



## **Future of Transit – Managing Mobility**

***Brad Thoburn***

***Vice President, Planning, Development and Innovation***



# State of the Industry

- Growth in shared mobility
- Disruptive technologies
- Transit ridership declining nationwide
- Future integration of **autonomous** technology with **shared mobility** will **accelerate disruption**



**“When the speed of change  
outside the organization  
exceeds the speed of change  
within...**

**The end is in sight!”**

*- Jack Welch, CEO,  
General Electric*

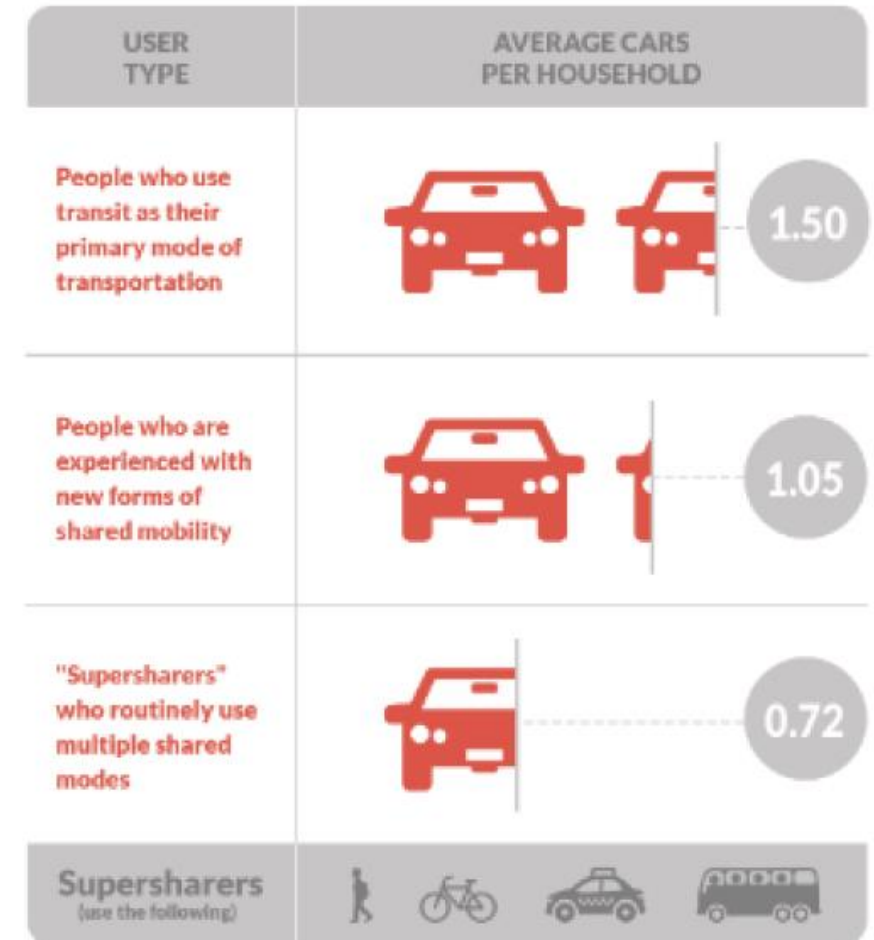


# Shared Mobility and Public Transit Survey

(TCRP 188/Feigon and Murphy 2016)

## Key Findings:

- Shared modes largely **complement public transit**, enhancing urban mobility
- Because shared modes are expected to continue growing in significance, public entities are encouraged to **identify opportunities to engage** with them to ensure that benefits are widely and equitably shared





# Scenario Planning Charrette

- **Participants:** JTA, UF, HDR, FTA, NFTPO, FDOT, City Planning, RTC, Jax Chamber, and Private
- **Focus:** Role of transit agencies in future mobility ecosystem
- **Two separate scenario sessions:**
  - Level of transit, AV and shared mobility integration
  - Rates of adoption for AV and shared mobility



# Scenario Planning Charrette

## Scenario Session #1

- Level of transit, AV and shared mobility integration:
  - Smartly integrated
  - Business as usual
  - Insignificant player
- Scenario drivers
- Consequences of each





