



Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Advisory Committee Meeting #1

July 25, 2012

Today's Agenda

- Welcome and Introductions
- Project Overview, Schedule, and Work-to-Date
- RI Transit Market Review
- Stakeholder Input
- Making Service Less Productive/A Transit Parable
- Service Design Principles
- Advisory Committee Discussion/Input
- Next Meeting and Next Steps





Rhode Island Public Transit Authority
COMPREHENSIVE OPERATIONAL ANALYSIS

Project Overview

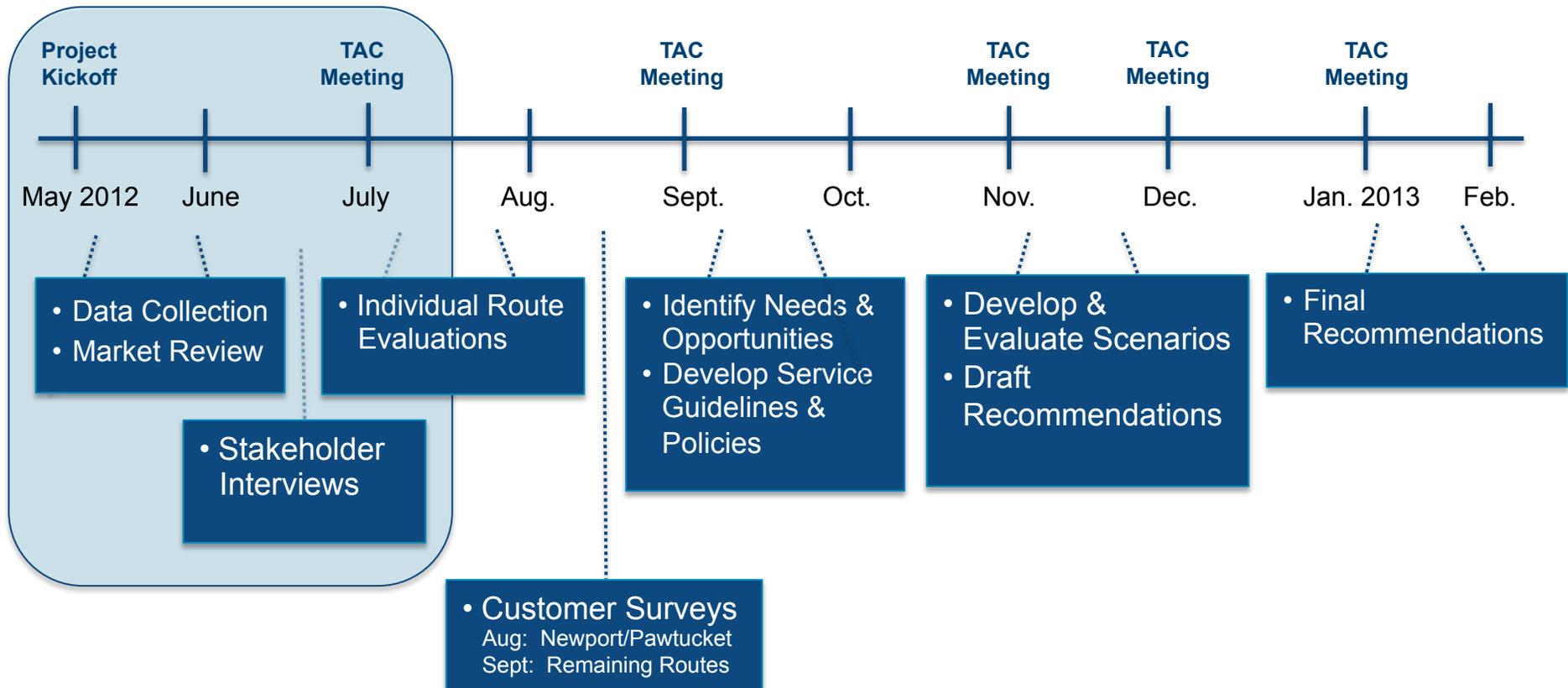
July 25, 2012

Project Overview

- What is a COA?
 - An in-depth look at RIPTA services to identify what RIPTA does well today, as well as potential opportunities to enhance the transit network.
- What does RIPTA hope to achieve
 - Make service easier to use and understand
 - Make service more convenient, faster and more direct
 - Better match service to demand
- *Recommended actions need to fit within RIPTA's existing budget. The overall goal is to direct transit resources where they will be most effective.*



COA Timeline



Public Participation & Input

- Technical Advisory Committee
- Stakeholder Interviews
- Customer Surveys
- Other Surveys (non-users)
- Public Meetings
- Other Outreach
 - RIPTA Webpage
 - Attend other meetings, special events
- Briefings for General Assembly



Work Completed to Date

- Data Collection
 - Inventory of RIPTA services
 - RIPTA passenger counts
 - Information on ongoing initiatives and projects
- Statewide Market Review
 - Land Use & Demographic Data
 - Travel Demand
- Stakeholder Interviews



Stakeholders Input

Interviews conducted with:

- State Agencies
 - Department of Human Services
 - RI Statewide Planning
- Municipalities:
 - Newport, Pawtucket, Providence, Warwick, and West Warwick
- Universities:
 - Johnson & Wales
 - URI
- Rider Focus Groups:
 - RIPTA Riders Alliance
 - Accessible Transportation Advisory Committee
- Downtown Providence Parks Conservancy (Kennedy Plaza)



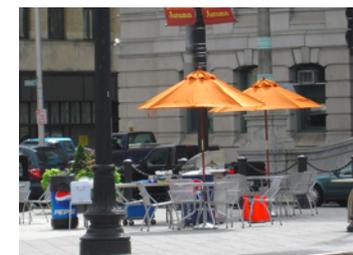
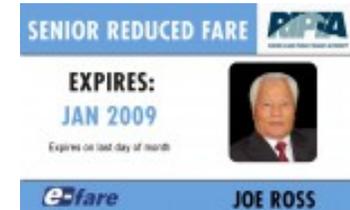
Stakeholder Input

- *Plus RIPTA (also a stakeholder!)*
 - Chairman of the Board
 - Chief Executive Officer (CEO)
 - Bus Operators
 - Flex Operators
 - Fixed-Route Supervisors
 - Service Planning Staff



Things RIPTA Does Well

- Provides convenient transit throughout RI, with limited budget resources
- Successfully brings commuters into downtown Providence
- Meets “unfunded mandates” (e.g. administers the RIDE, provides free passes for low-income individuals, etc.)
- Is a responsive partner to many organizations. These efforts have changed attitudes about transit use in RI and ridership has grown over the last decade.
- RIPTA also commended for:
 - Planning initiatives that will bring other benefits to the state
 - Increasing energy efficiency with their new hybrid bus fleet
 - Improving the web page and use of Google Transit
 - Improving the customer environment on buses and at Kennedy Plaza



Comments on Existing Services

- **Provide More Bus Service**
 - *Concerns about overcrowding were expressed more than any other issue.*
 - Need more mid-day and evening service, and on weekends.
- **Design Service with the Customer in mind**
 - Coordinate bus schedules at transfer points to limit waiting time
 - Evenly space buses that operate along the same street
 - Use clock-face scheduling to make it easier to remember schedule
 - Make service faster by overlaying express or skip-stop services on key routes.
 - Don't duplicate commuter rail, but complement it
 - Provide the opportunity to travel between key destinations without having to go through downtown Providence.



Comments on Existing Services

- **Manage Seasonal Demand:**
 - There are seasonal fluctuations in Newport, on the South County beach bus (Route 66) and based on the school calendar
- **Promote Flex Services:**
 - Those aware of Flex services think the program works well. But many stakeholders were unfamiliar with how Flex works.
- **Offer Premium Services:**
 - Customers would likely pay premium fares for faster service on long routes or between key destinations (e.g. express service to Airport).
- **Rural Services:**
 - Use smaller vehicles or consider use of underutilized capacity on RIDE vehicles to transport rural customers.



Unmet Needs/Gaps in Service

- **Newport:** Offer shuttle service between downtown Newport, Bellevue Avenue, and Middletown beaches/hotels during the summer months.
- **Warwick/West Warwick/East Greenwich:** Consider a local circulator serving Route 2 retail, the Interlink, Kent County Hospital, Courthouse, CCRI, New England Tech, business parks and village areas (e.g. Natick, Arctic, downtown East Greenwich).
- **Pawtucket/Blackstone Valley:** Provide better service to So. Attleboro rail and McCoy Stadium; reinstate crosstown service between Pawtucket and Centerville; provide more service to Burrillville.
- **South County:** Provide better service to local destinations; consider needs of Narragansett Tribe in Charlestown; connect Quonset with Wickford commuter rail and other South County destinations.



