

9:30am

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS

WORKSHOP SUMMARY

Meeting Date: November 28, 2017

Department: Palm Tran

I. EXECUTIVE BRIEF

Title: Palm Tran Route Performance Maximization (RPM) Initiative

Summary: Palm Tran has undertaken the Route Performance Maximization (RPM) initiative that is a comprehensive evaluation of the bus network design that will provide options to discuss efficiencies, usability and coverage of the bus system in Palm Beach County. The RPM, which is being conducted in phases, will culminate with an improved Palm Tran bus system in 2019. Palm Tran kicked off Phase 1 of the RPM in May 2017. In August 2017, after months of data collection and analysis, Palm Tran held an intensive four-day Core Design Workshop. The Core Design Workshop (attended by numerous County departments including Engineering and Public Works; Planning, Zoning & Building; and the MPO) created two distinct Palm Tran route network proposals. The Palm Tran route networks, which will be presented as information items, are as follows:

1. Ridership Network – Using existing resources, this route network prioritizes frequent service in areas of the County that currently have high ridership and/or high ridership potential.
2. Coverage Network – Using existing resources, this route network resembles the current network with minor adjustments to certain routes and segments.

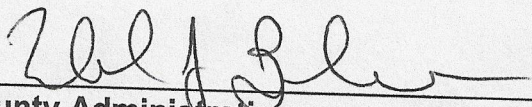
No action is needed as this is an information item only and feedback from the workshop presentation will assist Palm Tran as we begin the next phase of public engagement and comment on system and route revisions.

Background and Policy Issues: Palm Tran has not undergone any major changes to its network of routes in over 20 years. Other transit systems across the country (e.g. Houston, Jacksonville, and Columbus) have performed similar initiatives and have achieved increases in ridership and customer satisfaction. To assist staff in this critical work, Palm Tran has procured the services of an internationally known firm in bus network redesign, Jarrett Walker & Associates, who has led or assisted in numerous other transit system redesigns. Mr. Walker will be presenting at the workshop and will be available for questions.

Attachments:

1. Presentation

Recommended by:  11/20/17
Department Director Date

Approved By:  11/27/17
County Administration Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

| Fiscal Years | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|------|------|------|------|------|
| | | | | | |
| | | | | | |
| Capital Expenditures | | | | | |
| Operating Costs | | | | | |
| External Revenues | | | | | |
| Program Income(County) | | | | | |
| In-Kind Match(County) | | | | | |
| NET FISCAL IMPACT | | | | | |
| #ADDITIONAL FTE POSITIONS (CUMULATIVE) | | | | | |

Is Item Included in Current Budget? Yes No
 Does this item include the use of federal funds? Yes No

Budget Account No:

Fund Agency Organization Object

B. Recommended Sources of Funds/Summary of Fiscal Impact:

C. Departmental Fiscal Review:

Williams 11/3/17

III. REVIEW COMMENTS:

A. OFMB Fiscal and/or Contract Dev. and Control Comments:

OFMB AK 11/8/17

Contract Dev. & Control 11/22/17

B. Legal Sufficiency

Assistant County Attorney 11/27/17

C. Other Department Review

Department Director 11/22/17

(THIS SUMMARY IS NOT TO BE USED AS A BASIS FOR PAYMENT.)



CLINTON B. FORBES
Executive Director

KHALED SHAMMOUT
Director Transit Planning
Project Manager

JARRETT WALKER
Jarrett Walker and Associates

Presentation to the Palm Beach County
Board of County Commissioners (BCC)
November 28, 2017



Today's Workshop Agenda

1. Palm Tran Overview
2. Route Performance Maximization (RPM) Project
3. Discussion & Next Steps for RPM Project

Palm Tran's Mission is to provide access to opportunity for everyone ; safely, efficiently and courteously.



Human Transit

The professional blog of public transit consultant Jarrett Walker.



