



Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Advisory Committee Meeting #2

September 20, 2012

Today's Agenda

- Introductions and Recap of Project Overview
- Service Guidelines
- Route Evaluations
- Hub Planning
- Update on Passenger and Non-Rider Surveys
- Advisory Committee Discussion/Input
- Next Meeting and Next Steps

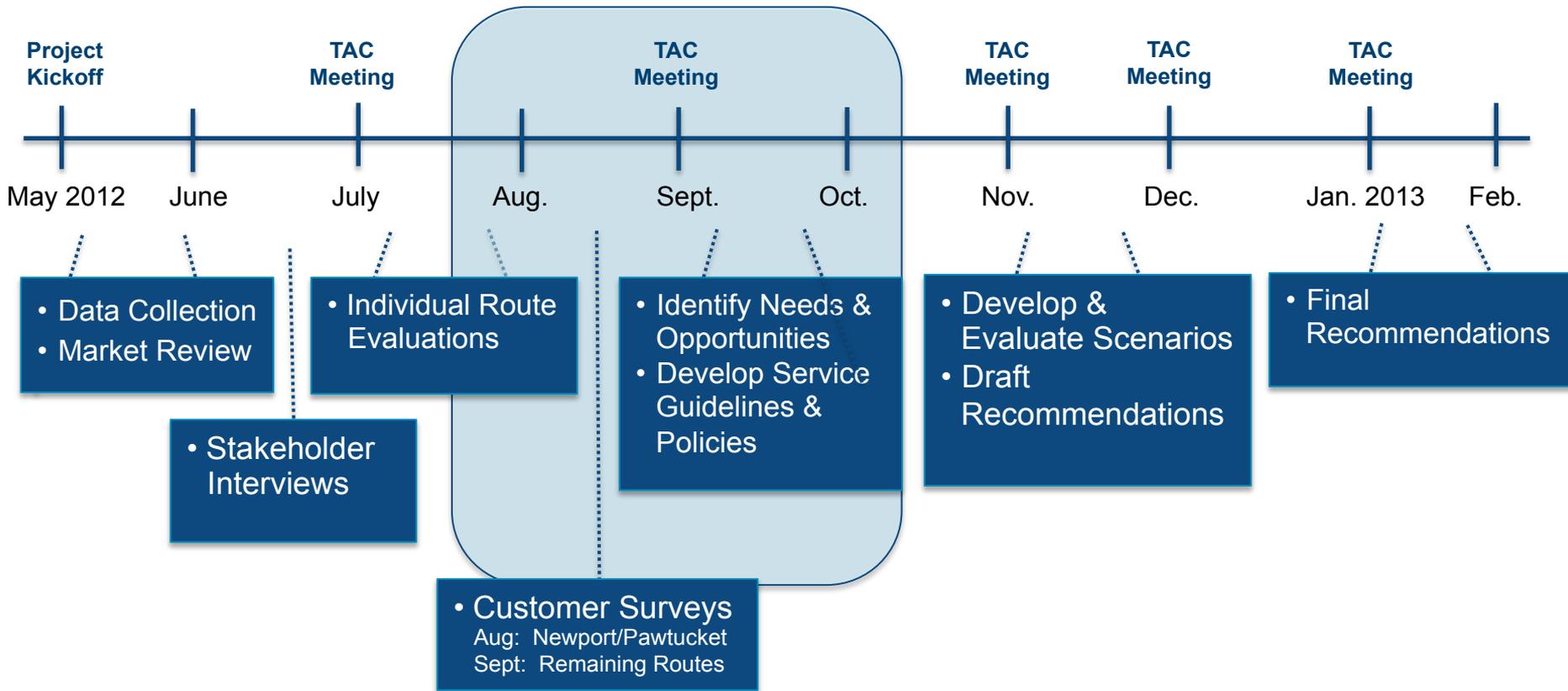


Project Overview

- What is a COA?
 - An in-depth look at RIPTA services to identify changes to improve service
- What does RIPTA hope to achieve
 - Better service to existing riders
 - Attract new riders
- *Recommended actions need to fit within RIPTA's existing budget.*
- *Overall goal is to direct transit resources where they will be most effective.*



COA Timeline





Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Introduction to Service Guidelines

August 27, 2012

What are Service Guidelines; Why Use Them?

- ***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



Types of Service Guidelines

- *COA-related guidelines include:*
 - Service coverage
 - Service design
 - Level of service (frequency and span)
 - Productivity
 - Economic performance



Examples of Coverage & Design Guidelines

Measure	Example
Service Coverage	Service provided within a 10 minute walk of all residents in areas with greater than 5,000 persons/square mile
Directness Key bus routes Local routes Community routes	Route length no more than: 1.2 times most direct distance 1.5 times most direct distance 2.5 times most direct distance
Route Variants Economic performance Utilization No. of New Passengers	Must not degrade overall cost per passenger Must not degrade passengers per vehicle hour At least 25% of passengers inconvenienced
Bus Stop Spacing Key Routes Local routes Community routes	Average of no more than: 6 per mile 8 per mile 10 per mile

Impacts of Coverage & Design Guidelines

- **Service Coverage**
 - Service provided in all areas that meet minimum thresholds
 - Service provided in other areas only if it meets economic performance and productivity guidelines
- **Directness**
 - Higher volume routes are more direct
 - Lower volume routes can be less direct
- **Route Variants**
 - Variants established only they serve significant volumes of riders
 - Variants discontinued if they do not
- **Bus Stop Spacing**
 - On high volumes routes, longer walks to stops for faster service once on-board
 - On lower volume routes, shorter walks to stops for transit dependents, but slower service