Transit Hubs

Further focus service around existing and/or new hubs:

- **Kennedy Plaza**

- There are too many people and buses in a small space.
- Move buses through the Plaza faster/decrease hold times
- Reconfigure the Plaza to focus more on transit riders
- Make Kennedy Plaza safer

- **Pawtucket**

- Reconsider the location of the Pawtucket hub, or make hub more compatible with Visitor's Center and Slater Mill activity
- Need to consider new Rapid Bus routing and proposed downtown traffic circulation changes

- **Strengthen Hubs in Woonsocket, Warwick, URI**

- **Develop Maintenance Policies** - cleaning, snow removal



Bus Stops

- There are too many stops; consolidation would speed bus service.
- Bus stops should be located with safety in mind (e.g. far side of intersections, ensure safe zone for pedestrians).
- Bus shelters bring benefits in terms of visibility and ridership comfort.
 - Install attractive shelters at high ridership or high visibility locations.
 - Lamar shelters are an eyesore and poorly maintained. They are rapidly aging and getting worse. (Numerous comments)
 - Allow municipalities more input on where shelters are located.
 - All stops and shelters should be fully accessible.
 - A maintenance policy should be developed for snow and trash removal.



Marketing

- RIPTA needs to be more pro-active job in promoting specific routes and destinations.
 - Provide information about through routes
 - Better promote Flex service (many comments)
- Enhance RIPTA's presence at TF Green Airport.
- Create more positive perceptions about transit and transit riders in RI
- Publicize the benefits of transit (e.g. why people benefit from taking the bus on ozone alert days).
- Do a better job of explaining why the discounted senior/disabled bus pass is important and how it benefits the community at large by providing access to employment, etc.



Fares

- People are pleased with the variety of fare products and recent efforts to make fare products easier to purchase
- Many felt that the “one state: one rate” policy should be reviewed and that premium express services might attract new riders
- Consider premium services at higher fare
 - Transport other riders on RIDE vans in rural areas
 - Offer express service (e.g. to the airport)
- Many questioned the value of the ozone alert free-fare days:
 - Does this program attract many additional riders other than beach-goers?
 - Would it be better to just offer more beach service on hot, ozone alert days?



Other Stakeholder Comments

Accessibility

- The reliability of RIPTA's wheelchair lifts has greatly improved
- RIPTA has failed to implement automated stop announcements according to schedule—this should be a priority
- There is a need for more travel training to encourage able users of paratransit to transition to fixed route services (as appropriate)
- Shelters and bus stops should be accessible

Safety

- Overcrowding is a safety issue
- Focus on safety at bus hubs at night, particularly Kennedy Plaza. (good lighting)
- It is hard to attract new riders when many individuals are just riding around on the bus all day
- There needs to be a greater police presence at Kennedy Plaza



Stakeholder Input on Standards & Goals

- **Identify a Clear Purpose & Mission**

- Develop service goals and standards, then design service to meet these goals.

- **Use Resources Wisely and Effectively**

- Resources should be directed to serve the most people at the least cost.
- Yet recognize that rural routes serve people with limited transportation options.

Note: it will be challenging to meet these competing goals—tradeoffs will be necessary

- **Make Transit More Competitive with the Automobile**

- RIPTA needs to be faster to compete with auto travel and to attract new riders.
- Transit needs to be cost competitive. RI should provide incentives to ride transit (to overcome the relatively low cost of parking and low congestion levels).

- **Consider Smart Growth Concepts and Other Benefits of Transit**

- Focus investments in existing villages and developed areas (e.g. older suburban centers), before bringing new service to new areas.





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Transit Market Review

July 25, 2012

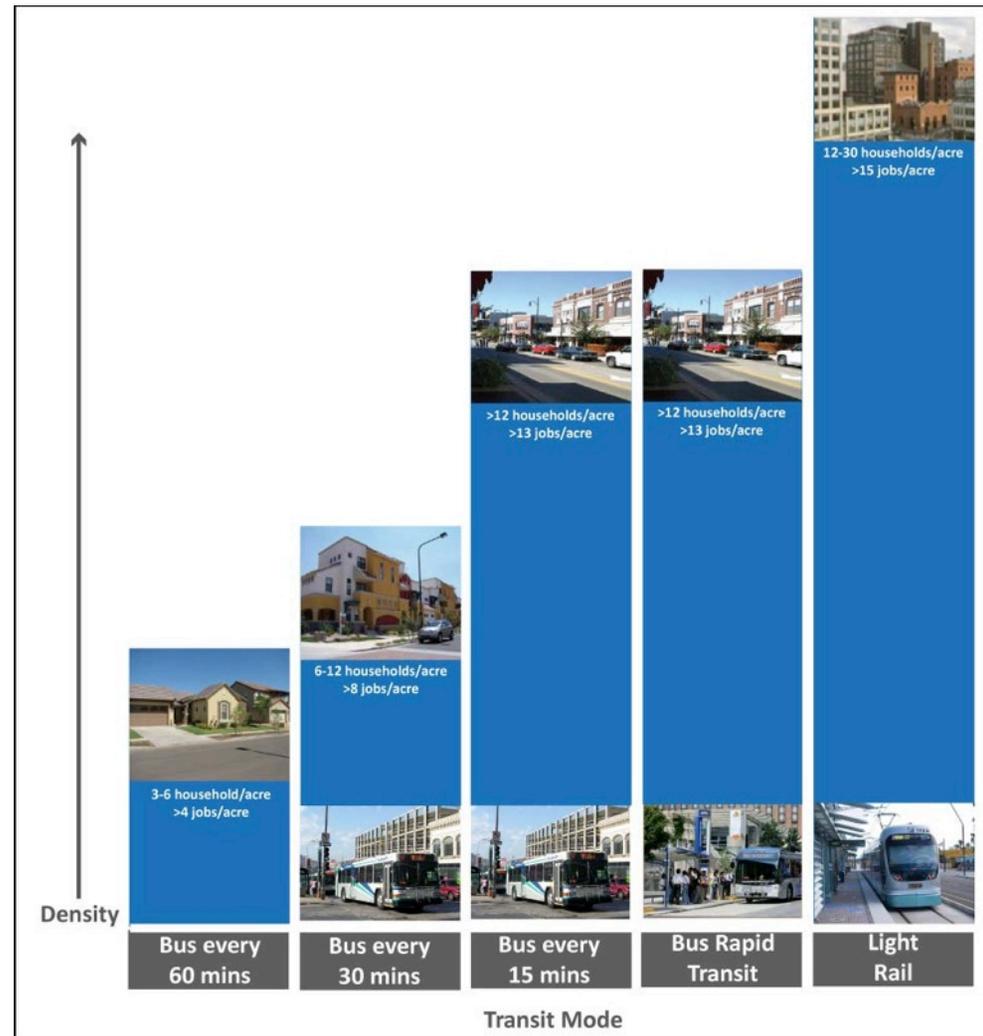
Transit Market Review

- Intended to identify areas and issues that should be examined in detail in subsequent phases of the study
- Consists of five components:
 1. Population and employment patterns
 2. Demographic characteristics
 3. Service to major activity centers
 4. Overall transit demand by area
 5. Regional travel flows



Population and Employment

- More than anything else, the distribution of population and employment influences the demand for transit
- Higher density = higher demand
- Lower density = lower demand



