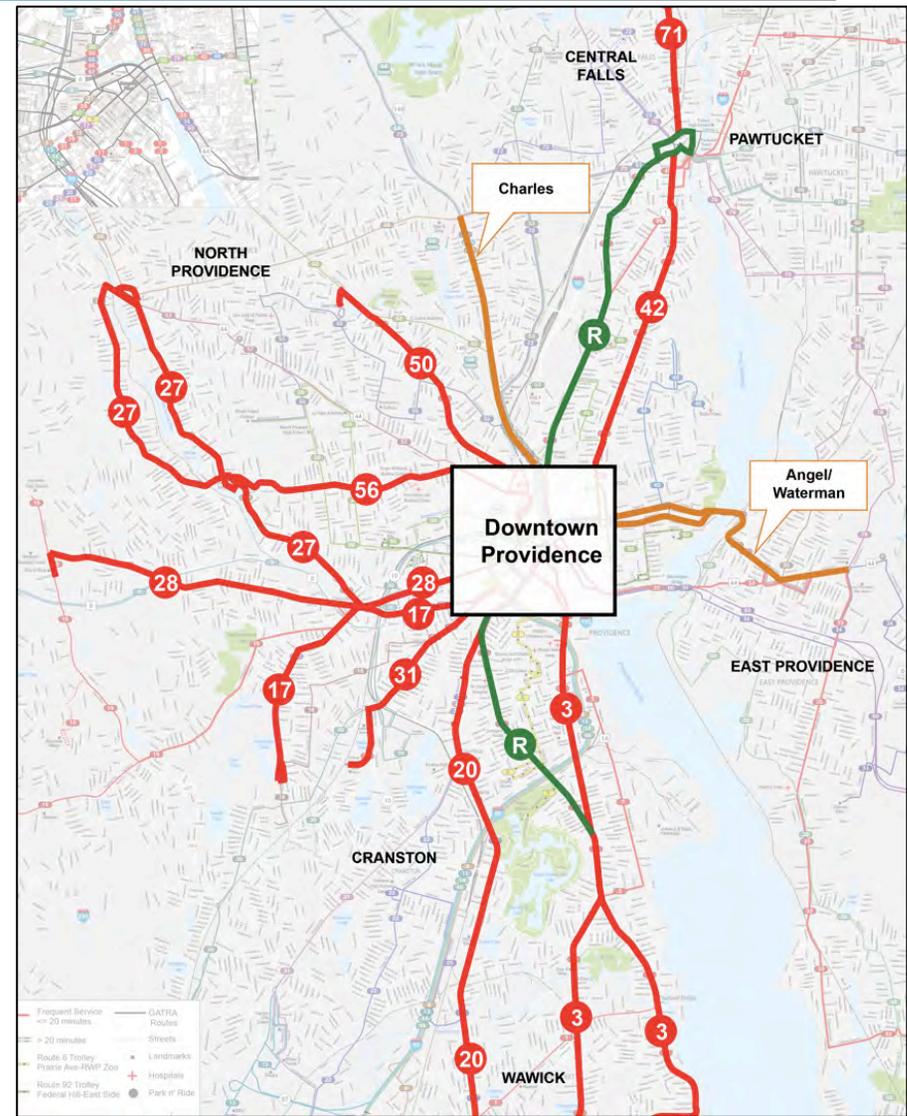
Develop Key Corridor Network

- Highest ridership and highest productivity routes
- Form the “backbone” of the system
- Frequent, all-day service on key corridor routes
- Candidates for R-Line-type upgrades
- Rest of system designed around key corridor routes