Examples of Level of Service Guidelines

Measure	Example
<p><i>Span of Service (minimum)</i></p> <ul style="list-style-type: none"> Key bus routes Local routes Express routes 	<ul style="list-style-type: none"> 6:00 am - midnight 7:00 am - 6:30 pm AM peak & PM peak
<p><i>Service Frequency</i></p> <ul style="list-style-type: none"> Key bus routes Local routes Express routes 	<ul style="list-style-type: none"> 10 min peak/15 min midday/20 min evening 30 min peak/60 min off-peak 3 trips AM peak/3 trips PM peak
<p><i>Maximum Vehicle Loading</i></p> <ul style="list-style-type: none"> Peak periods Off-peak periods 	<p>No more than:</p> <ul style="list-style-type: none"> 120% of seated capacity 100% of seated capacity



Impacts of Level of Service Guidelines

Provide bounds for amount of service provided:

- **Minimum levels of service** set based on:
 - Minimum span of service guidelines
 - Minimum service frequency guidelines
- **Higher levels of service** set based on:
 - Loading guidelines (maximum loads per trip)
 - Strong economic performance or productivity



Examples of Productivity and Economic Guidelines

Measure	Example
<p>Utilization (minimum)</p> <ul style="list-style-type: none"> Key bus routes Local routes Community routes 	<p>At least:</p> <ul style="list-style-type: none"> 40 passengers per vehicle hour 30 passengers per vehicle hour 15 passengers per vehicle hour
<p>Cost Effectiveness</p> <ul style="list-style-type: none"> Key bus routes Local routes Community routes 	<p>Operating cost per passenger not greater than:</p> <ul style="list-style-type: none"> \$3.50 \$4.50 \$8.00
<p>Cost Effectiveness</p> <ul style="list-style-type: none"> Key bus routes Local routes Community routes 	<p>Operating cost per passenger not greater than:</p> <ul style="list-style-type: none"> 2 times system average 3 times system average 4 times system average



Impact of Productivity and Economic Guidelines

Impacts of Economic Performance and Productivity Standards:

- **Utilization**

- No impact on routes that meet minimum standards
- Service would be reduced on routes that do not meet minimum standards (down to minimum service levels)

- **Cost Effectiveness**

- Same impacts as with Utilization standards

For routes that could not meet standards even at minimum service levels:

- First step would be to identify and make changes to meet standards
- If not possible, discontinue service or make explicit decision to continue non-compliant route



“Family of Services”

- *RIPTA provides a “family of services” designed to tailor service to different demands*
- *Guidelines vary for different types of services*
- *Potential RIPTA service hierarchy:*
 - Rapid Bus
 - Key Corridor
 - Urban Arterials
 - Crosstown/Suburban
 - Regional/Hub Connectors
 - Express
 - Flex
 - Lifeline



Summary

- **For RIPTA, service guidelines will:**
 - Provide a consistent and quantifiable basis for the provision of service (and development of COA scenarios and recommendations)
 - Provide the basis for the development of a service planning process that would ensure that service is adjusted periodically as markets change