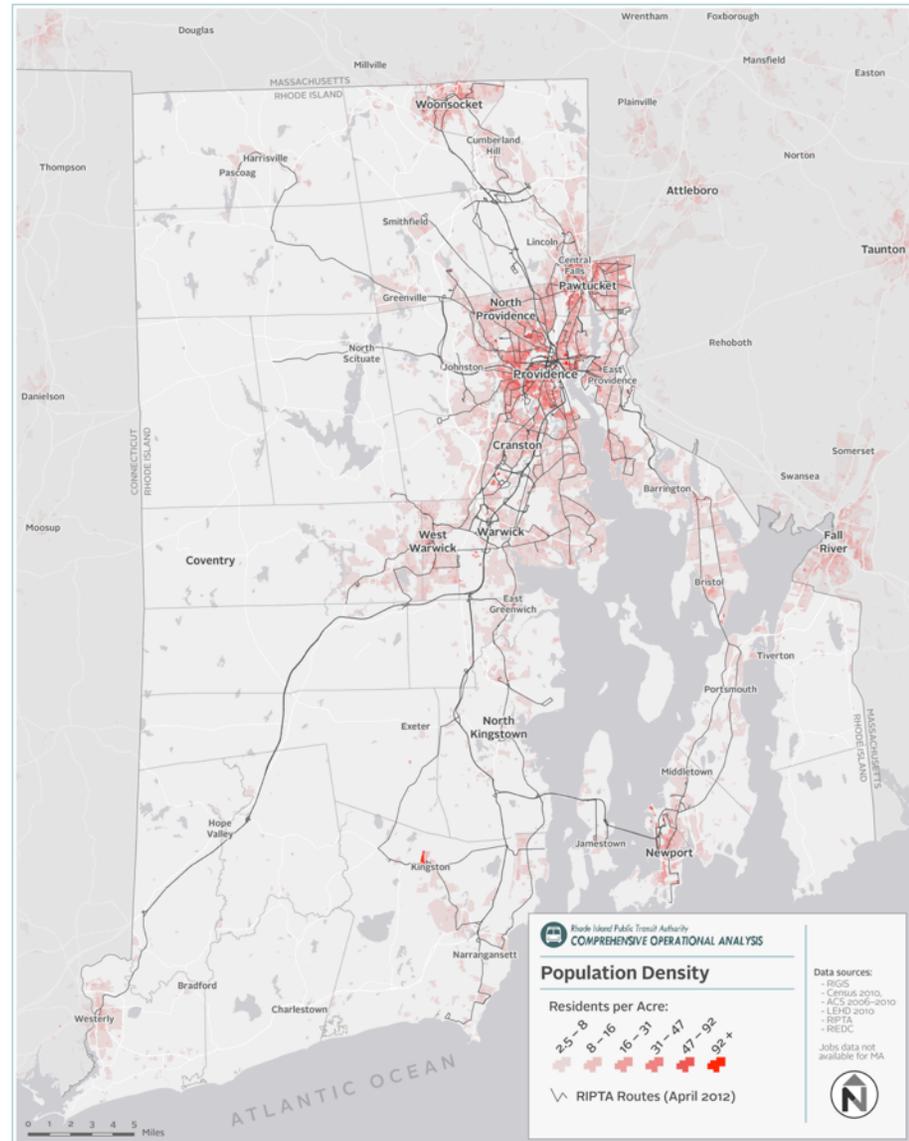
Population and Employment

- In downtown and older more traditional environments:
 - Development is concentrated
 - Transit can provide convenient service
- In many new areas:
 - Development sprawls
 - Which makes it difficult to provide convenient transit



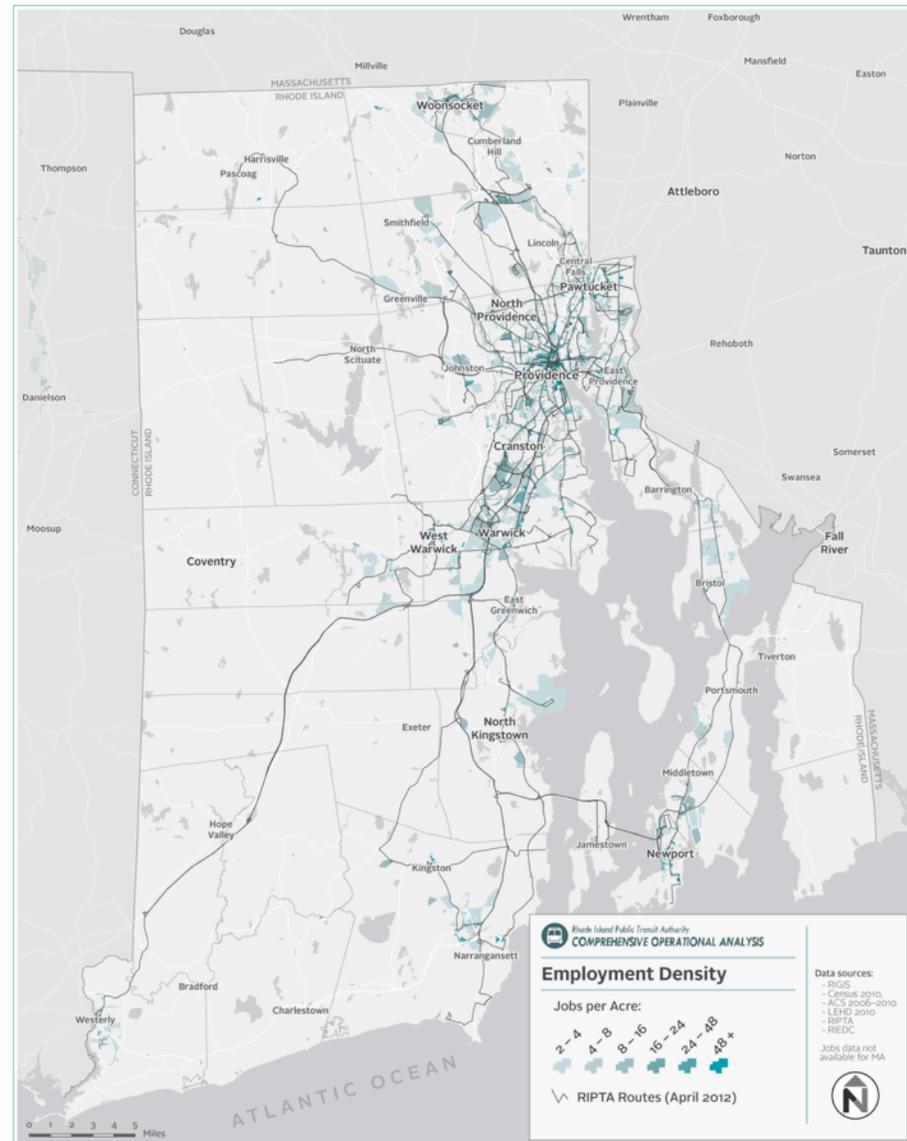
Population Density

- The most transit supportive areas are in the Providence metro area
- The largest concentrations of service are where demand is highest.
- A significant amount of service is also provided to areas where demand is lower.



Employment Density

- The greatest density of jobs are in and along:
 - Providence metro area
 - I-95 corridor
 - I-295
- RIPTA's primary focus is on the metro area jobs
- Other major employment areas are also served, although sometimes only peripherally.



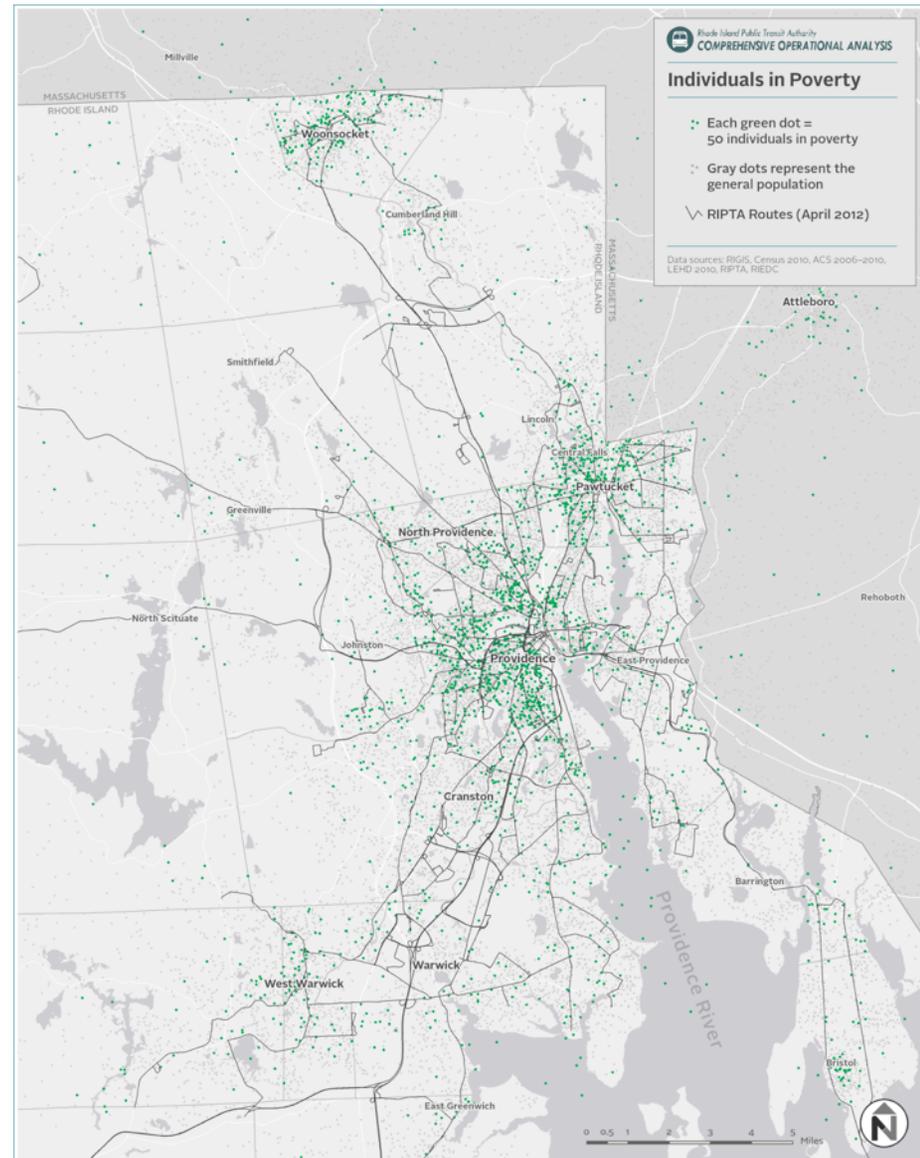
Populations with High Transit Needs

- Certain population groups have higher transit needs than the general population:
 - **Low Income Individuals**, whose members depend on transit for economic reasons
 - **Older Adults**, many have stopped driving or are driving less, and rely on transit to stay independent
 - **Youths**, who have travel needs that are independent of their parents, but are too young to drive
 - **Persons with Disabilities**, who also often depend on transit to get to work and participate in society
 - **Households without Autos**, whose members, either by choice or economic reasons, depend on transit
 - **Minorities**, as many have lower incomes and fewer cars