# Scenario Planning Charrette

	Smartly Integrated	Business As Usual	Insignificant Player
Role	Regional Mobility Manager	Regional Transit Provider	Localized Transit Provider
Target Markets for Service	<b>Choice Riders</b> and Mobility Disadvantaged	Some choice riders but <b>mostly mobility disadvantaged</b>	<b>Mobility disadvantaged</b> and/or travelers along selected high volume corridors.
Business model	<b>Provider of infrastructure and IT platform</b>	Provider of infrastructure, some IT platforms for multi-modal connectivity	Provider of infrastructure, some IT platforms for multi-modal connectivity
Infrastructure and Service	<b>Smart/autonomous buses (possibly multiple sizes)</b> and possibly fixed guideway transit. Extensive V-V, V-I, and V-X connectivity. Regional coverage	Traditional buses and/or "smart" buses and fixed guideway transit, <b>some level</b> of V-V, V-I and V-X connectivity. Regional Coverage	Traditional buses and/or "smart" buses or just fixed guideway transit, some level of V-V, V-I and V-X connectivity. <b>Limited Coverage</b>
Relationships to other modes	<b>Complemented by shared and owned AVs</b> (first mile / last mile solution), seamless inter-modal transitions, maintains competitive edge in certain sectors of travel	<b>Competing for market</b> with shared and owned AVs (or human-driven vehicles), Some level of inter-modal connectivity via technology	<b>Dominated by shared and owned AVs</b>



# Scenario Planning Charrette

## Scenario Session #2

### ➤ High rates of adoption for AV and shared mobility

- Personal autonomous vehicles
- Transit AV
- Private sector shared mobility
- Public sector shared mobility

### ➤ Considered

- User needs and impacts
- Agency impacts
- Deployment goals





# Scenario Planning Charrette

## Session 2 Observations

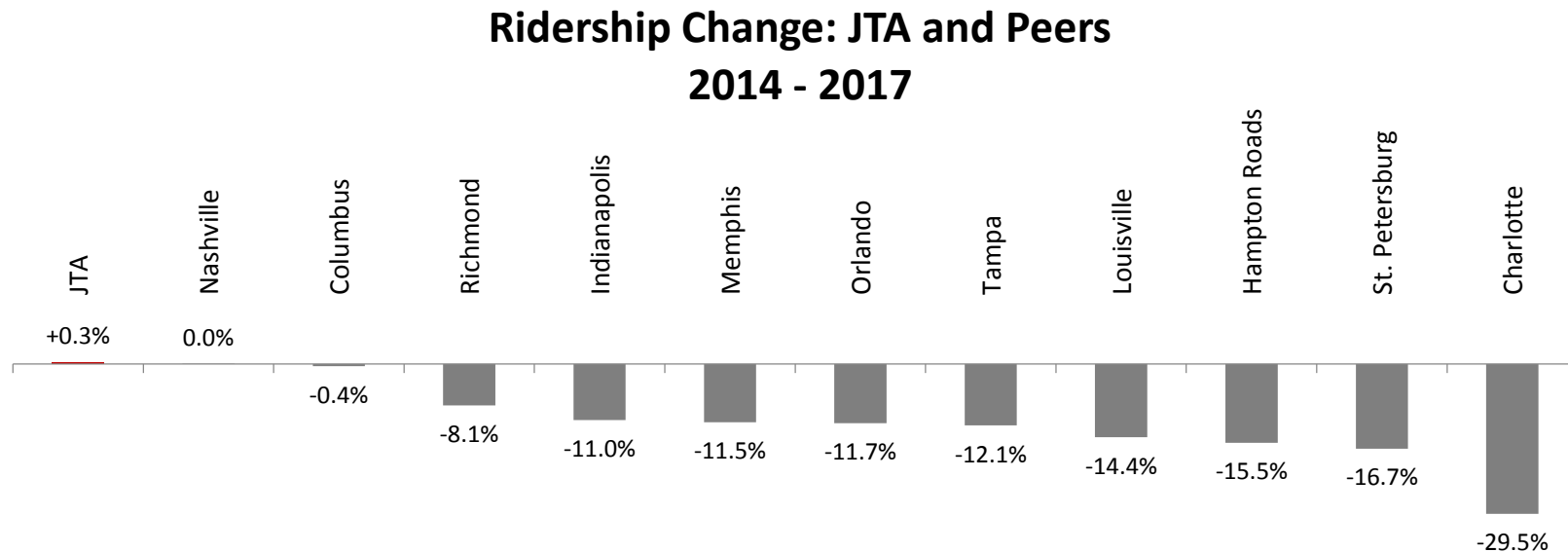
- Personal AV and private sector shared mobility not effective for transit dependent, older adults, and disabled
- First and last mile key for transit AV
- Public sector shared mobility effective for existing transit users and may also result in mode diversion
- Roles of and between public agencies need to be defined
- Public agency roles include:
  - Install and maintain technology infrastructure, set policy and incorporate technology into future planning efforts
  - Implement pilot projects and form partnerships with other agencies and industry leaders