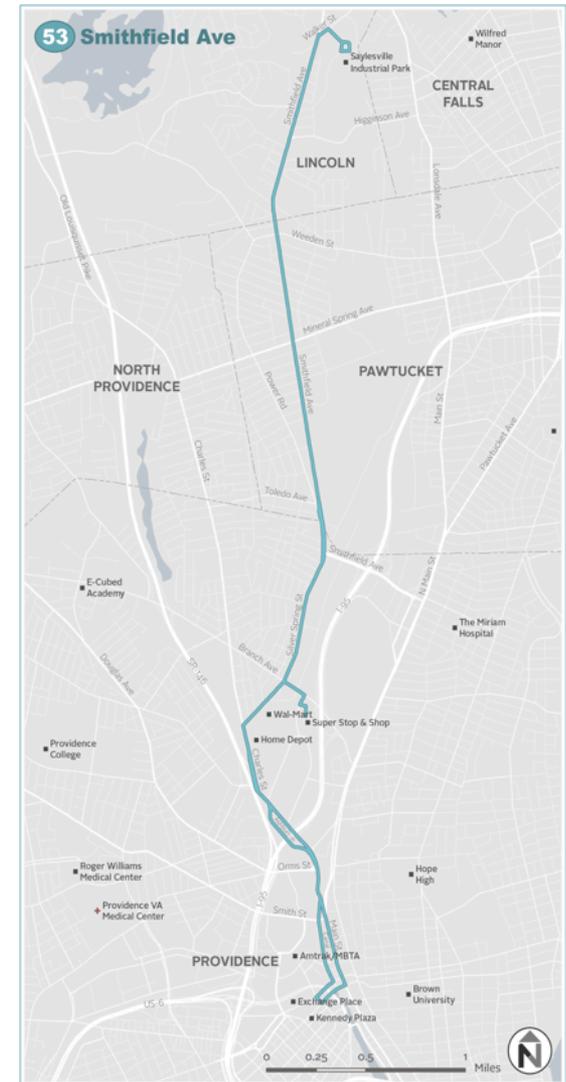


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Route Evaluations

Route Evaluations

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



Route Evaluations

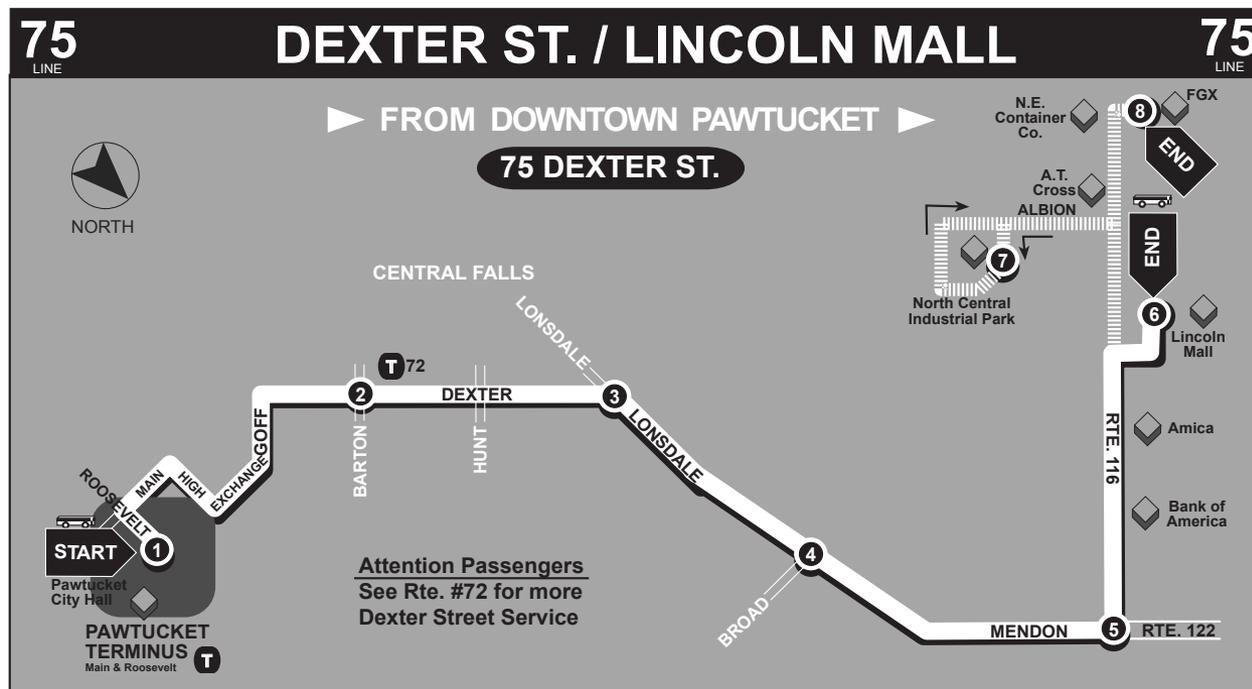
Each Route Evaluation includes:

Alignment & Service Patterns	Route Performance	Overall Assessment
What is the Route?	Cost Effectiveness	What does this route do well?
How does the Route operate? (e.g. Schedule)	Efficiency	What might be contributing to less than average performance?
What is the Ridership?	Comparison to Other Routes	Options & Opportunities to improve performance



Alignment & Service Patterns

- What areas and activity centers are served?
- Does the route have “variants”, or certain trips that make short deviations to serve special activity centers (e.g. high schools or elderly housing)?