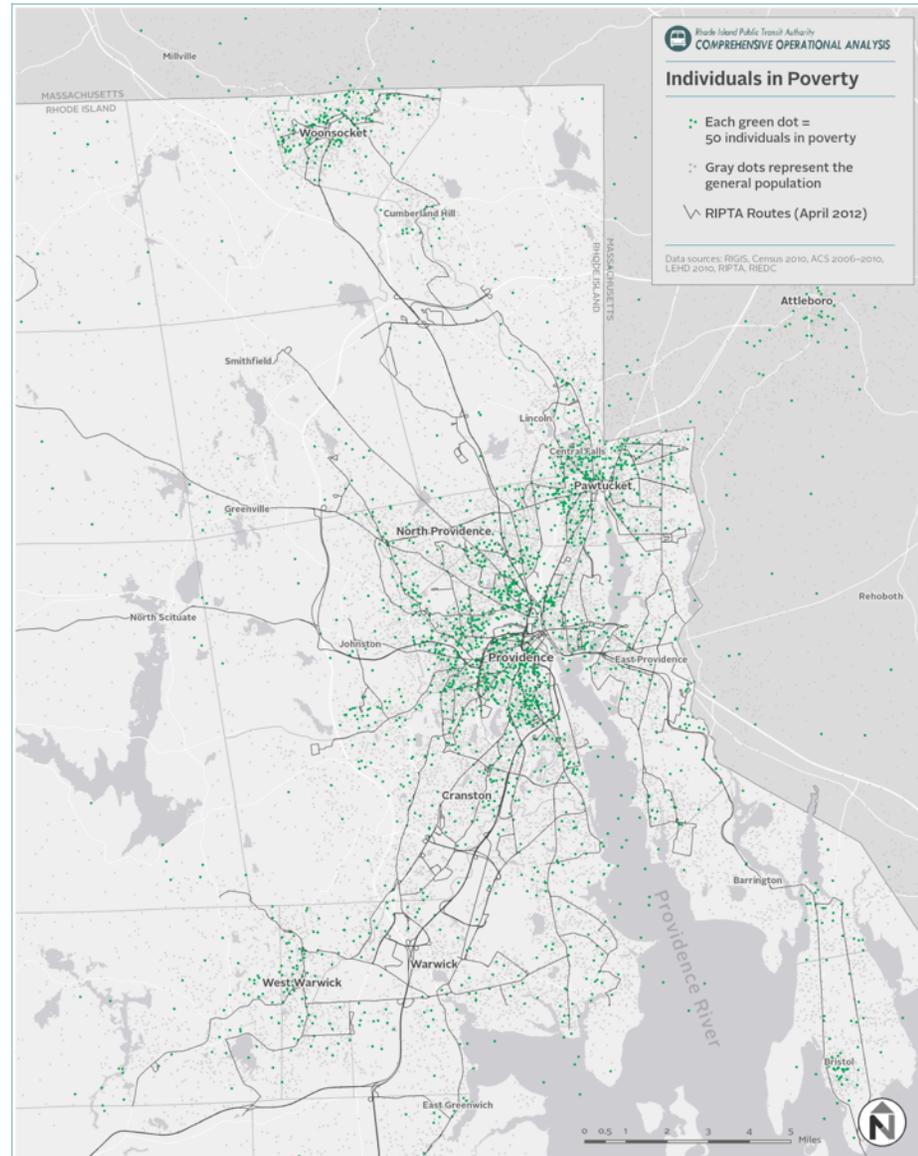
Low Income Residents

- Poverty is most concentrated in four cities:
 - Providence
 - Pawtucket
 - Central Falls
 - Woonsocket



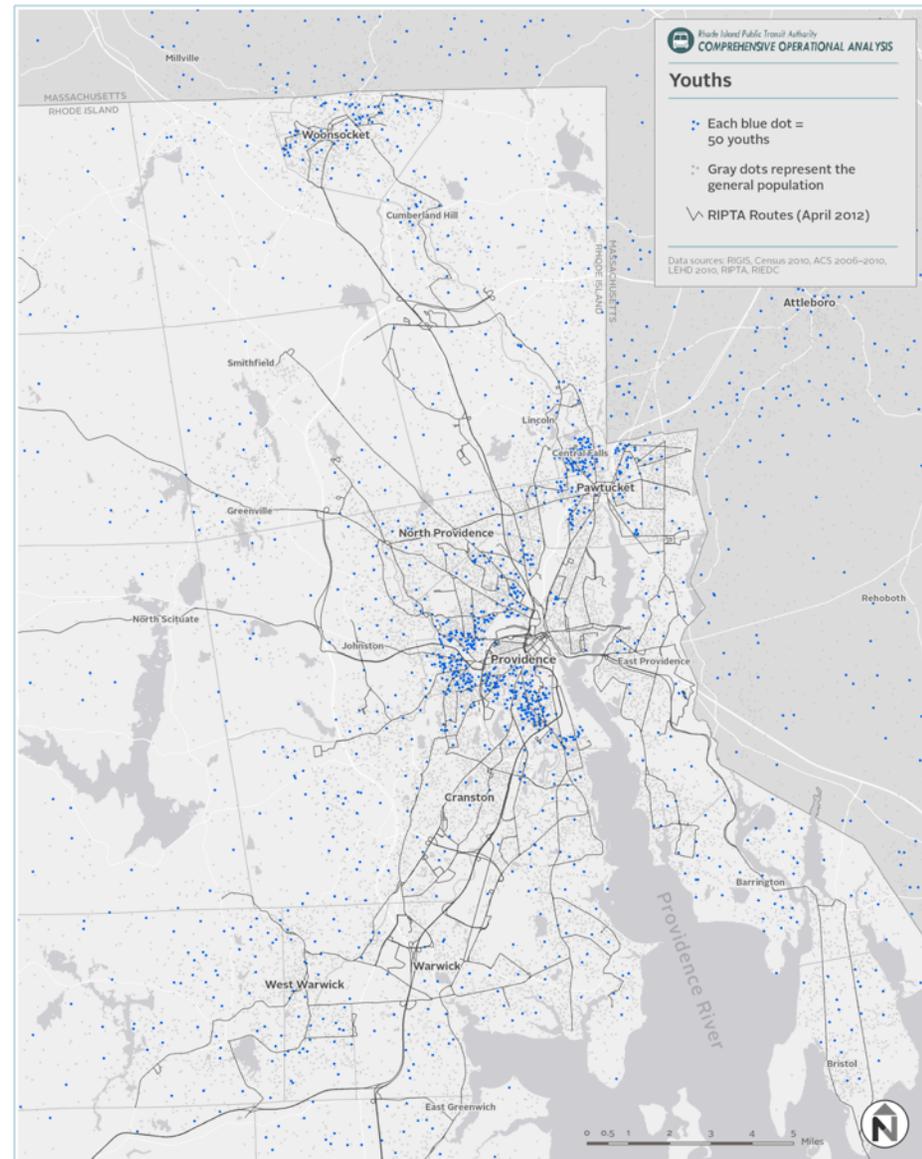
Older Adults

- Are very dispersed throughout the state
- Distribution and density generally track with RI's overall population
- However, Providence and Pawtucket have lower relative concentrations