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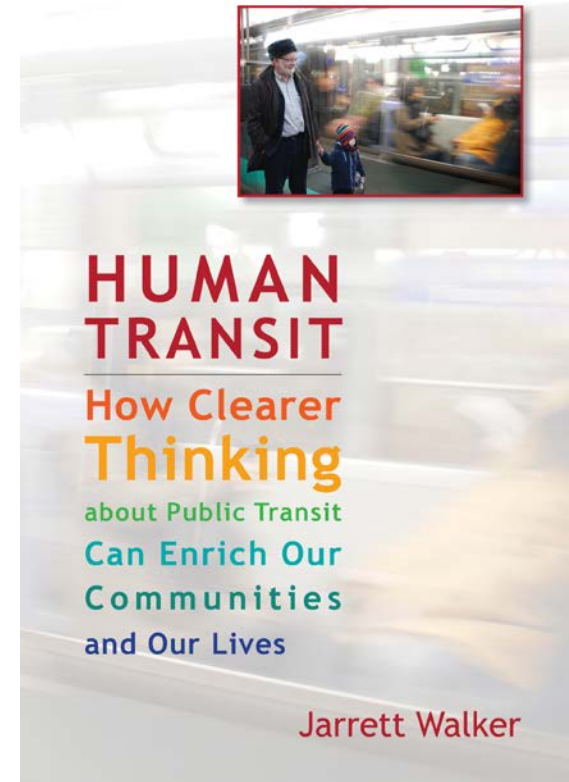
[Audio / Visual](#)

[Courses](#)



Palm Beach County Board of County Commissioners

November 28, 2017



Route Performance Maximization Project Workshop: Conceptual Alternatives



Why Are We Here?

- Discuss trade-offs that have to be made in planning transit, given minimal to no budget growth.
- Discuss launching public discussion of these trade-offs.
- The trade-off question will come back to you in a year.



Role of Transit



Roles of Effective Transit

- Reduce vehicle trips.
 - Lower congestion, road needs, emissions
- Attract businesses seeking urban amenities.
- Access to jobs and opportunity.
- Access to medical and other necessities.



Fixed Route Transit is Still Most Efficient

| Sample service | Passenger trips/service hour |
|---|------------------------------|
| Big city subway | >200 |
| Big city bus | 60 |
| Typical suburban bus | 10-30 |
| PalmTran along Highway 1 | 27 |
| Most PalmTran Routes | 10-25 |
| General Public Dial-a-Ride (incl Uber/Lyft) | 2-3 |
| Paratransit (senior-disabled) | 1 |
| Taxi – Uber - Lyft | 1-2 |

All demand-responsive options are far less efficient than even poorly performing fixed routes.

How do they make up the difference?

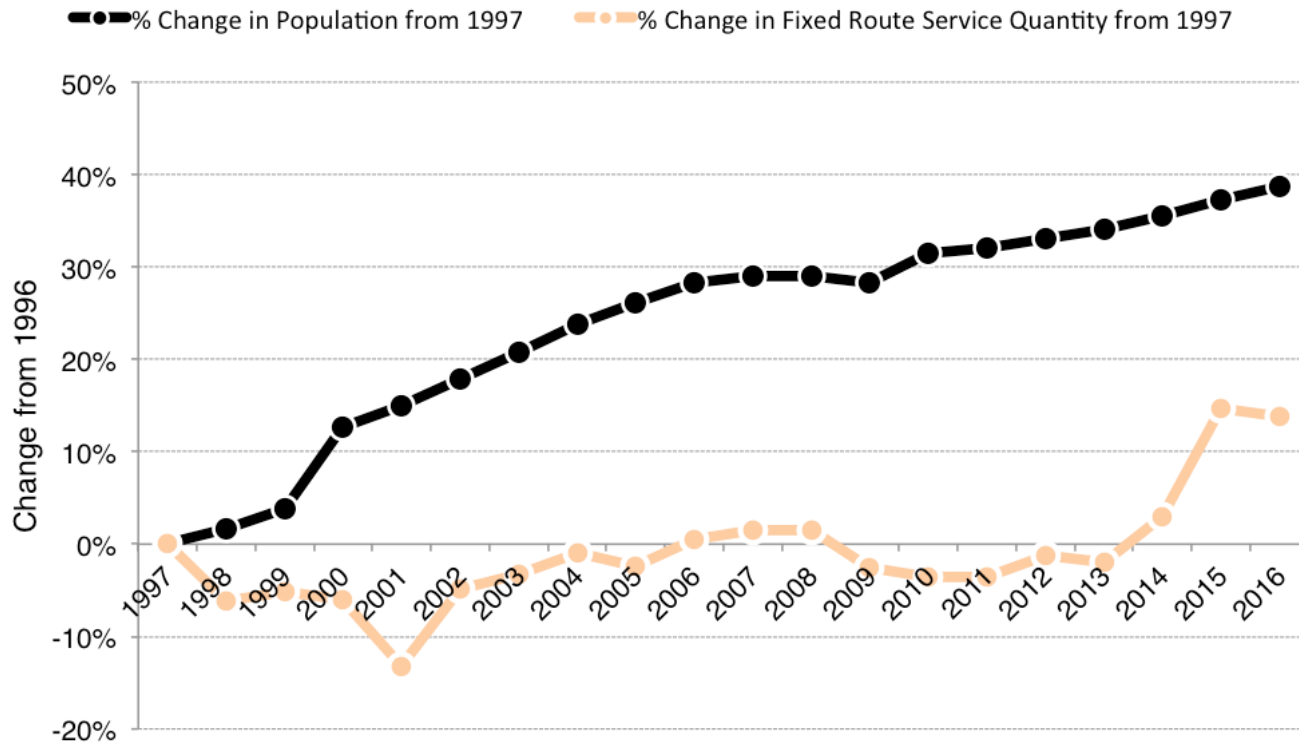
1. Much lower “wages”.
2. Higher fares.