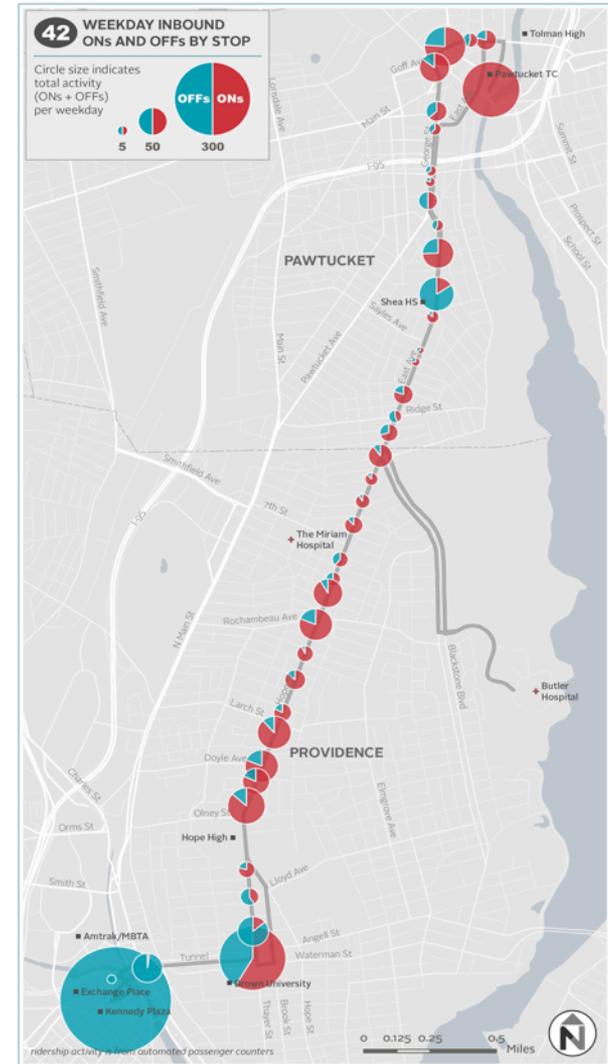
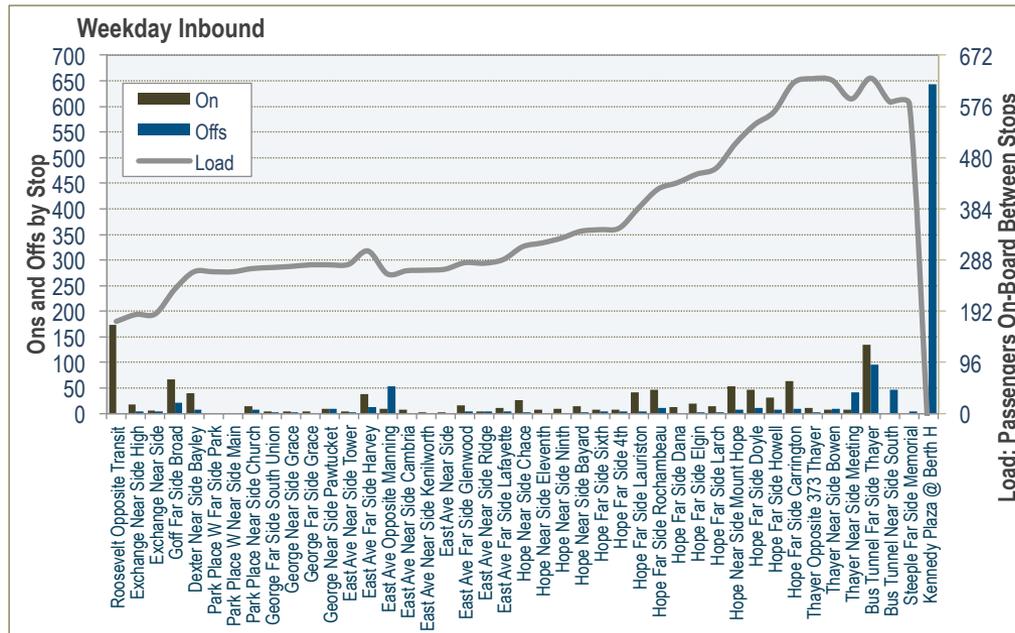
Alignment & Service Patterns

- Schedule

SERVICE DAY	SPAN OF SERVICE	ONE-WAY TRIPS (IB)	ONE-WAY TRIPS (OB)	HEADWAY (MINS)
WEEKDAY	5:50 AM – 7:00 PM	13	15	
Early AM	5:50 AM – 6:59 AM	2	2	47-50
AM Peak	7:00 AM – 8:59 AM	2	2	50
Midday	9:00 AM – 2:59 PM	5	5	35-95
PM Peak	3:00 PM – 5:59 PM	3	4	40-55
Night	6:00 PM – 7:00 PM	1	2	50
SATURDAY	6:21 AM – 7:00 PM	9	9	90
SUNDAY	7:53 AM – 7:00 PM	8	8	90

Ridership by Stop

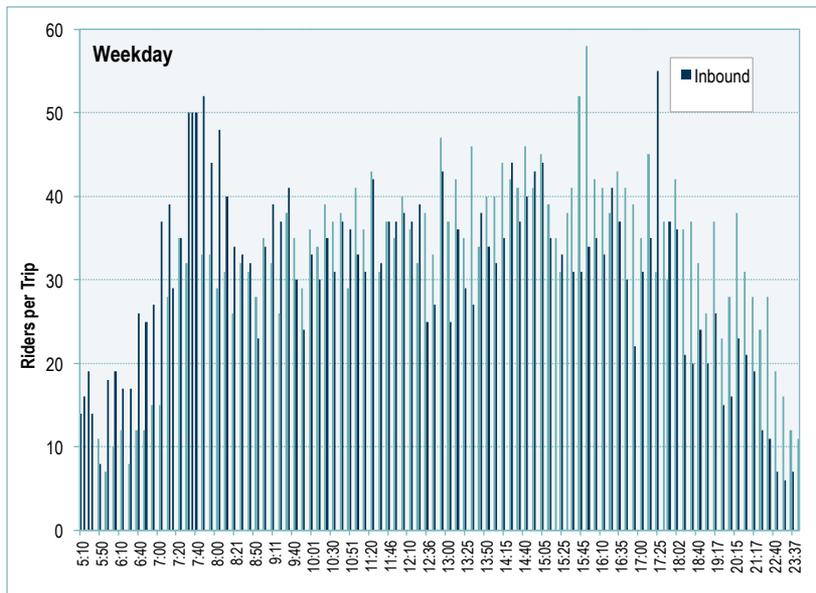
- Identifies boarding and alighting patterns by stop
- Identifies loading patterns