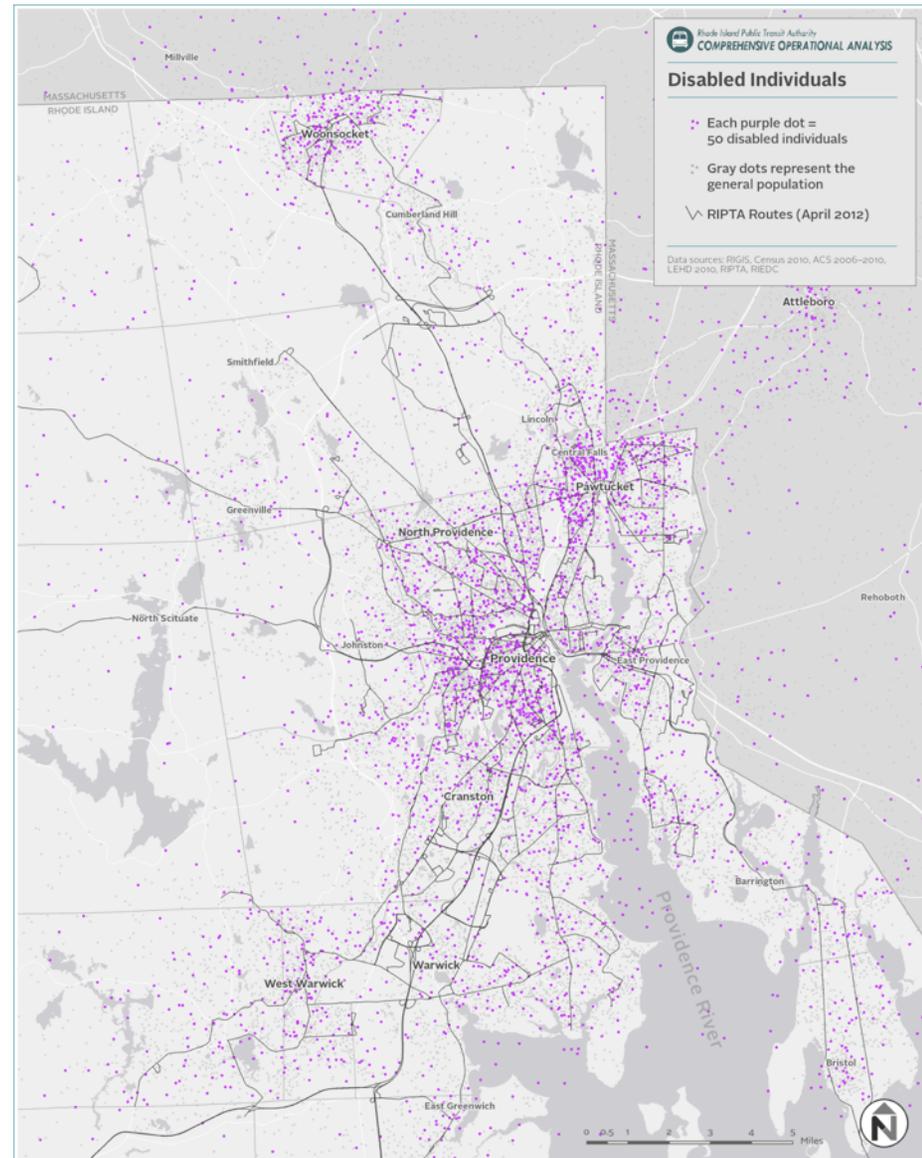
Youths

- Youths are clustered in central cities:
 - Providence
 - Pawtucket
 - Central Falls
 - Woonsocket



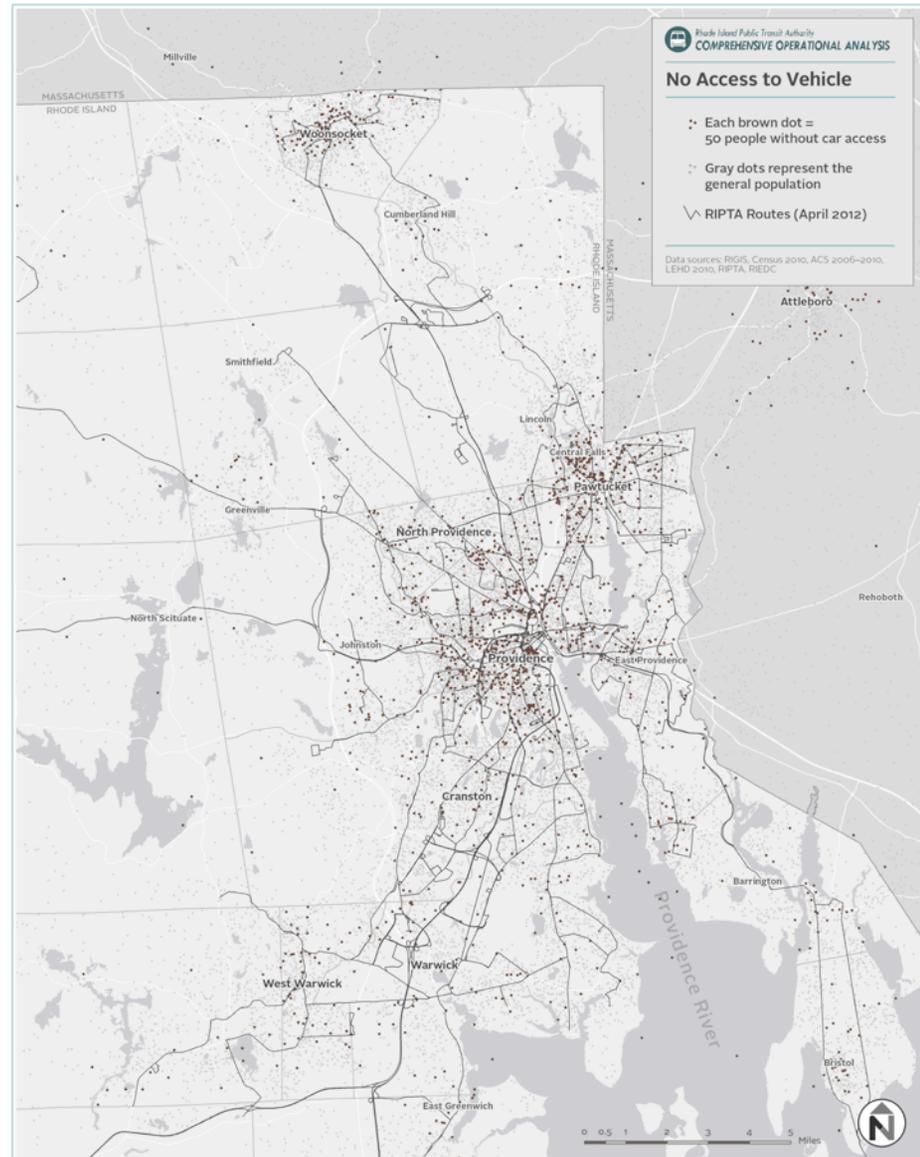
Persons with Disabilities

- Populations generally track with overall population
- Important clusters include:
 - Providence
 - Pawtucket
 - Central Falls
 - Woonsocket
 - East Providence
 - North Providence.