# Ridership Trends

## Peer Agencies

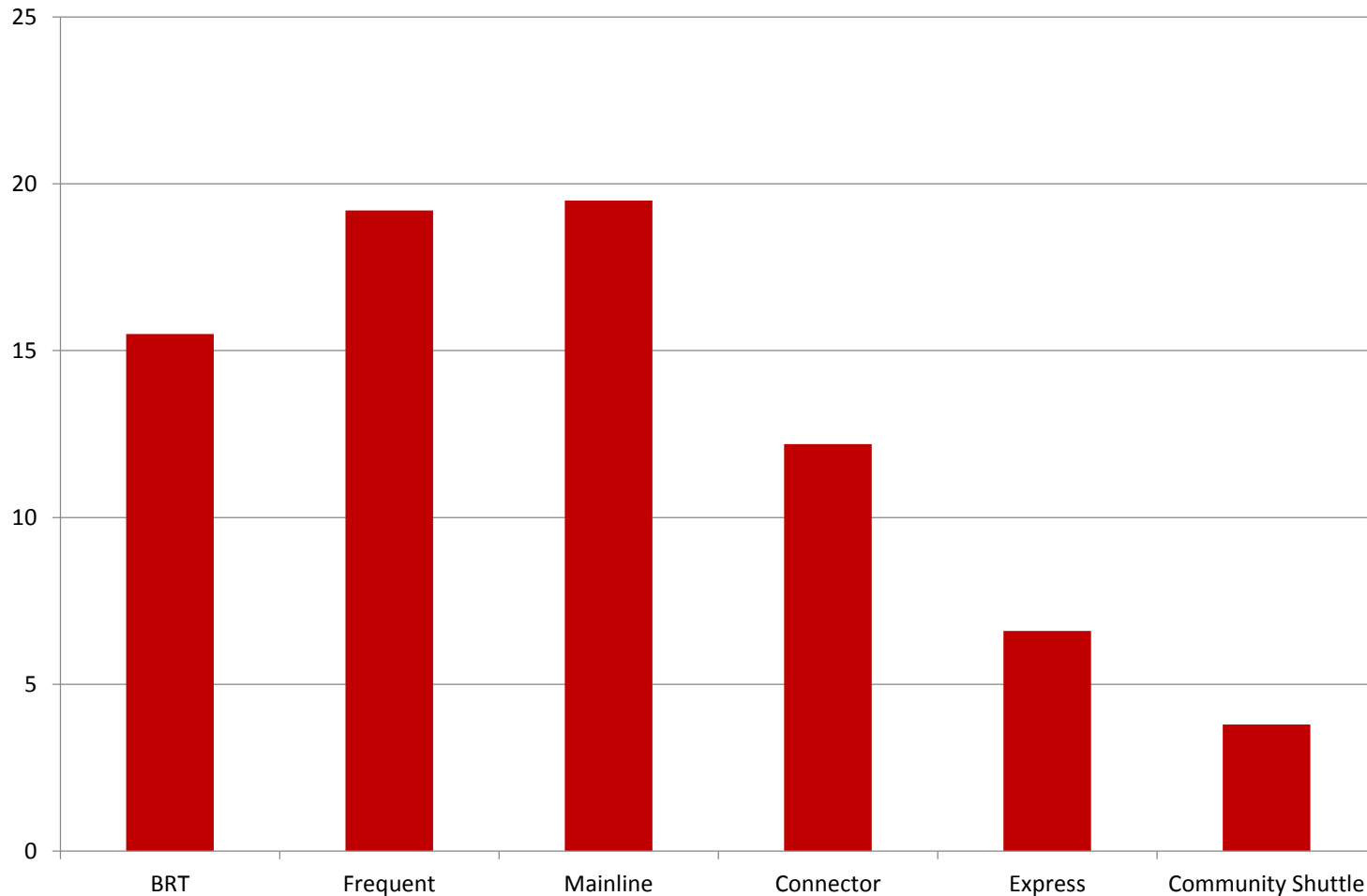
- Ridership trends not unique to JTA
- JTA ridership change over past 3 years better than all peers
- Peer downturn began sooner than JTA
- Large bus systems also show consistent declines