How Much Transit?



Transit Has Not Grown with Pop.



Data source: Bureau of Economic and Business Research, University of Florida.

National Transit Database, 2015.

*2016 population data based on ACS 1-year estimate.

*2016 revenue hours total based on sum of NTD monthly estimates.



**Palm Beach County
1990 Residential Density**



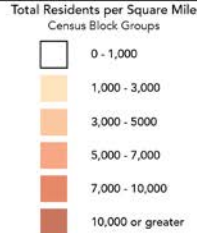
Minnesota Population Center, National Historical Geographic Information System, Version 11.0 (Database), Minneapolis: University of Minnesota, 2016. <http://doi.org/10.18128/0505V11.0>
1990 values have been areally interpolated to 2010 boundaries

1990



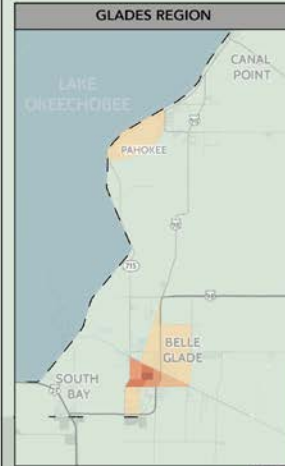
0 5 10 MILES

**Palm Beach County
Residential Density**