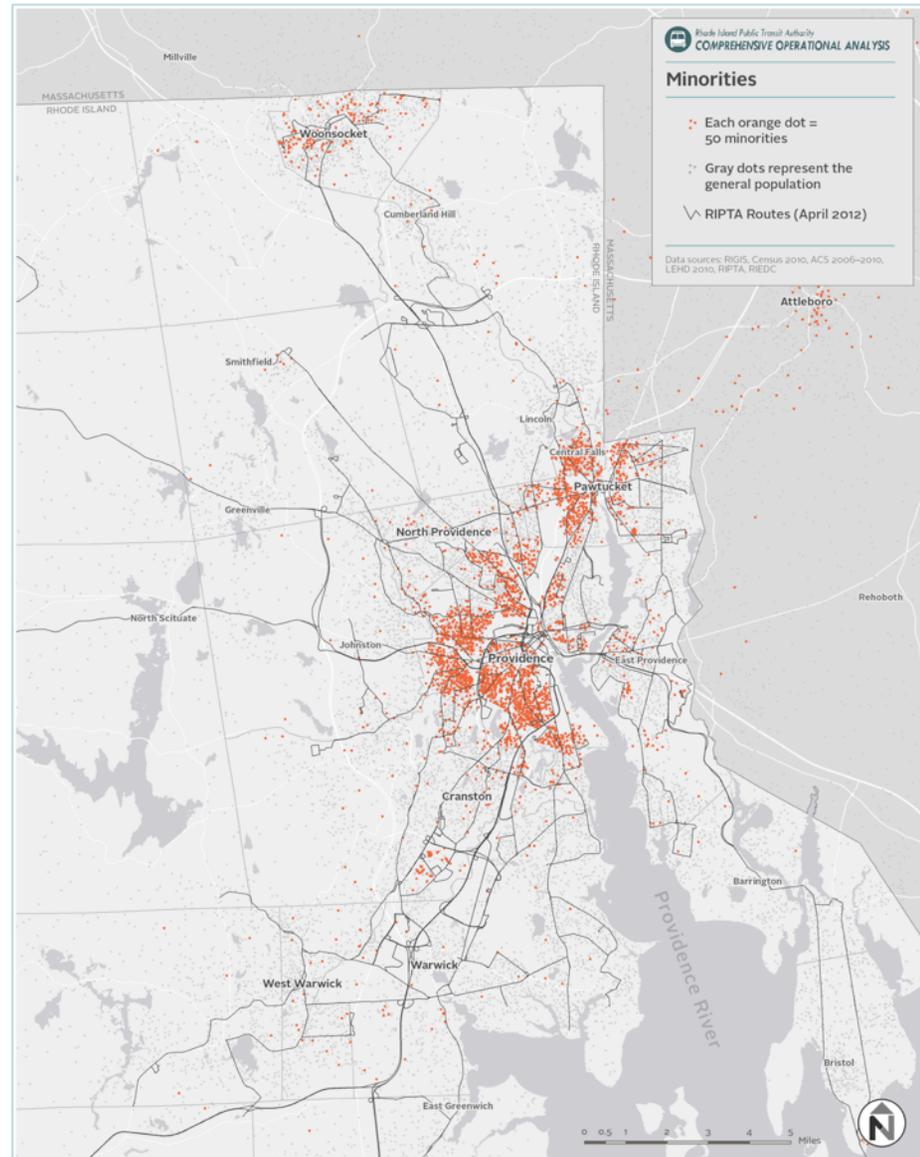
Without Access to Vehicle

- Largest numbers in:
 - Providence
 - Pawtucket
 - Central Fall
 - To lesser extent Woonsocket and Newport
- Same areas as those with large numbers of low income and minority residents



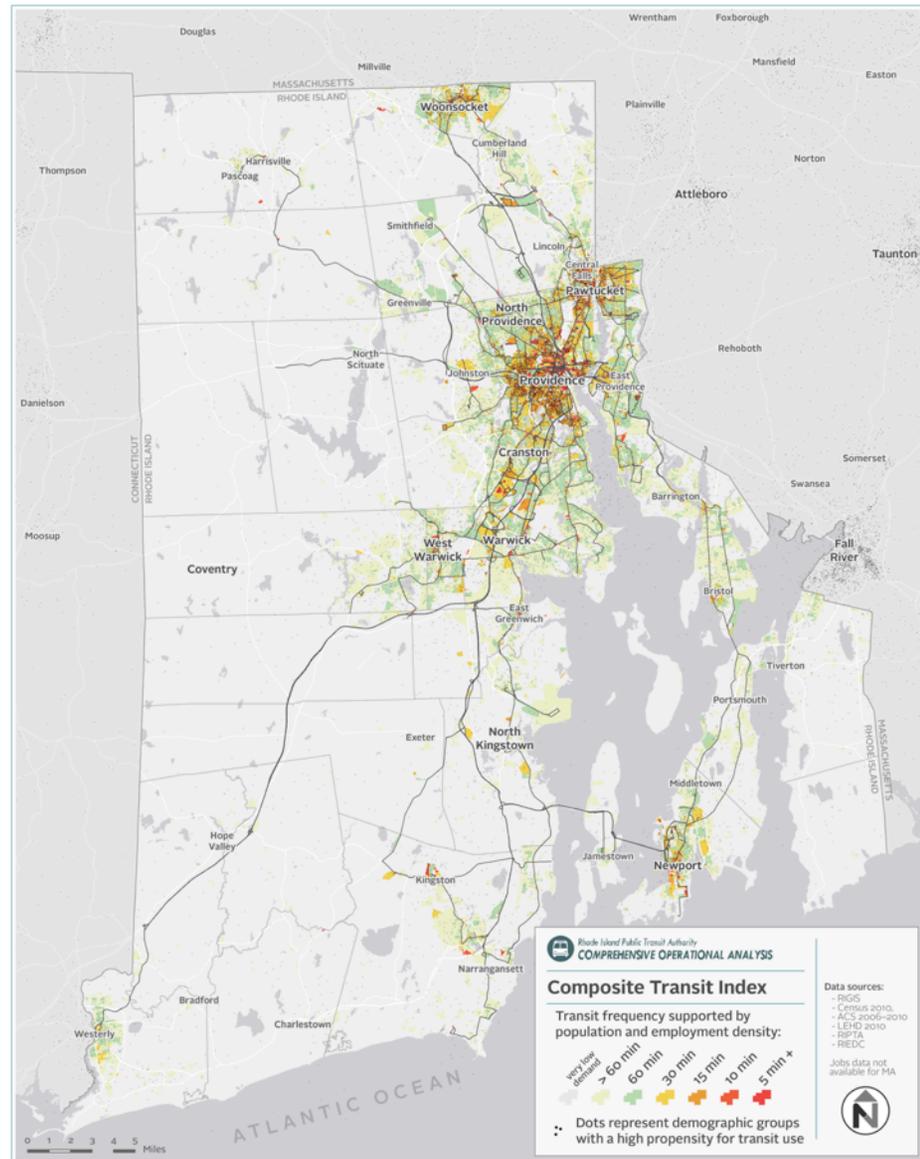
Minorities

- Minority populations heavily clustered in:
 - Providence
 - Pawtucket
 - Central Falls
- Woonsocket, Cranston, East Providence, North Providence, and Newport also have clusters of minority populations
- Other areas are home to very few minority individuals



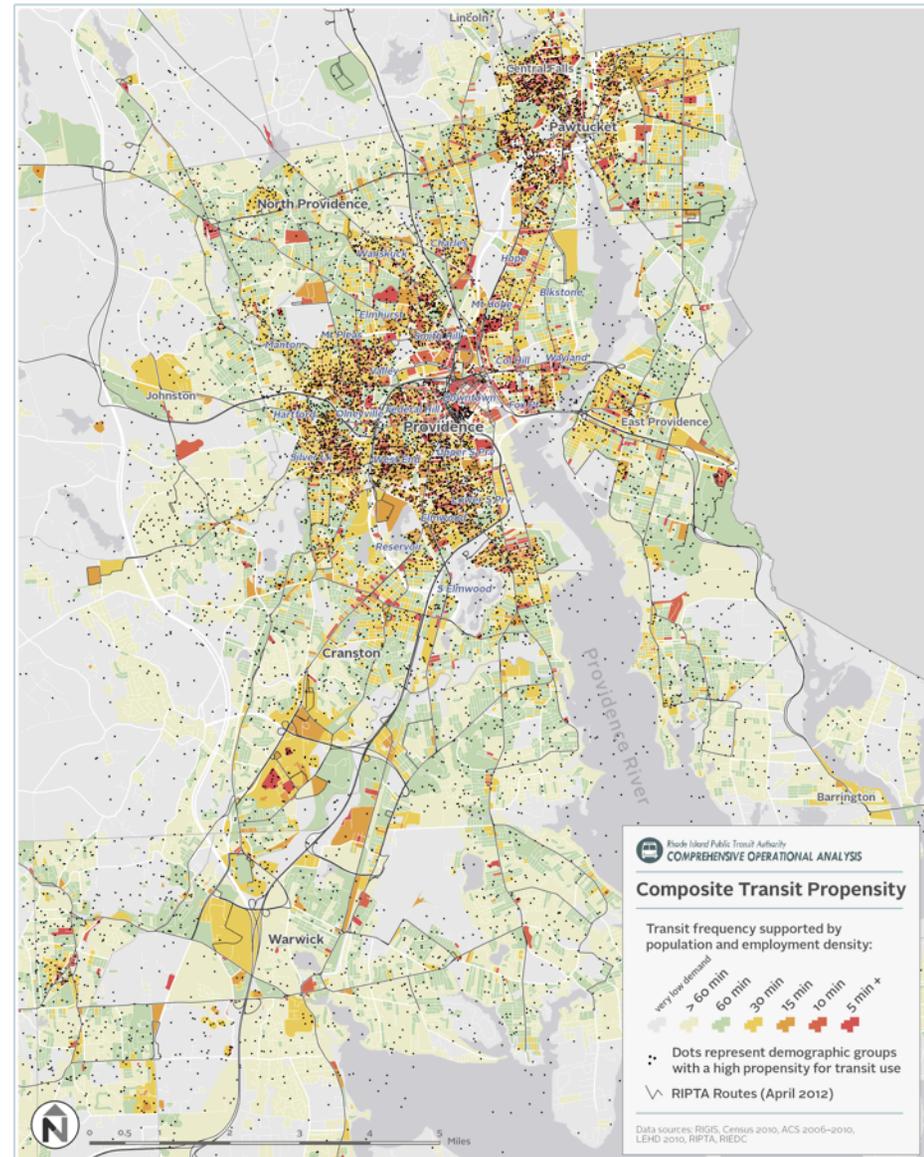
Overall Transit Demand: Statewide

- Considering all factors:
 - Transit demand is highest in Providence metro area.
 - Also high in in Woonsocket and Newport.
 - Beyond these areas, there are only limited pockets with high demand for transit:
 - Cumberland
 - Smithfield
 - Greenville
 - Barrington
 - Bristol
 - Narragansett
 - Westerly