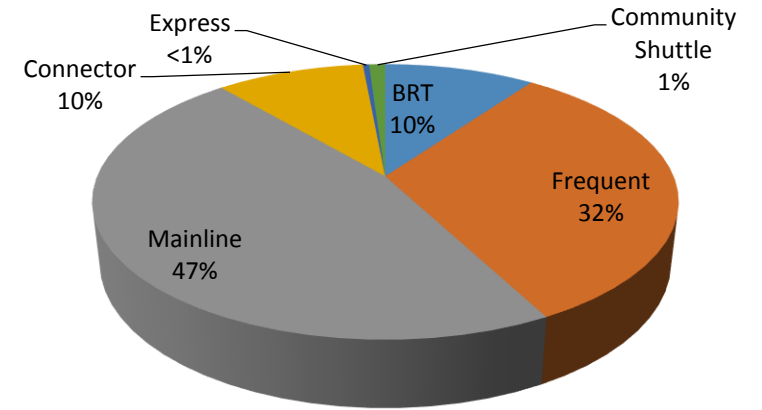


# Performance by Service Type

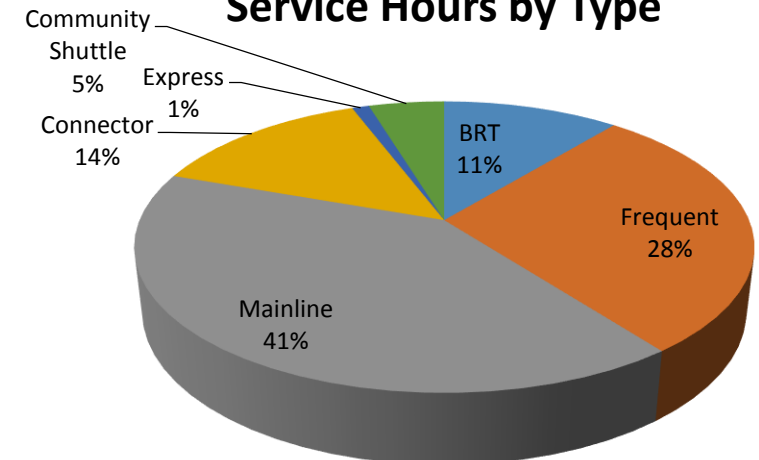
## Passengers per Hour by Service Type



## Total Passengers by Type

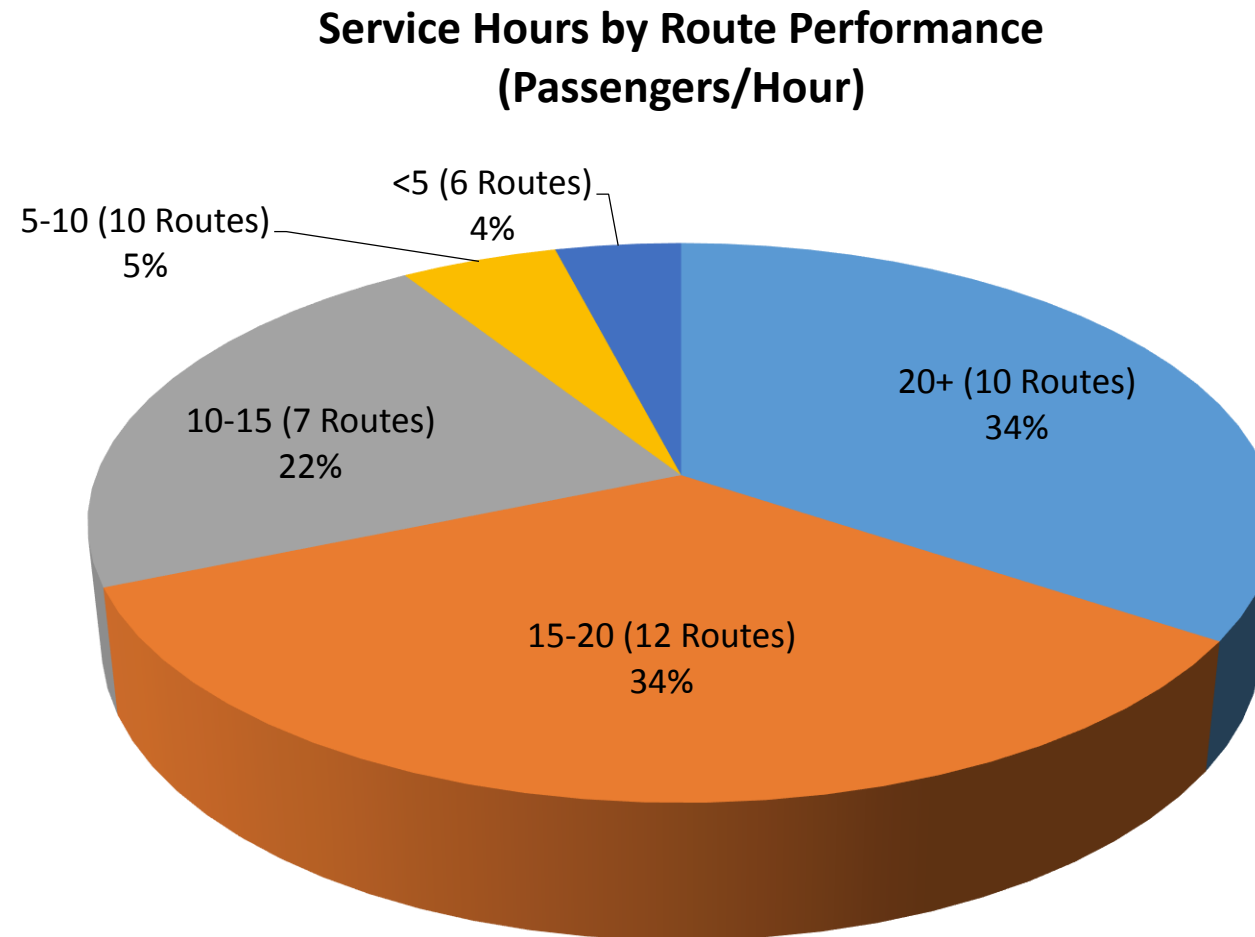


## Service Hours by Type





# Performance by Passenger Hour





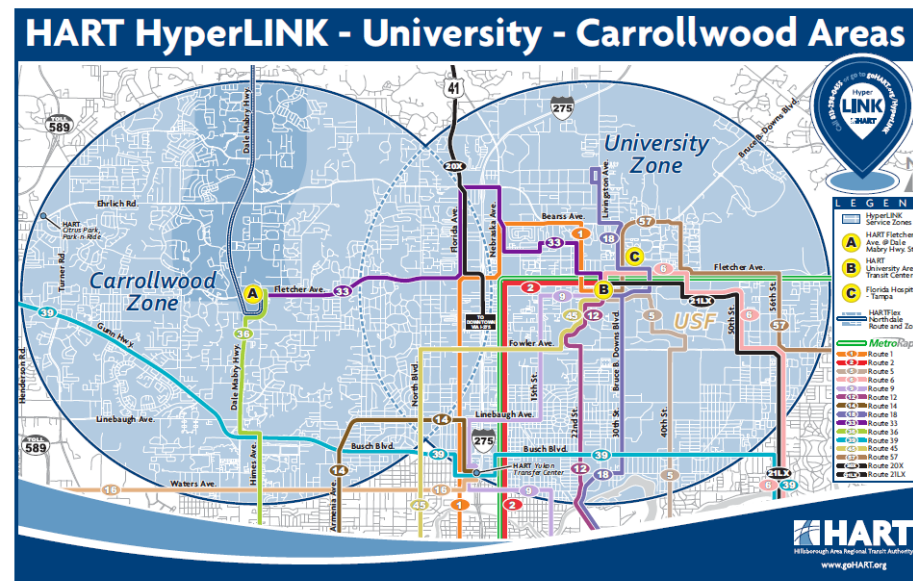
# Mobility Management Approach

- Develop shared mobility partnerships in traditionally low performing areas
  - Low density
  - First and last mile