Develop Transit Emphasis Corridors

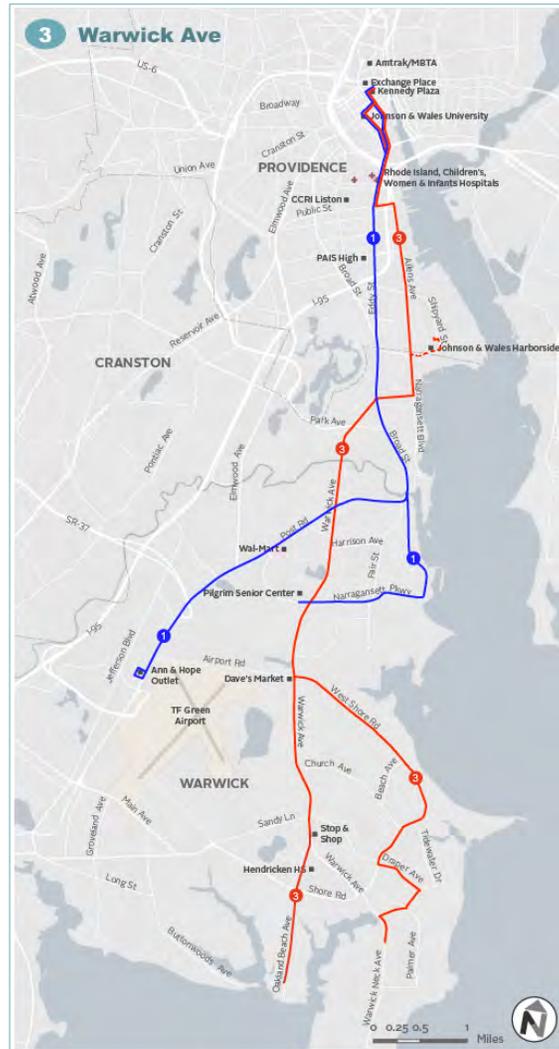
- High volume corridors served by combinations of routes rather than Key Corridor route
- Fill gaps in Key Corridor network
- Similar facility upgrades at Key Corridor routes



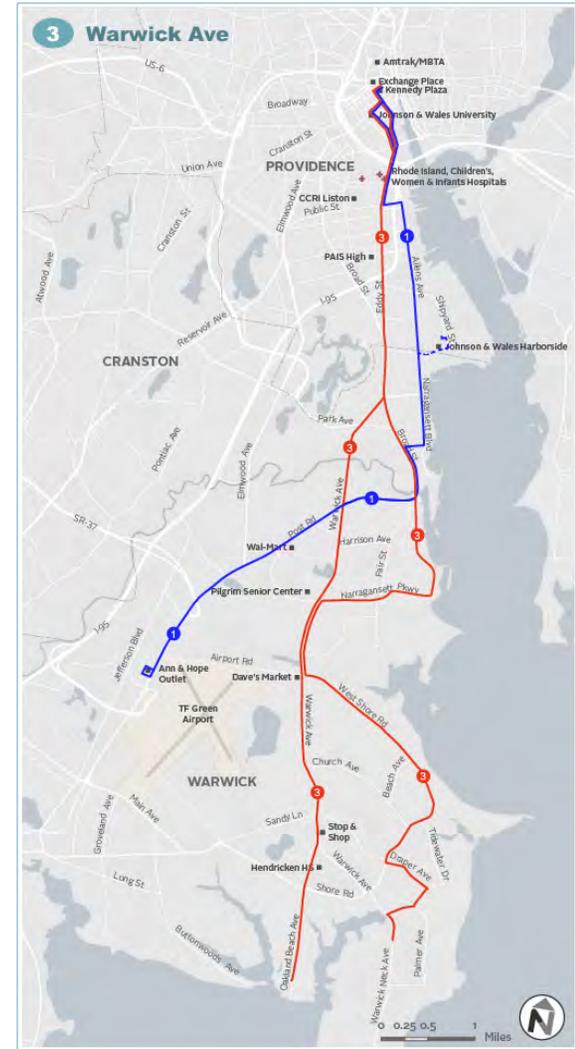
Apply Guidelines: Simplify Service

- Straighten service to make routes more direct
- Reduce duplication and simplify service