Overall Transit Demand: Metro Area

- Highest demand in the Providence core
- Also high demand in:
 - Pawtucket and Central Falls
 - Warwick and Cranston employment centers
- Areas with the highest transit propensities have extensive service coverage
- Additional service coverage should be examined in areas in Cranston and North Providence



Overall Transit Demand

- Important qualifiers:
 - Ridership on individual routes can vary significantly depending on a number of factors:
 - Physical environment
 - How well service is designed
 - The time and costs for competing alternatives
 - For example:
 - Slower, more circuitous routes will attract fewer riders than faster, more direct routes
 - Routes that serve areas with where it costs to park (i.e., downtown Providence) will carry higher ridership than routes where parking is free
 - Where multiple routes compete with each other, ridership will be lower on individual routes



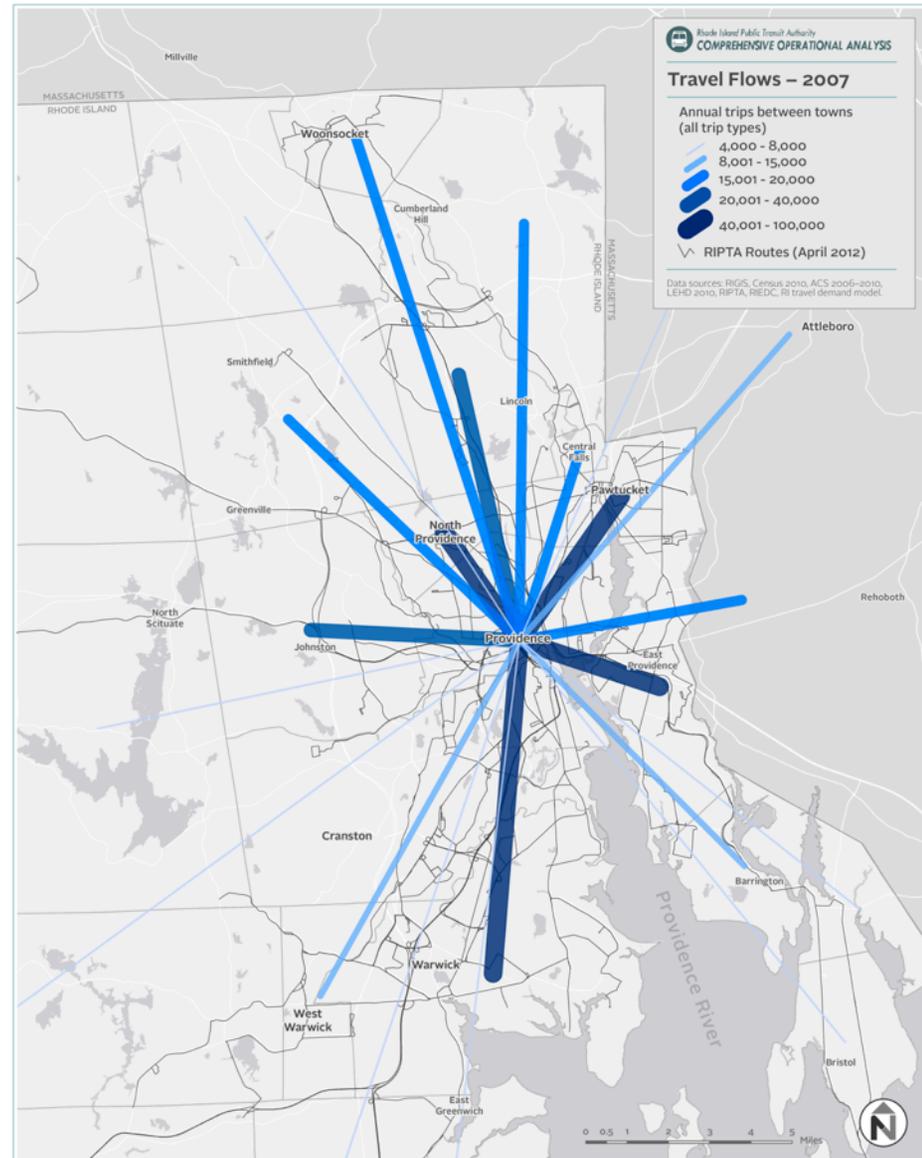
Travel Patterns

- For transit to be effective, it must take people from where they are to where they want to go.
- In Rhode Island, the largest volumes of trips have historically been to and from Providence, and this continues to be the case today.
- However, recent growth has been outward, and thus there is increasing demand for service to other places.



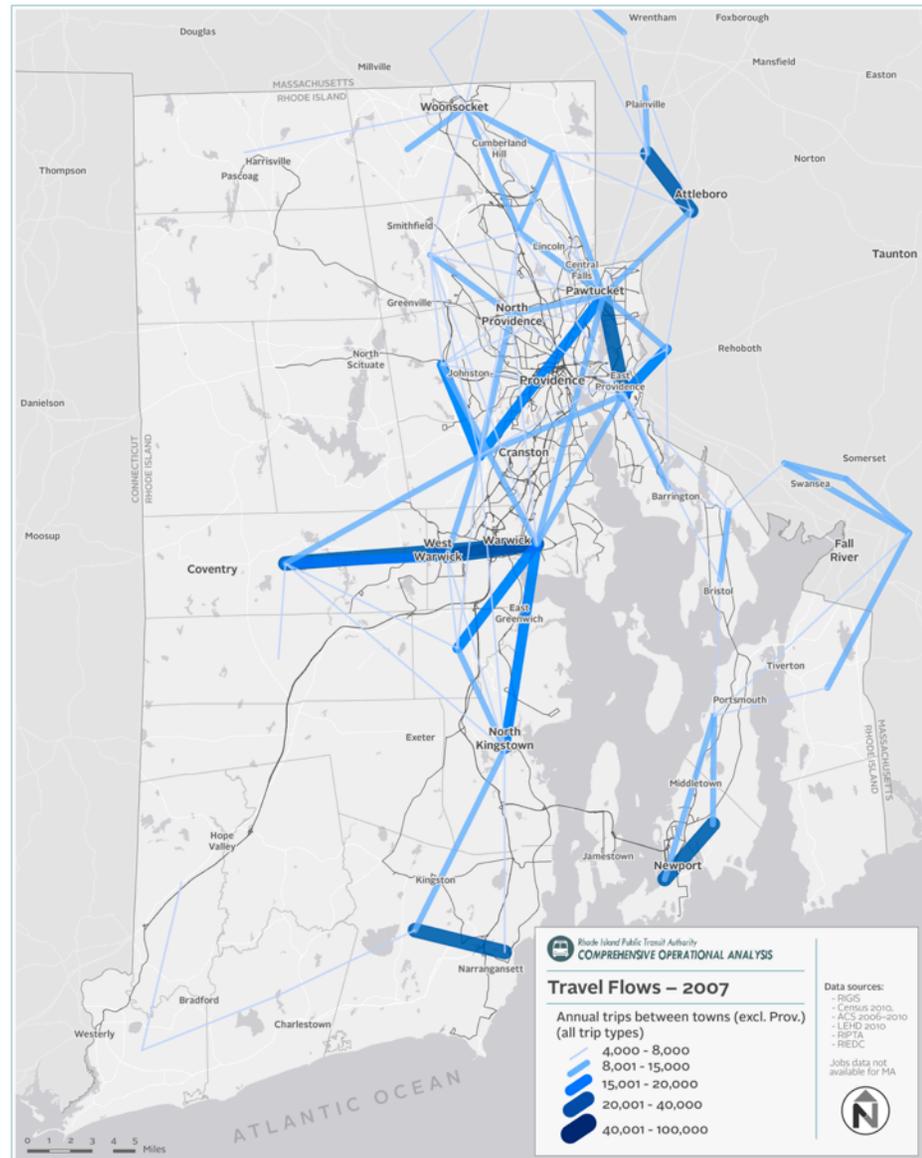
Travel to/from Providence

- Providence remains the focal point of the highest volumes of trips.
- The highest volume travel flows are between Providence and:
 - Pawtucket
 - North Providence
 - East Providence
 - Warwick
- All high volume inter-community flows are served by either all day or commuter-oriented service