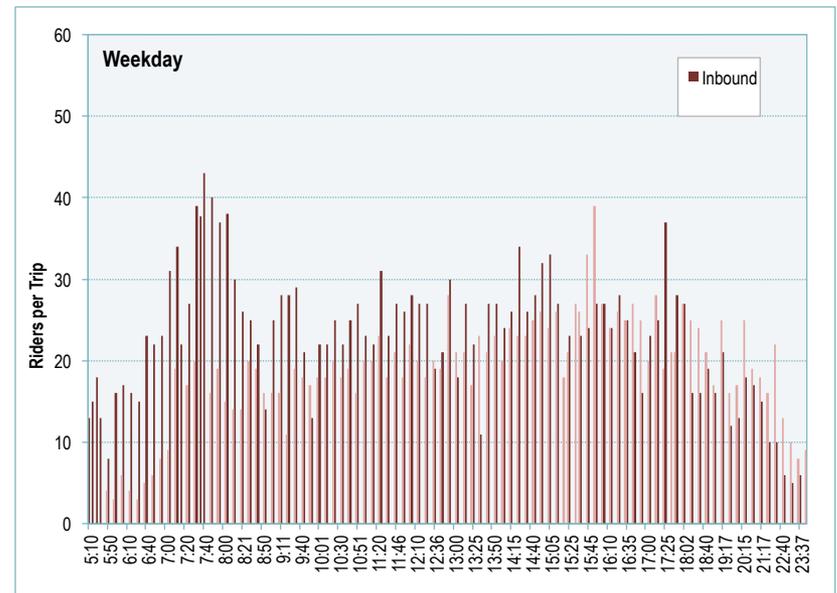
Ridership by Trip

- Identifies ridership by time of day
- Also used to identify maximum loads

Route 11 Total Ridership by Trip



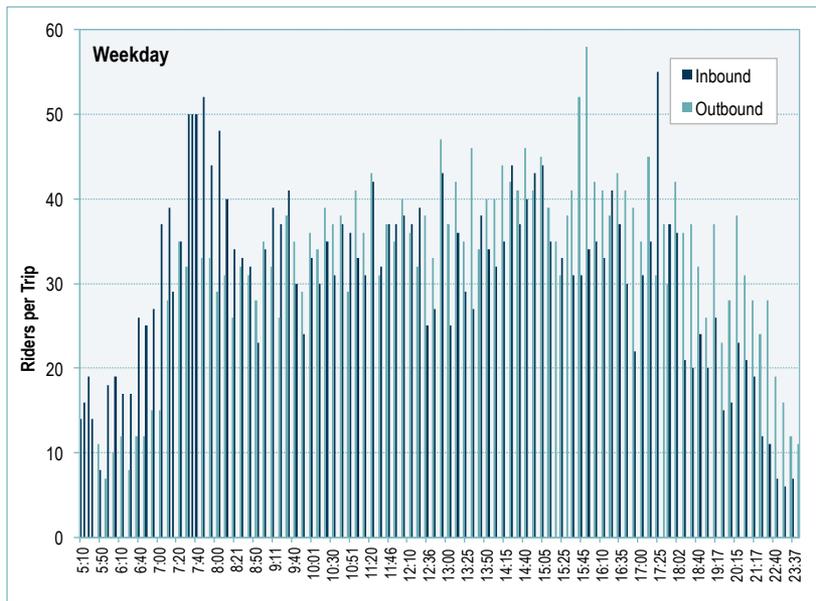
Route 11 Average Max Loads by Trip



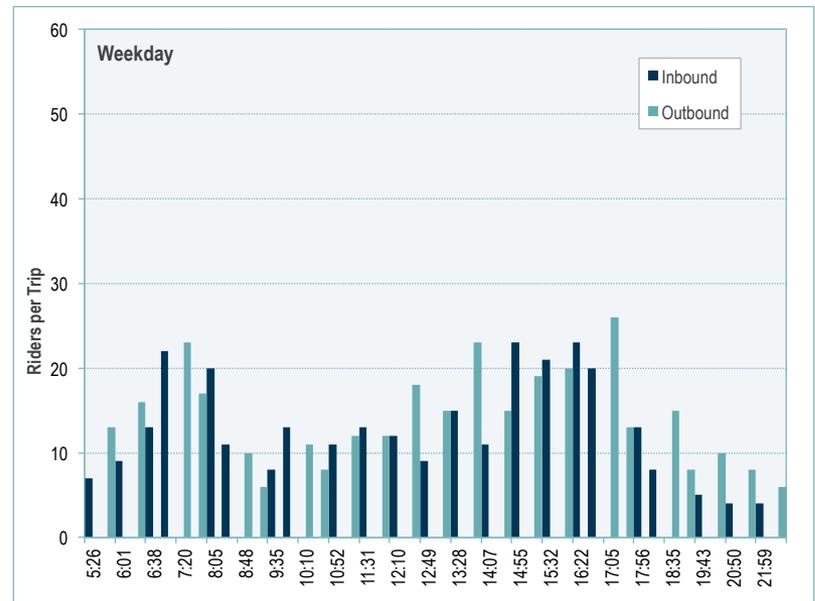
Ridership by Trip

- Some routes have high ridership all day; others strongest during commuting hours

Route 11 Broad Street Total Ridership by Trip



Route 32 East Providence Total Ridership by Trip



Route Performance

- Also comparing performance to systemwide averages

PERFORMANCE MEASURE	SYSTEM AVERAGE	ROUTE 32	ROUTE 77	ROUTE 11
Operating Cost per Passenger	\$3.12	\$8.29	\$3.17	\$1.25
Passengers per Revenue Vehicle Hour	33.2	15.1	32.7	66.0
Passengers per Revenue Vehicle Mile	2.5	0.9	3.9	9.7
Total Vehicle Hours per Revenue Vehicle Hour	1.1	1.2	1.15	1.03
Average Speed (mph)	13.4	17.0	8.3	6.8
Bus Stops per Mile	5.6	5.9	10.6	7.2

Overall Assessment

- How does this route perform overall? Why?
- **What might be done to improve performance?**
 - Eliminate variants or trip detours that inconvenience more passengers than they serve?
 - Revise the frequency or span of service?
 - Better coordinate with other routes in the same corridor?
- Should resources be redirected from certain low performing routes (or route segments) to increase service in areas of higher demand?