Existing Route 1 & 3 Service

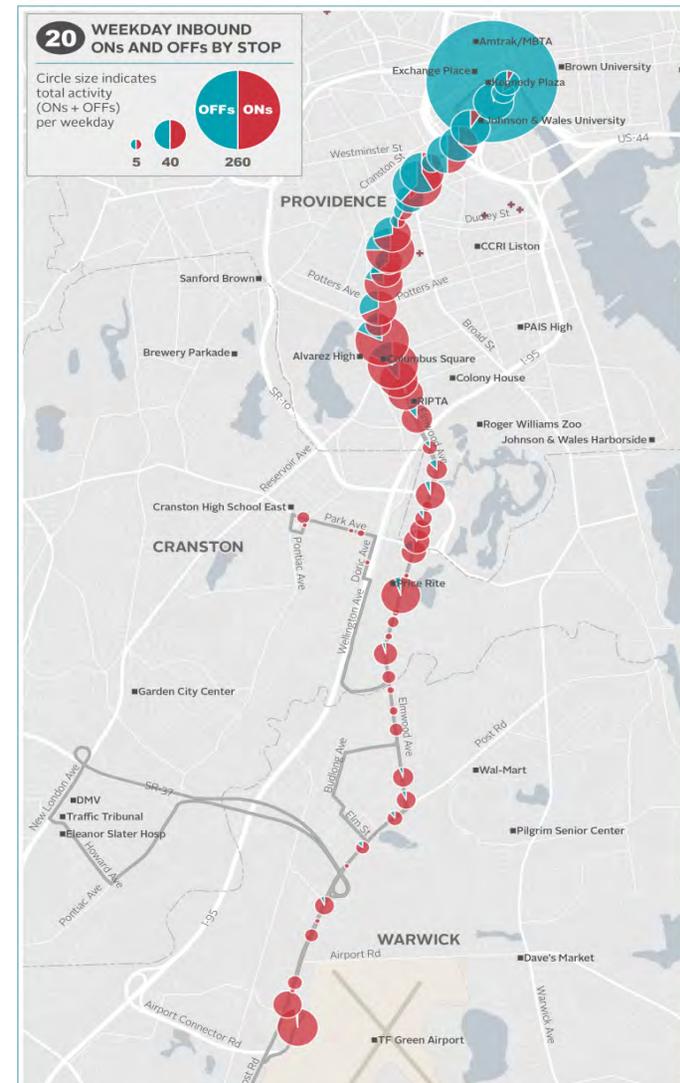


Potential Route 1 & 3 Service



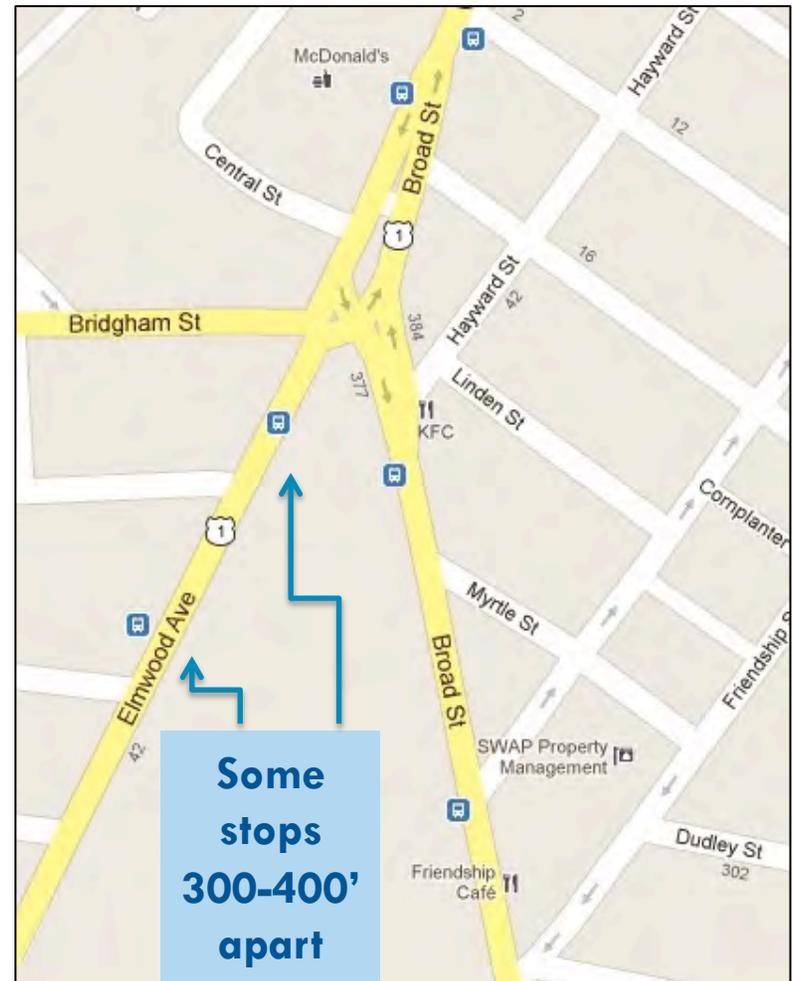
Discontinue Poorly Utilized Variants

- RIPTA provides many deviations to off-route locations
- Most have very low ridership—some usually run empty
- The deviations create gaps in schedules and prevent service coordination
- Elimination of poorly used deviations will create improve service for other riders