  - Late night
  - Paratransit
- Create continuum of shared mobility options
  - Transit as backbone
  - Transit provider as mobility manager
- Focus resources where transit works best
  - Grow high frequency network
- Plan for autonomous future



# Florida Peers

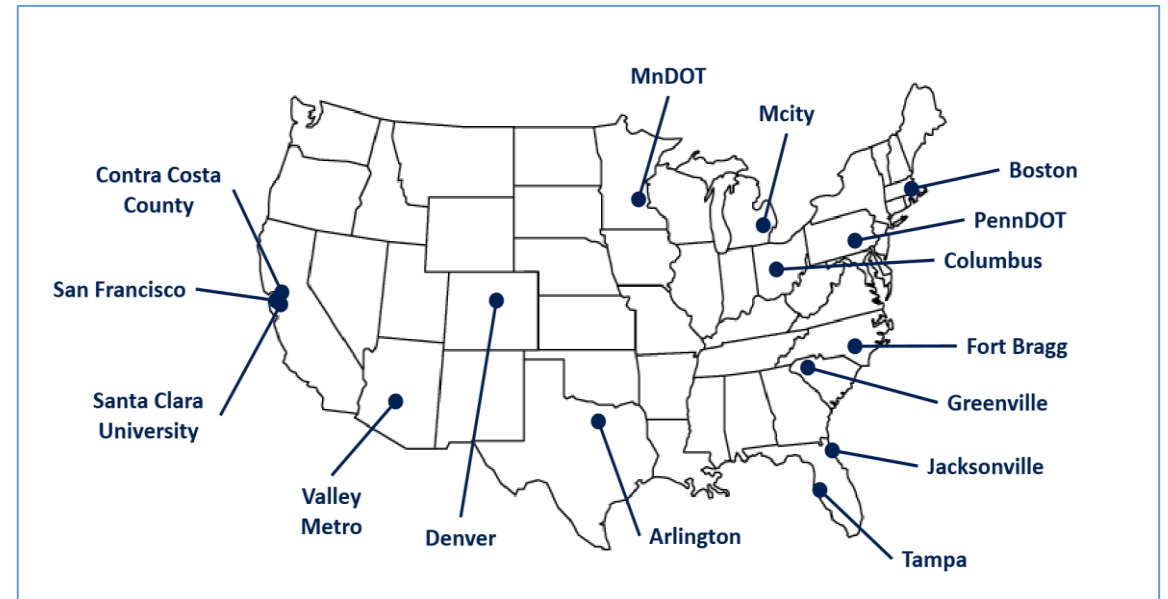
- **Pinellas Suncoast Transit Authority**
  - Sandbox MOD
  - TD Late Shift
  - Direct Connect
- **Hillsborough Area Rapid Transit (HART)**
  - Hyperlink
- **Altamonte Springs**