➔ *Public comments will be solicited through an on-line Route Evaluation “blog”*



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Hub Planning

Hub Planning

- **Strengthening and Improving Hubs** was a key concern noted by many stakeholders
- Kennedy Plaza
 - RIPTA is working with City of Providence and Downtown Parks Conservancy to improve the overall attractiveness and vitality of the Kennedy Plaza/Burnside Park area
- Pawtucket
 - RIPTA is working with the City of Pawtucket to consider potential new hub and bus routing options, particularly to enhance the attractiveness and vitality of the Slater Mill area
- Other hubs
 - How can these be strengthened?
 - Where might new hubs or “mini-hubs” be considered



Kennedy Plaza

Goal is to redesign the Plaza as a more inviting activity center and pedestrian destination while enhancing the transit experience



GREATER METRO TRANSIT STUDY — MEETING CURRENT NEEDS REINVENT KENNEDY PLAZA

Kennedy Plaza can be both a successful transit center and a vibrant urban place. The redesign of Kennedy Plaza will enhance rider experience, improve pedestrian space, and reconnect downtown Providence to the surrounding neighborhoods. Kennedy Plaza, while still the center of the RIPTA system, will become a vibrant, centrally coordinated, gateway to the City of Providence that offers activities, events, and commerce, as well as public transit.

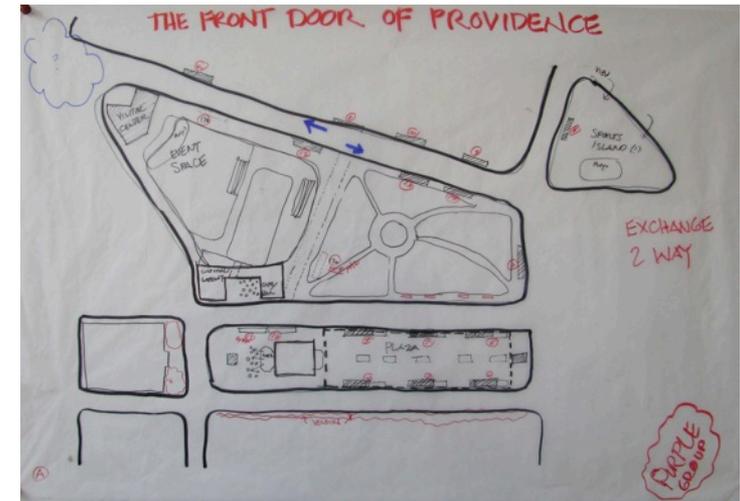


RIPTA sponsored a Kennedy Plaza workshop in the summer of 2009 to generate visionary ideas for the Plaza to improve our center of operations. For the city, beyond enhanced transportation, the economic and social benefit of Kennedy Plaza is that it simply provides a concentration of students, workers, residents and visitors in the downtown area. By redesigning activity locations, physical features and open space, this population density is an opportunity to nurture businesses and activities.

■ = Map shows buses deconcentrated to lessen vehicle traffic, disperse foot traffic, and encourage riders and other visitors to utilize the plaza and park's improved facilities.

NEXT STEPS:

- 1** Develop Short-term Plan
Develop alternatives to existing bus berths.
Develop two new peripheral hubs
- 2** Implement Short-term Plan
Develop two additional peripheral hubs
- 3** Develop Long-term Plan
Implement design for enhanced berth spaces.
Develop new bus operations plans
- 4** Design and Development for Longer-term Options
- 5** Implement Long-term Enhancements
Construct streetcar accommodations



Pawtucket

- 12 RIPTA routes serve the Pawtucket hub
- A large number of passengers are transferring to other routes
- Goal is to remove some RIPTA activity from Slater Mill area



Other Hubs

- How might other existing RIPTA hubs be strengthened
 - E.g. Newport, Woonsocket, URI, Warwick
 - Better coordination of routes to ease transfers?
 - More customer amenities to improve their attractiveness and support local development goals?
 - Use of real time information applications providing convenient transit tools for the customer?
- Should other new hubs be considered?
 - Downtown Providence?





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Survey Update

On-Board Passenger Surveys / On-Line Surveys

Passenger Surveys

- Purpose:
 - Better understand travel patterns of RIPTA riders
 - Find out where they prefer resources be directed (e.g. weekday, night or weekend service)
- 15 routes surveyed in August
 - Including Newport, to capture seasonal demand
- 43 routes being surveyed this week
- Printed and on-line surveys available for both passengers and non-riders
- Available in English and Spanish



Passenger Surveys

Initial round of surveys being analyzed now. Data will be used to understand:

- Travel patterns
 - Where are riders coming from and traveling to
- Rider demographics
 - Who rides frequently?
 - Who uses cash vs. passes?
- Preferences and tradeoffs
 - More day or night trips?
 - Weekends or weekdays?
 - More stops or faster service?