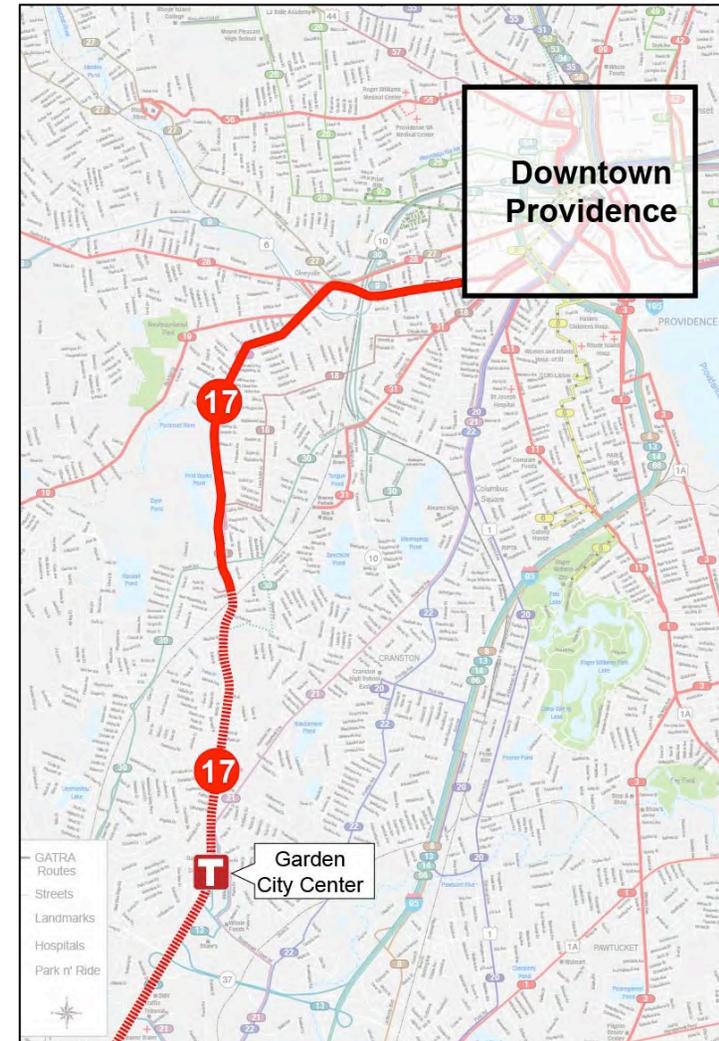
Apply Guidelines: Consolidate Bus Stops

- Survey results indicate about 65% of riders would prefer fewer stops (and faster service)
- This comment was also heard repeatedly during COA Stakeholder interviews.
- Proposed service guidelines set new standards for bus stop spacing
- RIPTA already working with City of Providence to consolidate stops in key corridors