American Community Survey 5-Year Summary
File, 2011-2015

2015



0 5 10 MILES

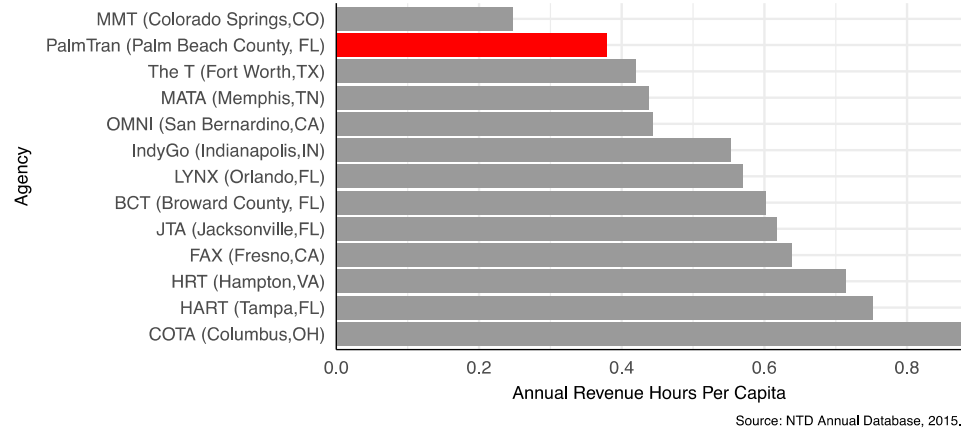


Few Resources, Many Needs

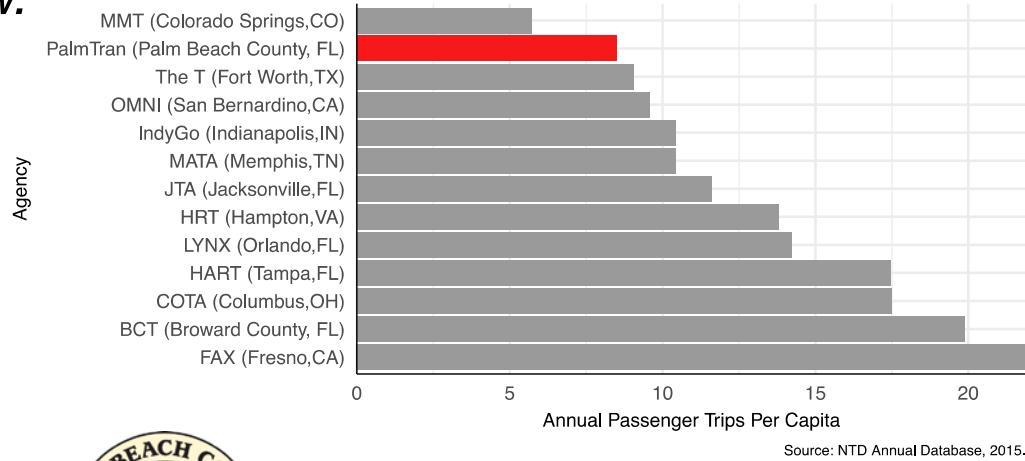
- Rapid population growth since 1996, but service hasn't grown.
- So service *per capita* is plummeting.
- Compared to peers:
 - *Service quantity is low.*
 - *So, ridership is low.*

Broward, the most relevant peer, has 1/3 more service per capita, and over twice the ridership/capita.

Palm Tran Peer Agency Annual Service Quantity Per Capita, 2015



Palm Tran Peer Agency Annual Passenger Trips Per Capita, 2015

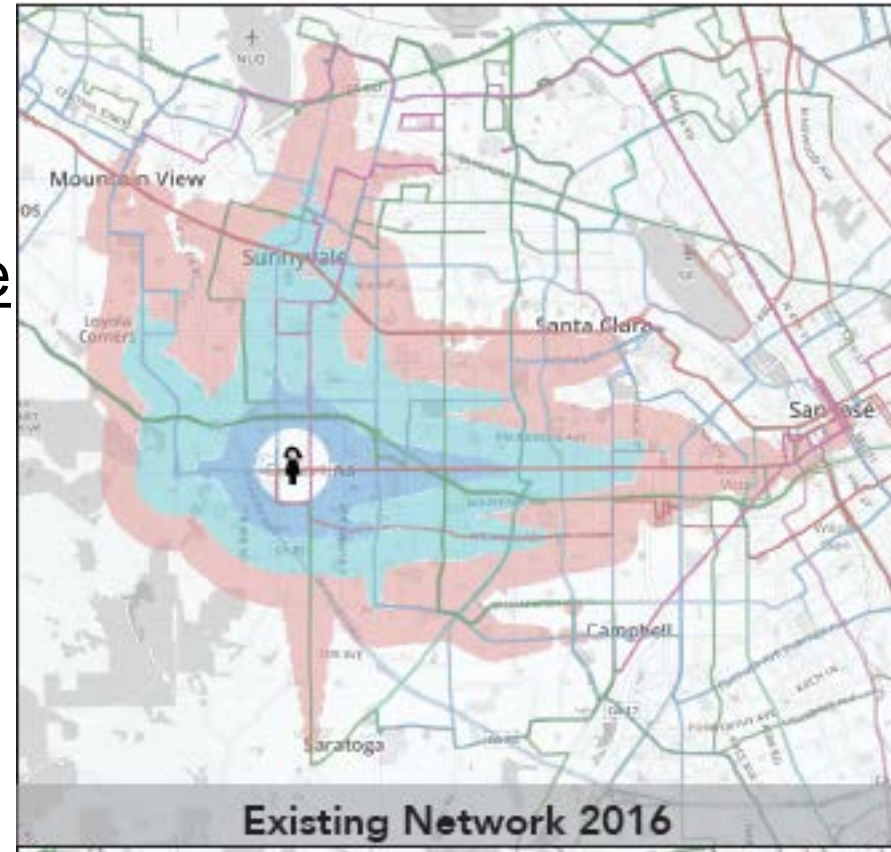


The Geometry of High-Ridership Transit



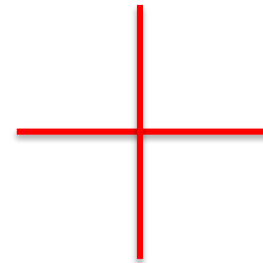
What Maximizes Freedom?