ABOUT THE BUS YOU ARE ON RIGHT NOW

1. What bus route are you on right now? _____

2. Where did you get on this bus?
list the intersection and city (like Broadway and Tobey Streets, Providence)

3. How did you get to the bus stop above?
 Walked to bus stop Biked to bus stop
 Drove to bus stop Used a wheelchair/scooter
 Transferred from a train Someone drove me to bus stop
 Transferred from another bus (which route? _____)
 Other: _____

4. Where will you get off this bus?
list the intersection and city (like Broadway and Tobey Streets, Providence)

5. How will you get to your destination?
 Walk to destination Bike to destination
 Drive to destination Use a wheelchair/scooter
 Transfer to a train Someone will pick me up
 Transfer to another bus (which route? _____)
 Other: _____

ABOUT THE ENTIRE TRIP YOU ARE MAKING TODAY (from home to work, for example)

6. Where are you coming from?
list the intersection and city (like Broadway and Tobey Streets, Providence)

7. What is the place you listed above?
 Home Work
 Shopping/store Recreation/social
 School/college Medical appointment
 Childcare Other

8. Where are you going?
list the intersection and city (like Broadway and Tobey Streets, Providence)

9. What is the place you listed above?
 Home Work
 Shopping/store Recreation/social
 School/college Medical appointment
 Childcare Other

10. How did you pay your fare for your trip today?
 Cash 1-day pass 7-day pass 15-ride pass Monthly pass
 RIPTIK Senior/Disabled Pass UPass / College ID Eco-Pass Rhody 10

11. Did you have access to a car for this trip?
 Yes No

12. How often do you ride RIPTA?
 Frequently (3+ times per week) Occasionally Rarely (less than once every two weeks) I am a visitor

13. What is your age?
 13 or under 14-19 20-24 25-34 35-44 45-54 55-64 65 or over

14. Are you currently employed?
 Full-Time Part-Time Student Retired Not Working

15. What is your approximate annual household income?
 Under \$10,000 \$10,000 - \$14,999 \$15,000 - \$24,999 \$25,000 - \$34,999 \$35,000 - \$49,999 \$50,000 - \$74,999 \$75,000 - \$99,999 \$100,000 or more

Check ONE box per row:

16. MORE FREQUENT SERVICE - Increase service frequency, but operate for a shorter time frame OR LONGER SERVICE HOURS - Decrease service frequency, but operate for a longer time frame

17. MORE WEEKEND SERVICE - Provide less frequent weekday service in order to provide more weekend service OR MORE WEEKDAY SERVICE - Provide less frequent weekend service in order to provide more weekday service

18. MORE NIGHT SERVICE - Provide less frequent daytime service in order to provide more night service OR MORE DAYTIME SERVICE - Provide less frequent night service in order to provide more daytime service

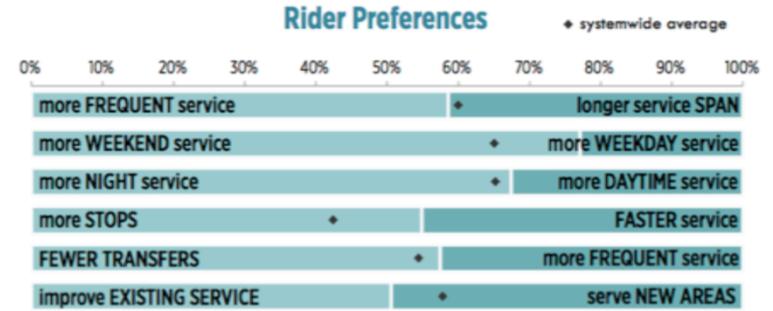
19. MORE STOPS - Provide more stops even if it means service is slower OR FASTER SERVICE - Reduce the number of stops in order to make service faster

20. FEWER TRANSFERS - Operate more routes with less frequent service to decrease the need for transfers OR MORE FREQUENT SERVICE - Operate fewer routes with more frequent service, but increase the need for transfers

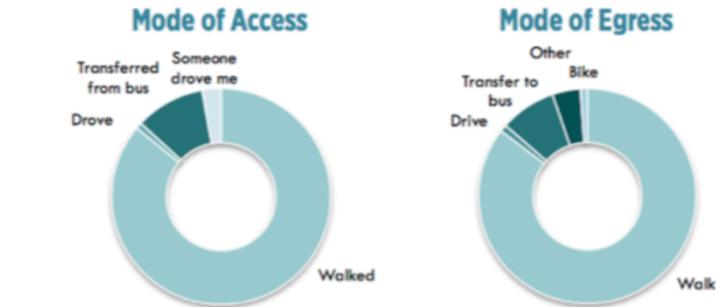
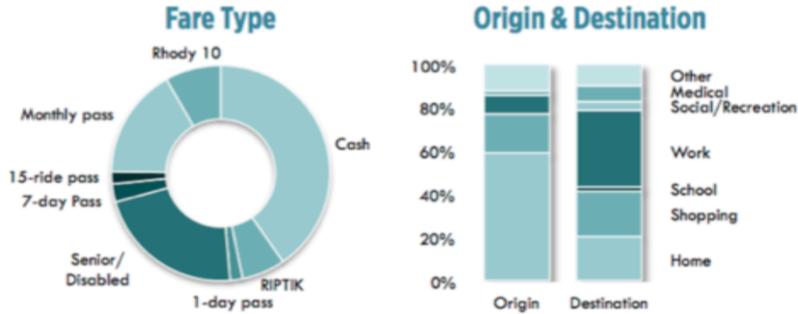
21. IMPROVE EXISTING SERVICE - Buses would come more frequently on existing routes OR SERVE NEW AREAS - Extend service to areas currently without service