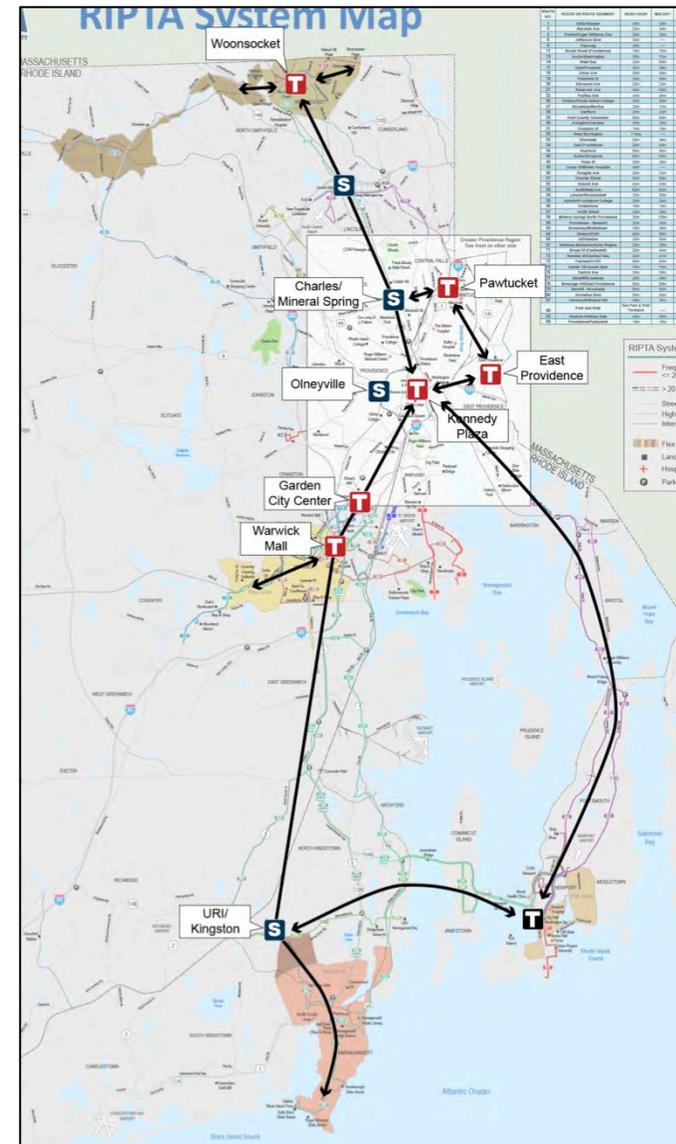
Consider New or Expanded Services

- Extend service to new activity centers or new areas
 - Cranston: Extension of Routes 17 or 18 to Garden City Center and/or Warwick Mall
 - Woonsocket: Expanded local service
 - Coventry/East Greenwich: Centre of New England/Division Road – Warwick Hub
 - Tiverton
- Crosstown/circumferential services
 - Centredale – Pawtucket
 - Cranston - Warwick



Focus Service Around Hubs & Superstops

- Develop new/improve existing hubs as focal points for local service:
 - Woonsocket
 - Pawtucket
 - East Providence
 - Garden City Center or Warwick Mall
- Develop “Superstops” at other major connecting locations:
 - Lincoln Mall
 - Charles/Mineral Springs
 - Olneyville
 - URI/Kingston