# AV in Transit

- USDOT/Volpe Low Speed AV Transit Working Group
- Low speed, simple environments
  - Campus or business park, military installation
- International Applications (e.g., PostBus, Rivium, Heathrow)





# JTA Initiatives

## Current:

- Taxi pilot
- Beachside Buggies

## In Development:

- Ultimate Urban Circulator -- U<sup>2</sup>C
- AV test track
- Microtransit pilot
- Paratransit pilots
- Rides to Wellness Grant
- AV and Shared Mobility Plan



# JTA Taxi Pilot

- Replaced low performing Community Shuttle
- Cost per trip:
  - JTA - \$8
  - Customer - \$2
- Significant savings through low utilization
- Can be replicated in other Community Shuttle areas
- Expanding pilot to area with high population of seniors unable to access transit service



# Beachside Buggies

- Season Beaches Trolley eliminated
- Sponsorship more cost effective
- Higher ridership
- Can't count as JTA ridership
- Sponsorship versus contracted service
- Exploring different arrangement for similar service





# Ultimate Urban Circulator (U<sup>2</sup>C)

- Retrofit with next generation autonomous vehicle technology
- Expand system at ground level in dedicated lane and/or mixed traffic
- Explore on-demand or point-to-point service as technology develops
- Applicability to rest of transit system to be determined





# JTA AV Test Track

- Under development
- City, Sports Management Group and Jaguars support
- Can test various vehicles and explore application in pilots
- Gain public acceptance of technology





# AV and Shared Mobility Plan

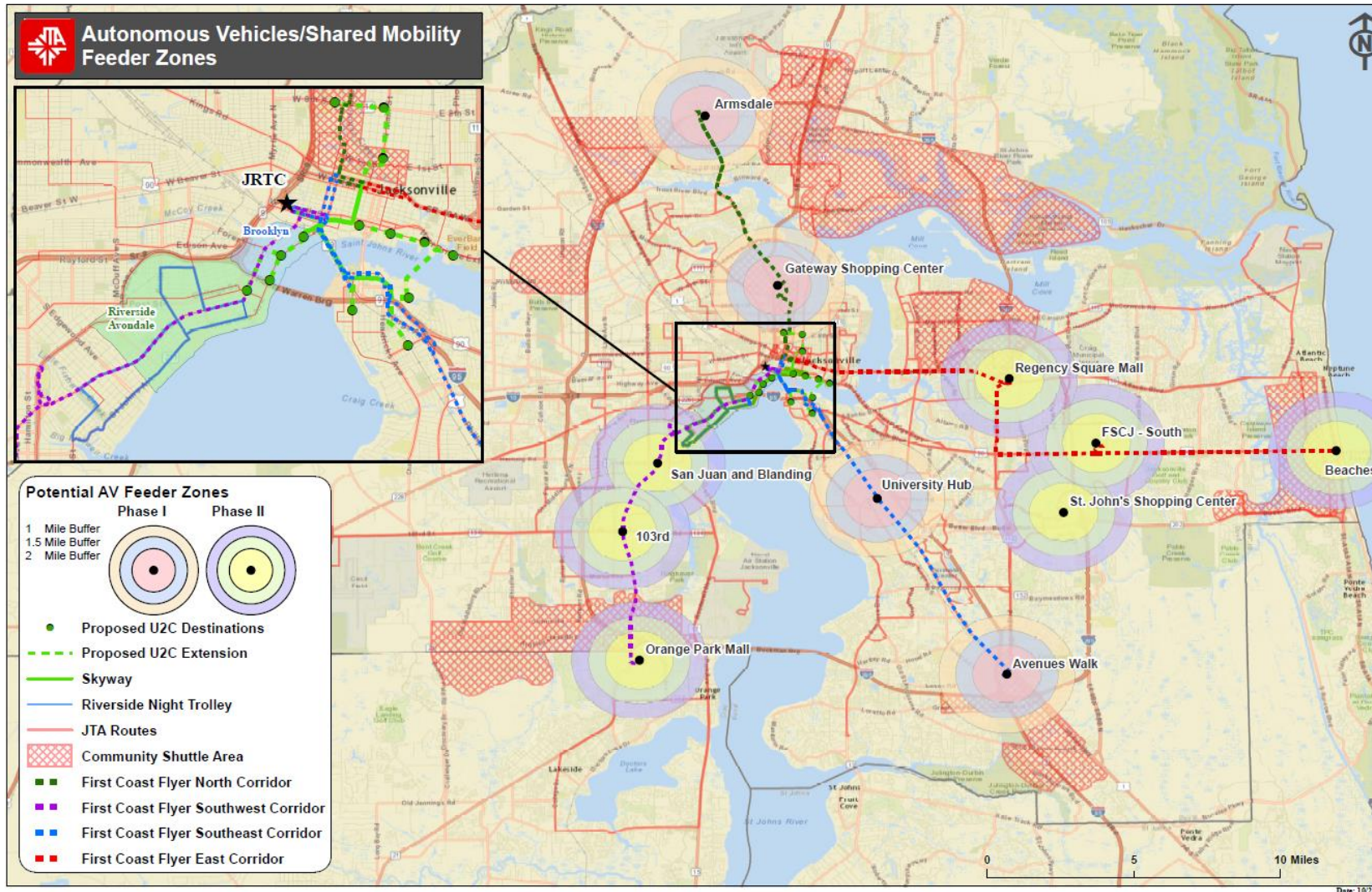
- AV/Shared Mobility Working Group
- Concept of operations for system of future
- Define JTA role as regional mobility manager
- Consider JTA role in car share, bike share, parking management
- Mobility hub concept