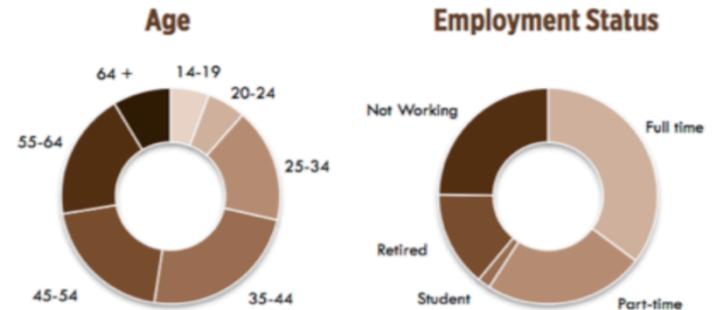
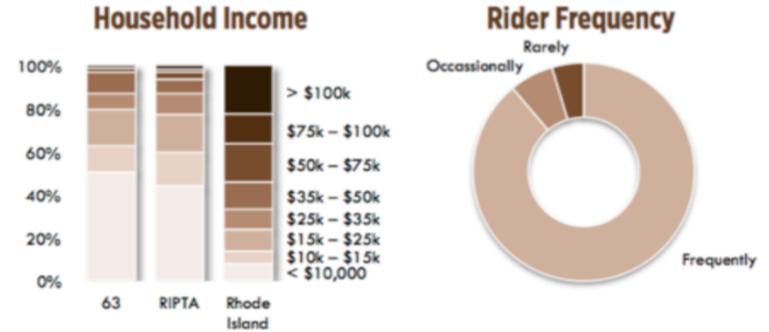
	Route 63	RIPTA
Number of valid surveys:	109	—
Percent taken in Spanish:	5%	5%
Percent completed online:	—	—
Percent of riders with access to a car:	5%	9%
Average weekday ridership:	224	19,659
Weekday ridership per revenue hour:	26.4	29.3



Trip Characteristics

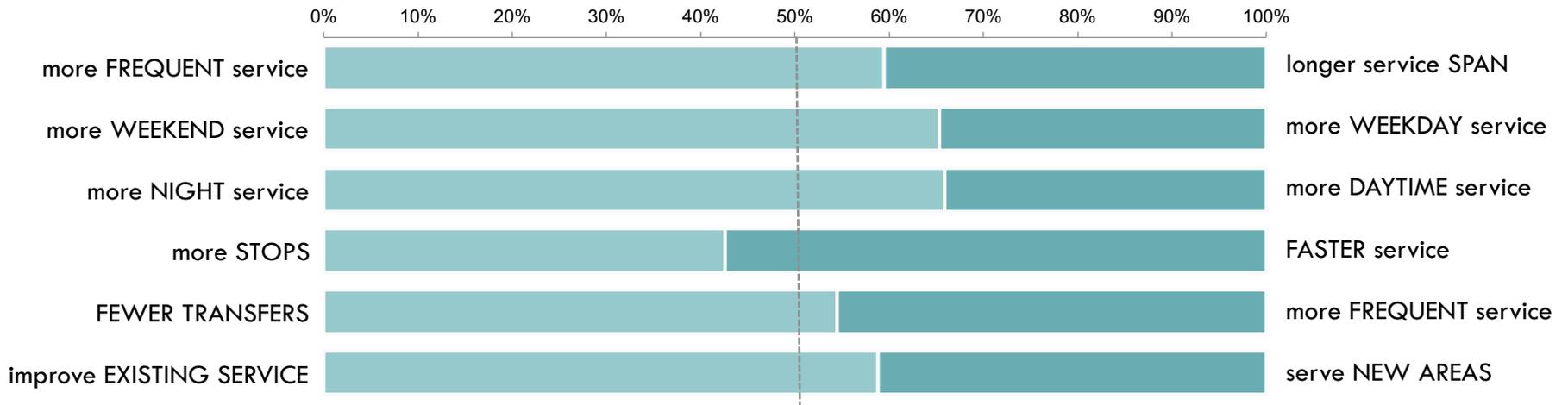


Rider Demographics



Passenger Survey

- Preliminary results from tradeoff questions...



Non-Rider Survey

- Non-riders are also being surveyed to identify how RIPTA might attract more new riders
- Survey looks to identify how familiar “non-riders” are with RIPTA services, and the reasons these individuals don’t use RIPTA
 - Sensitivity to gas prices?
 - Availability of car? Cost of travel?
- Survey also looks to identify improvements that would attract more “choice” riders
 - Faster service? Lower fares? Higher frequency? etc.

Please encourage your co-workers and peers to visit: www.ripta.com/coa to take the survey!



Discussion & Comments



Next Steps / Next Meeting

■ Next Steps

- Draft & Propose Updated RIPTA Service Guidelines
- Use data and evaluation results to identify opportunities to improve RIPTA's system (Service Scenarios)
 - Transit Market Review
 - Survey Results
 - Route Evaluations
- Work with Partners on Hub Planning

■ Next Meeting

- Anticipated for November
 - Discussion of Potential Service Scenarios