- High Frequency Lines
- Forming a Connected Network
- Reasonably Fast and Reliable
- Focused on Transit-Friendly Places
 - Dense
 - Walkable
 - Linear
 - Proximate

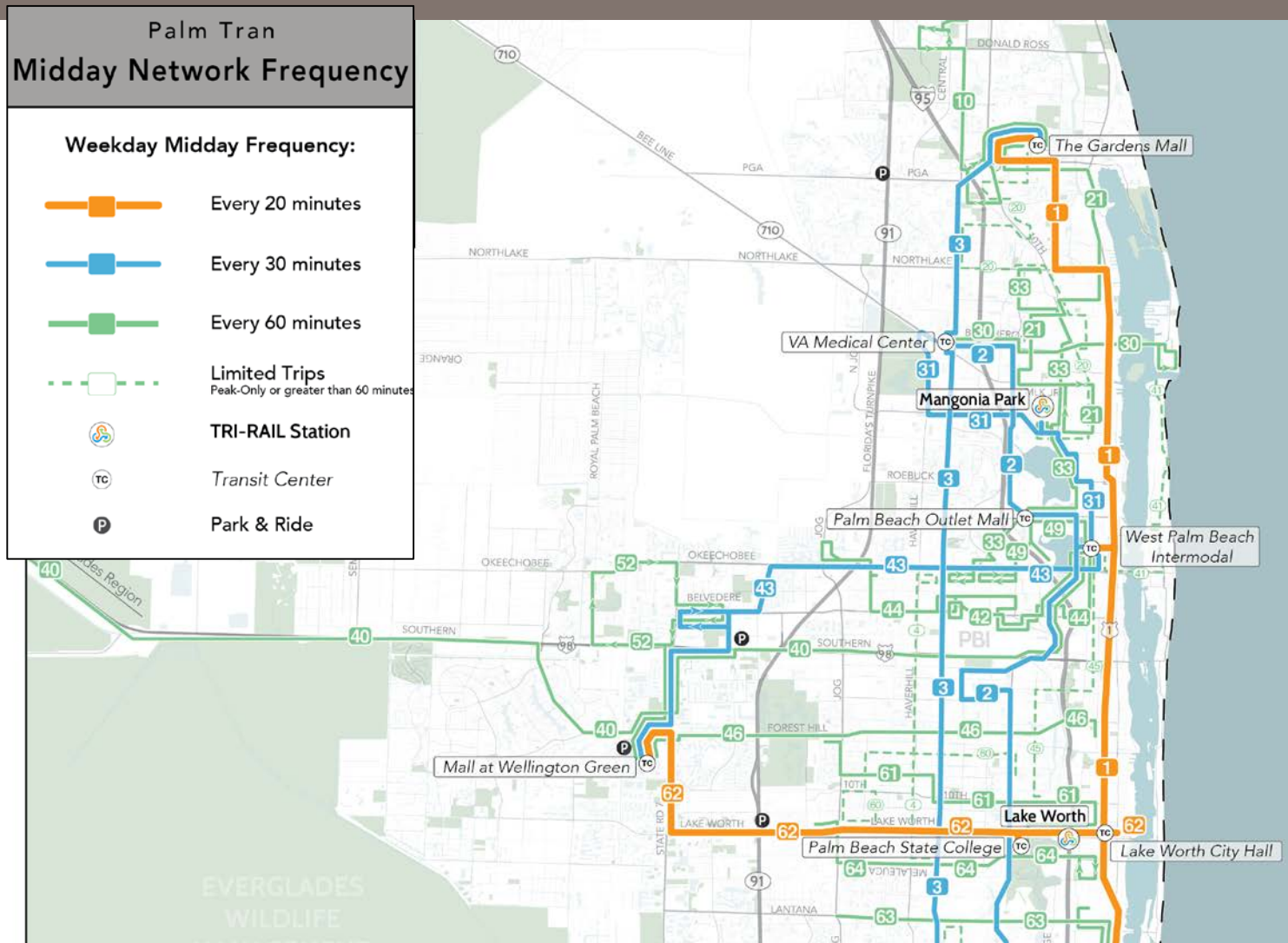


Frequency Comes First

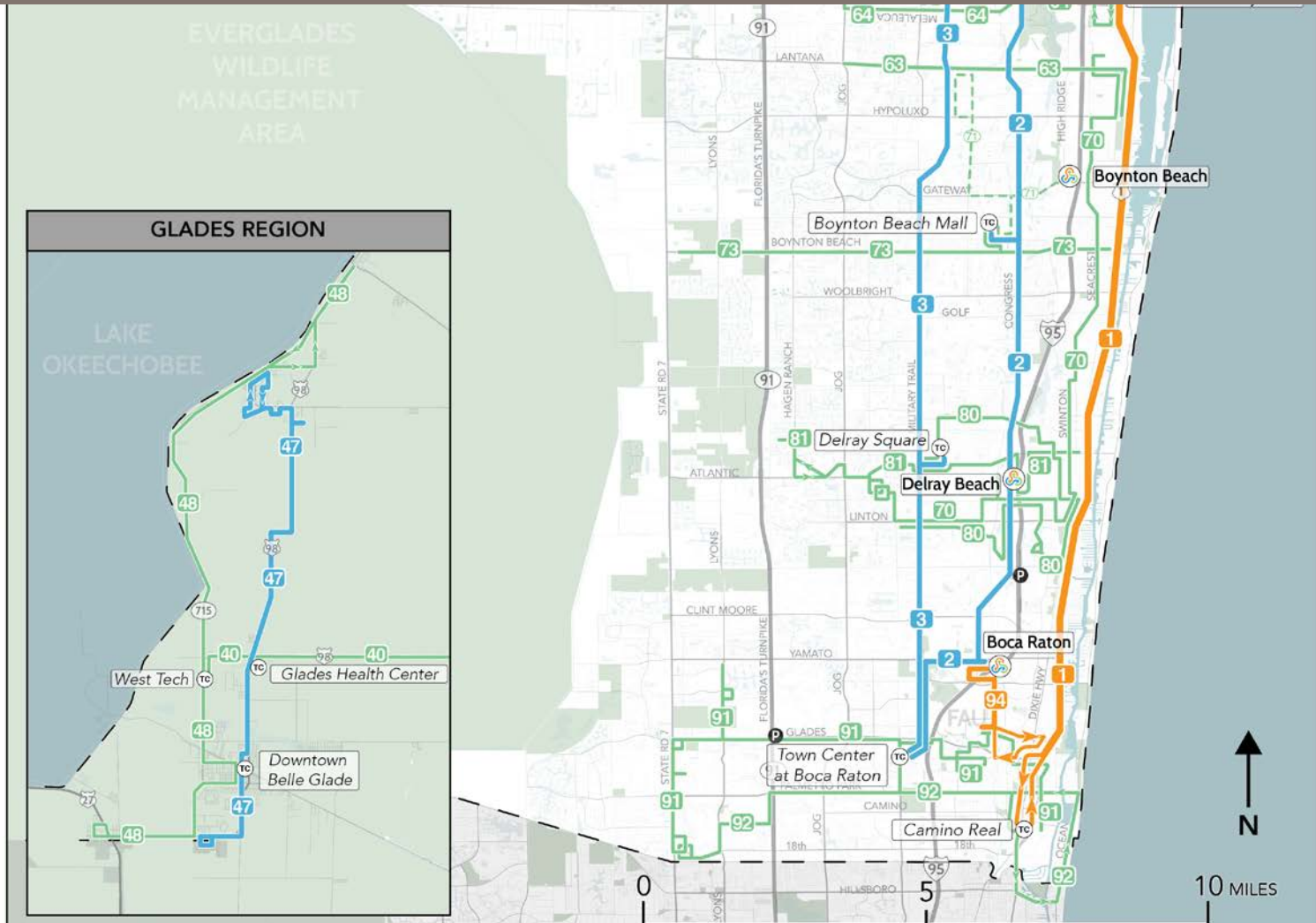
- High frequency means public transport is coming soon. This has three independent benefits:
 - **Reduced Waiting**
 - **Easier Connections**
 - **Reduced Impact of Disruptions**
- Lines with higher frequency tend to have not just higher patronage, but higher ridership per unit of service.