## **Objective:**

**Integrated transportation network that strengthens and does not marginalize the role of public transit**

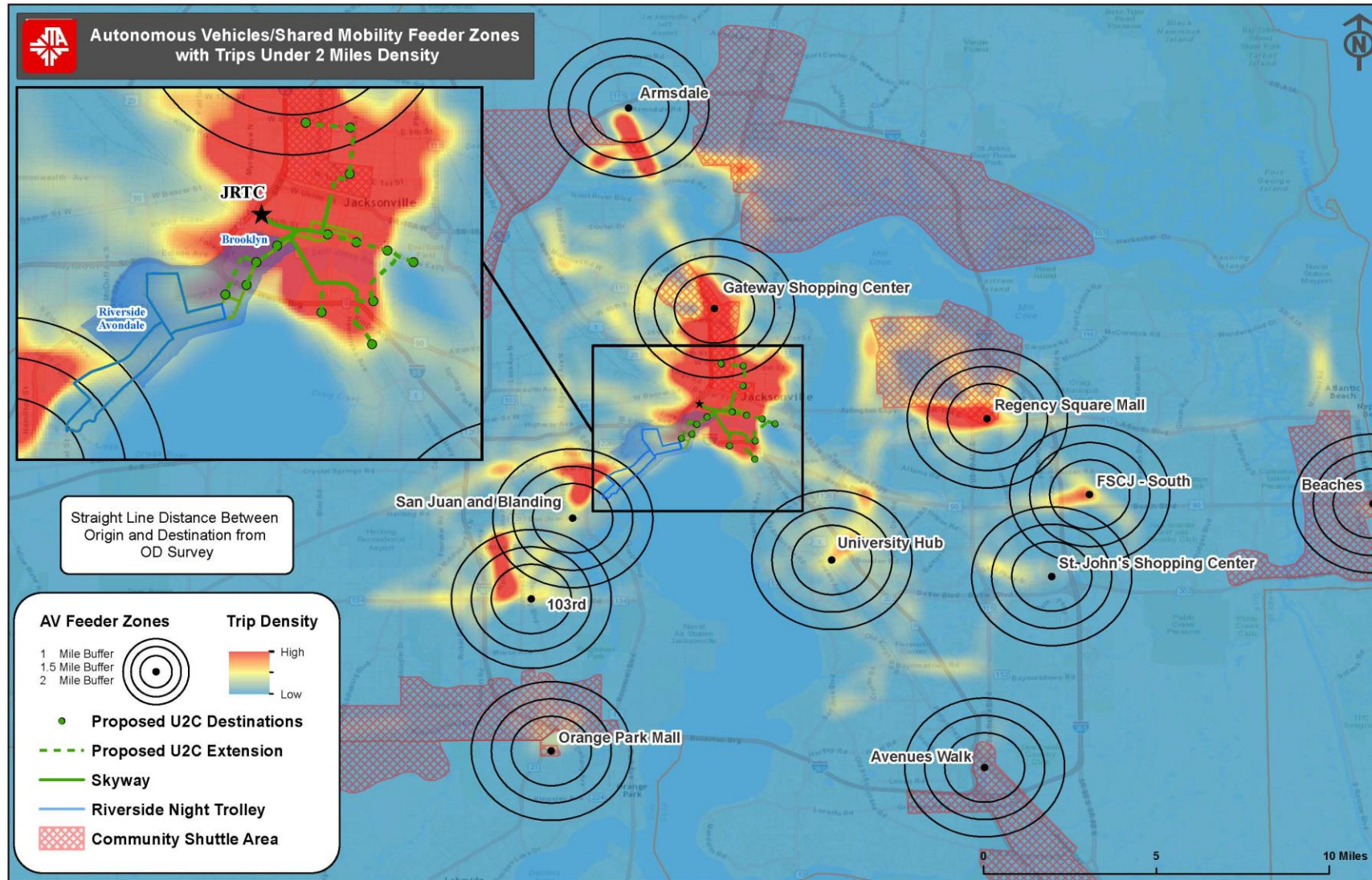