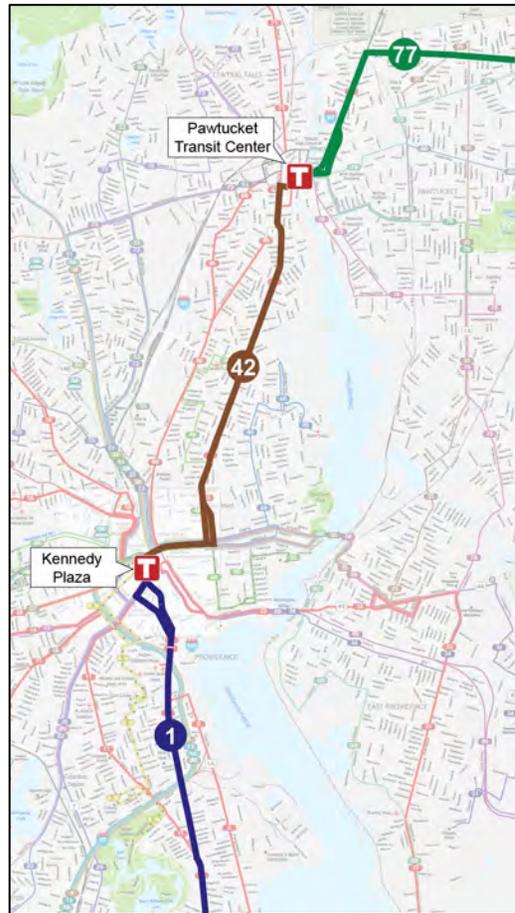


Marketing/Rebranding

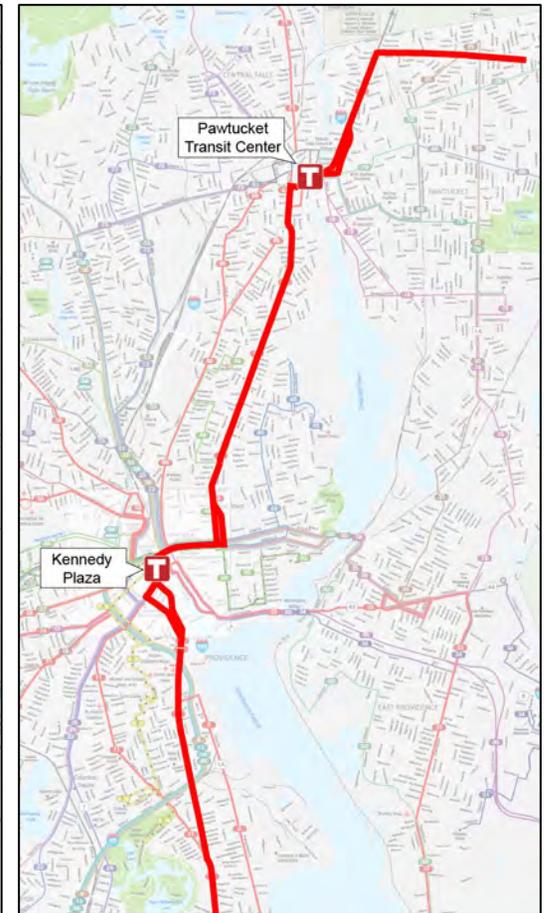
- Family of services
- Rebrand through routes as single routes
- Differentiate local and express trips
 - For example, 66 and 66X, rather than local and express both as 66
- Unique numbers and names for Route 90 express routes

Routes 1, 42, & 77

Presented to public as three routes



But really a single route



Scheduling Improvements

- Improve Service Coordination in trunk corridors:
 - Charles Street
 - Mineral Spring Avenue
 - Broadway
 - Westminster
 - Elmwood Avenue
- Introduce clockface scheduling
- Adjust route frequency and span to meet updated Service Guidelines

Clockface Headways:

- *Easier to remember*
- *Better balance loads*
- *Enable service coordination*

<u>Irregular Headways</u>	<u>Clockface Headways</u>
7:00	7:00
7:25	7:15
7:40	7:30
7:50	7:45





Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Balancing Demand vs. Requests for “Coverage Based Service”

Service Balance

- Transit agencies provide two types of service:
 1. **Demand-driven** where:
 - Demand is high.
 - Transit can compete well with other modes, particularly automobiles.
 2. **Coverage-based** to:
 - Provide geographic equity
 - Serve social needs of disadvantaged populations.
- Ridership and productivity varies greatly:
 - **Demand-driven**: Higher ridership/higher productivity
 - **Coverage-based**: Lower ridership/lower productivity



What is the Best Balance?

- All transit systems attempt to balance demand-driven and coverage-based service
- All balances are criticized:
 - Where transit demand is high, stakeholders believe too little is spent there and too much in low demand areas.
“Why are you running so many empty buses out ‘there’ when we need more service?”
 - Where demand is low, riders believe too much is spent in core areas and too little in their areas.
“It’s unfair that other areas get so much service when we get so little.”
 - And where coverage-based service are provided, non-riders particularly complain:
“Why are you wasting so much money running empty buses?”



COA Decisions

- COA changes are being designed to improve service in a cost neutral manner.
- Thus—improvements that cost money must be offset by actions that save money.
- How should RIPTA balance demand and coverage-based needs?
 - More focus on demand-based services?
 - More focus on coverage-based service (even if ridership will be very low)?
 - RIPTA has some very low ridership routes and variant services— is there a point below which RIPTA should not provide service?



Next Steps / Next Meeting

■ Next Steps

- Board review of Service Guidelines
- Finalize Route/Flex Evaluations
- Further identify “improvement themes” and develop specific Service Scenarios
- Continue hub planning

■ Next Meeting

- Anticipated for late December
 - Discussion of Proposed Service Scenarios
 - Public Outreach Strategy