Midday Network Frequency – North

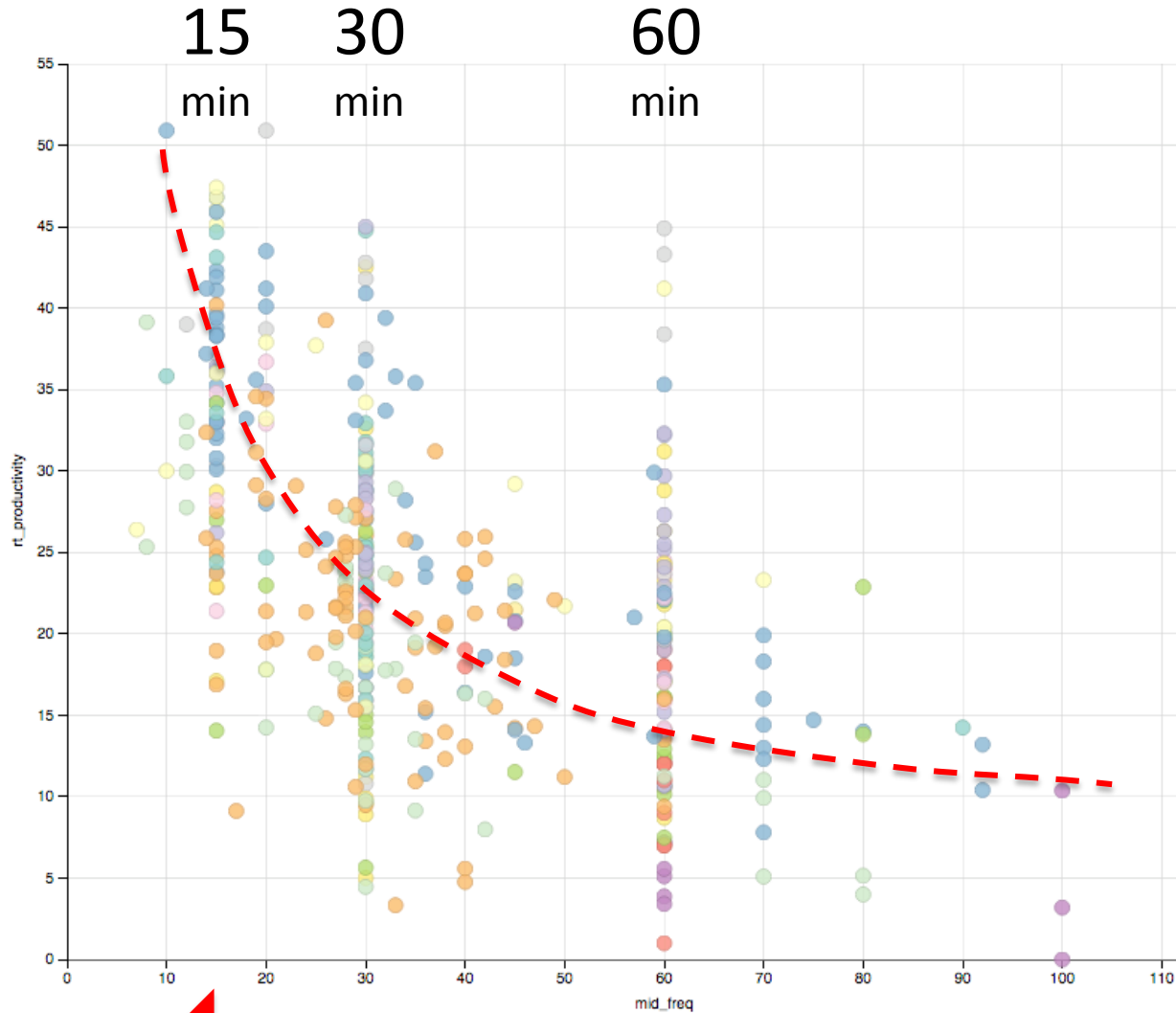


Midday Network Frequency - South



HIGH FREQUENCY → HIGH PRODUCTIVITY

Higher Productivity (Boardings/Hour)