# AV and Shared Mobility Plan



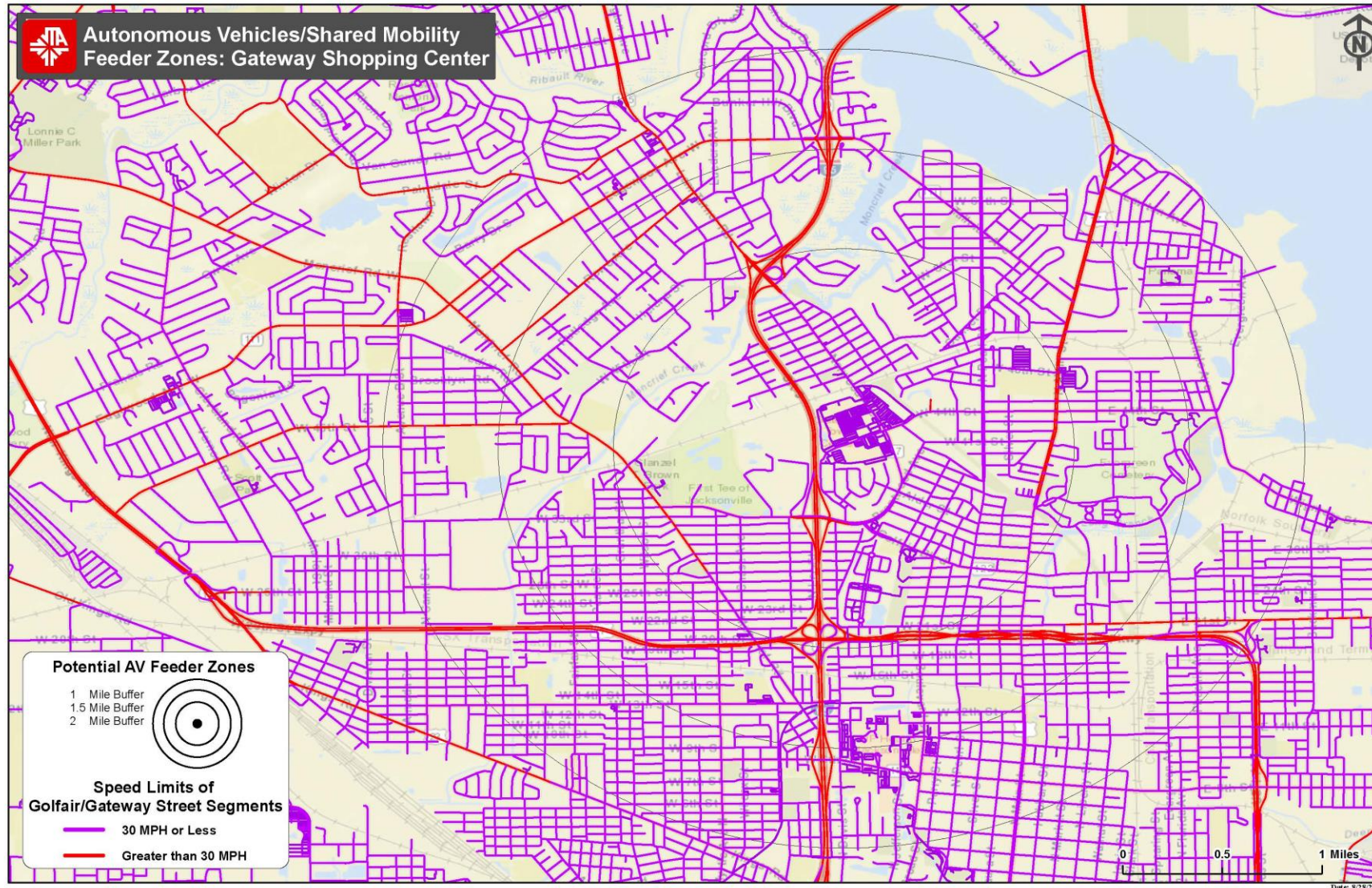


# AV and Shared Mobility Plan





# AV and Shared Mobility Plan





# Questions