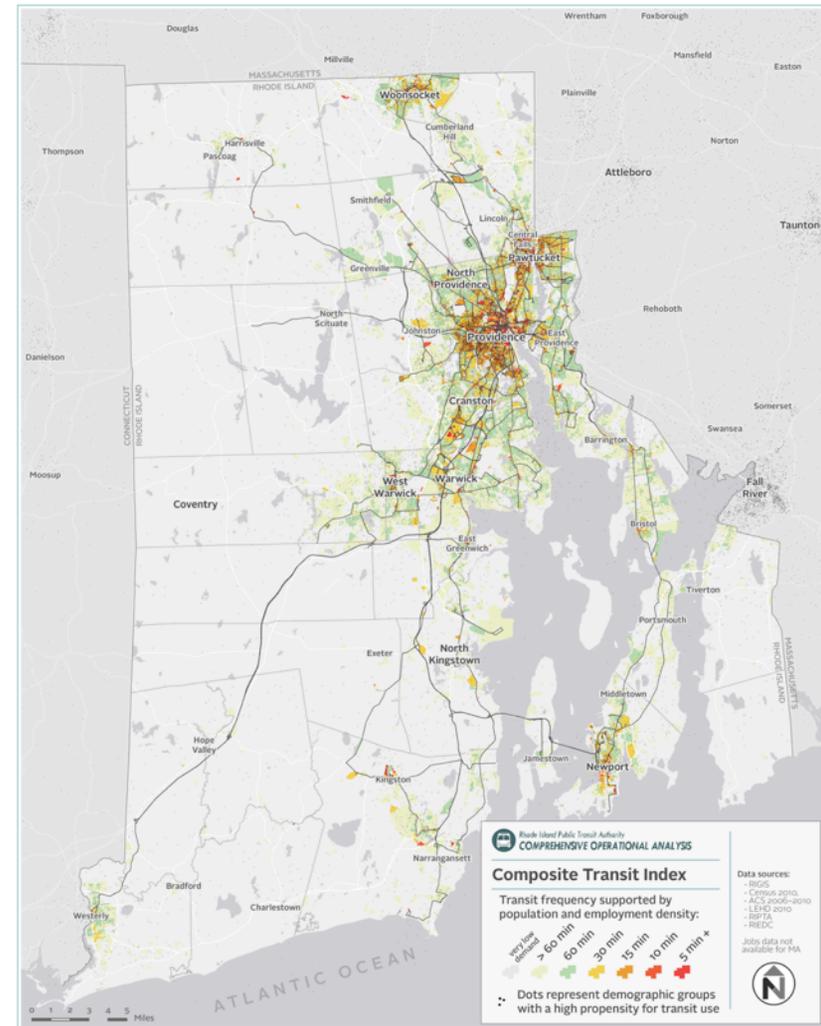
Travel to/from Other Areas

- Travel volumes between other locations are lower but still significant:
 - Narragansett and South Kingston
 - Newport and Middletown
 - Pawtucket and East Providence
 - Coventry and Warwick
 - West Warwick and Warwick
 - Johnston – Cranston
- Most of these trip flows are fairly well served by RIPTA



Conclusions

- The strongest transit demand is largely concentrated in Providence metro area:
 - Particularly Providence, Pawtucket, and Central Falls
 - Also strong demand in North Providence, Cranston, Warwick, West Warwick, Barrington, and Bristol
- In outlying communities, strong demand in Woonsocket and Newport



Conclusions

- Overall, RIPTA's route network is generally well-matched with demand:
 - Particularly service to/from Providence
 - Although less so to other areas
- Opportunities for service to some new areas, and better service between some communities include:
 - A Warwick transit hub (similar to Pawtucket) to provide strong ties between Warwick and Providence and facilitate local travel
 - Additional service coverage in Cranston and North Providence
 - Additional fixed-route service in Woonsocket
 - Service to the southern half of the I-295 corridor, particularly the south half in Smithfield, Johnston, Cranston, and West Warwick
 - New service to emerging areas such as Quonset





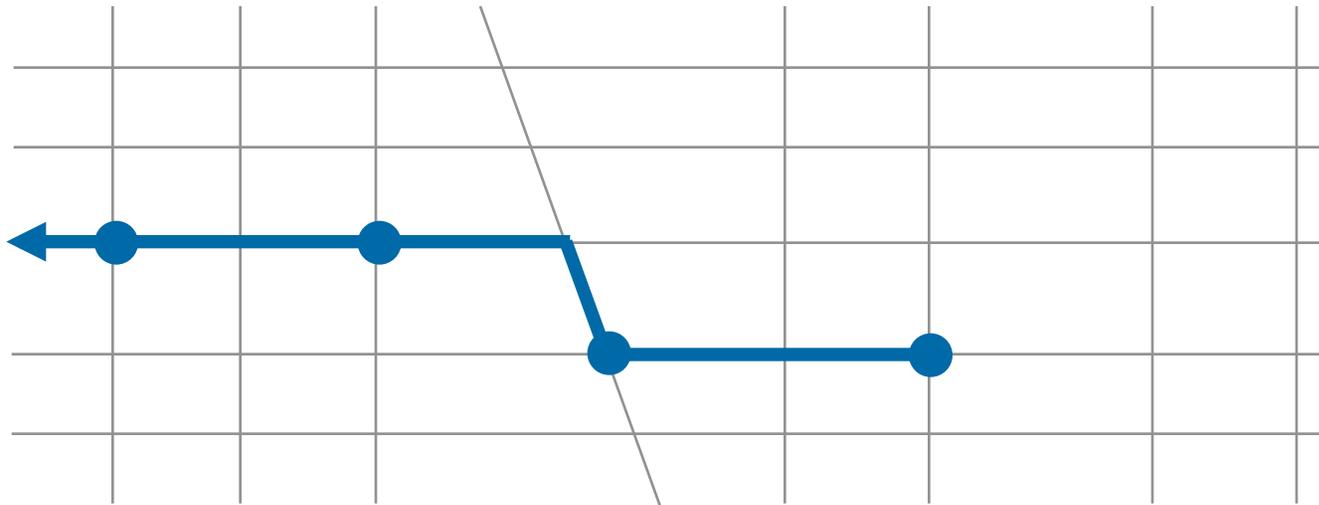
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Making Service Less Productive

A Transit Parable

A Transit Parable: The Evolution of a Bus Route

In the beginning, there was a well designed route that was direct, had well spaced stops, and performed well...



Ridership, Costs, and Productivity:

- Peak period ridership = 500
- Cycle time = 60 mins
- Peak Headway = 10 mins
- Buses = $60/10 = 6$
- Pax/Vehicle Hour = 42
- Cost/Pax = \$2.88



The Evolution of a Bus Route

Over time, some passengers asked that stops be added so that they didn't have to walk as far. The transit agency, being responsive, added them.



Impacts:

- Ridership: +3% to 515
- Cycle time: +5 to 65 min
- Buses = +1 to 7
- Pax/Vehicle Hour: 42 to 37
- Cost/Pax: \$2.88 to \$3.26
- Total Cost: +17%



The Evolution of a Bus Route

Next, a new big box store opened on the outskirts of town, and the route was extended to serve it.



Impacts:

- Ridership: +5% to 552
- Cycle time: +10 to 82 min
- Buses = +1 to 9
- Pax/Vehicle Hour: 33 to 31
- Cost/Pax: \$3.66 to \$3.92
- Total Cost: +17%





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Service Design Principles

July 25, 2012

Service Design Principles

- Simple Is Better than Complicated
- A Few Good Choices are Better than Many Mediocre Choices
- Routes Should Serve Well Defined Markets
- There Should be a Hierarchy of Routes to Service Different Markets. For example:
 - BRT/Rapid Bus
 - Urban Radial
 - Urban Crosstown
 - Suburban Local
 - Express
 - Lifeline
- Major Transit Routes Should Operate Along Arterials
- Transit Service Should be Focused Around Landmarks



Service Design Principles

- Routes Should be Symmetrical
- Routes Should Operate Along a Direct Path
- Service and Schedules Should be Based on Repeating Patterns
- Services Should be Well Coordinated
- Routes Should Not be Too Long
- Service Levels Should be Set Based on Service Guidelines
- Service Design Should Consider Scheduling Implications



Discussion & Comments



Next Steps / Next Meeting

- **Next Steps** (*to be shared at next TAC meeting*)
 - Overview of Existing RIPTA Services
 - Individual Route Evaluations
 - Customer Surveys / Non-Customer Surveys

- **Next Meeting**
 - Anticipated for end of September