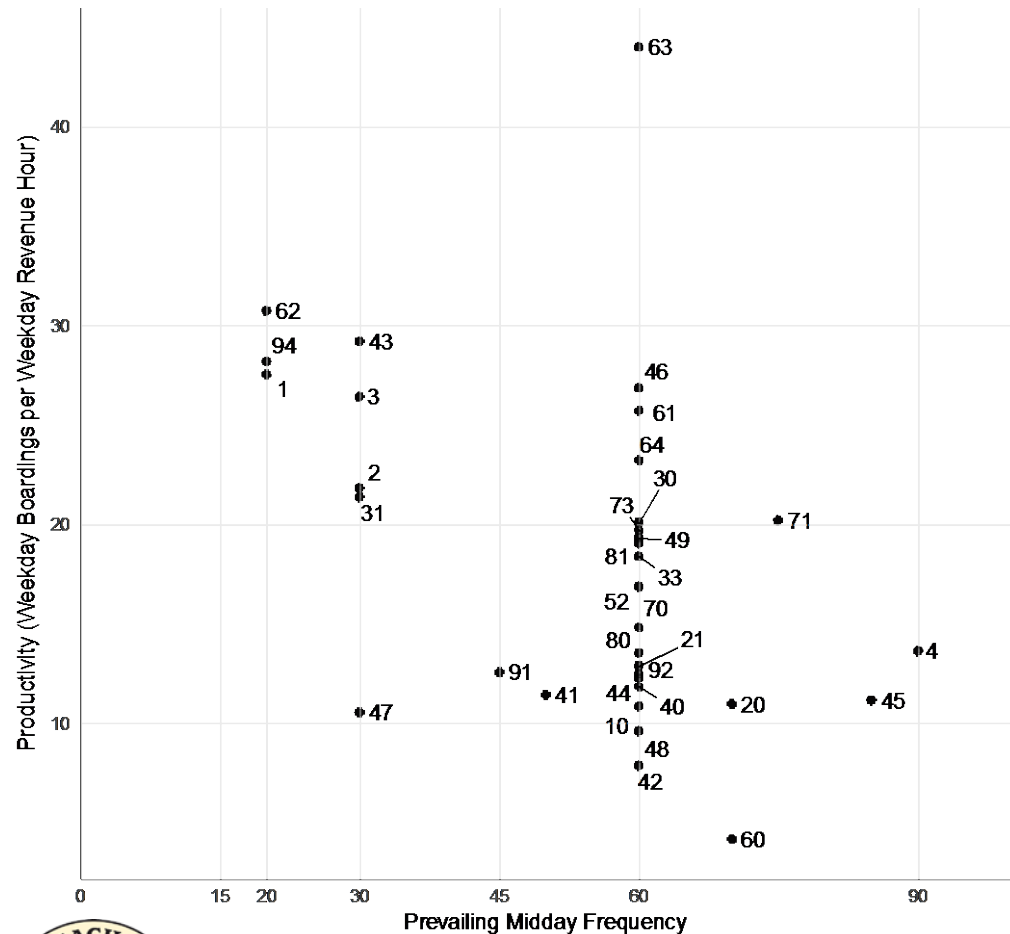


Higher Frequency

Productivity & Frequency: PalmTran

- Palm Tran's most frequent routes tend to be its most productive.
- But no route is at every 15 minutes.

Palm Tran Route Productivity and Midday Frequency
Weekdays, April 2017



Where can transit achieve high ridership?

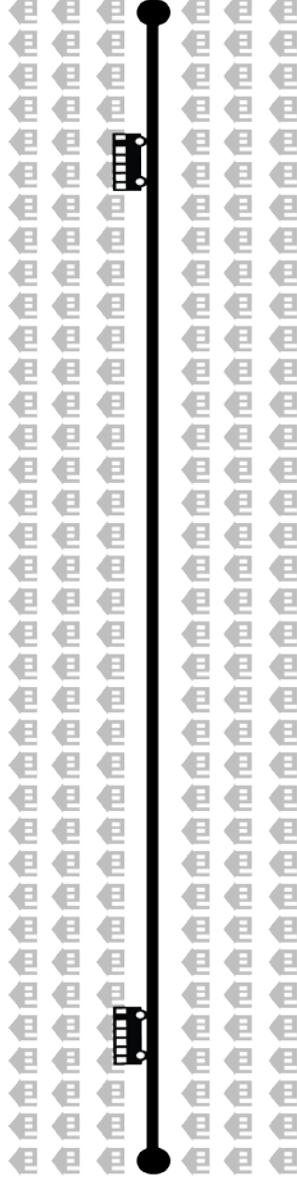


Density

How many people are near transit?

The more people are going to and from the area around each stop, the more people will ride transit.

High
Ridership



Lower
Ridership



**Palm Beach County
1990 Residential Density**

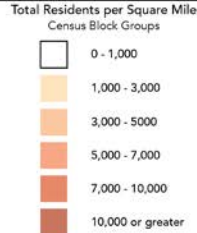


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1990



**Palm Beach County
Residential Density**



American Community Survey 5-Year Summary
File, 2011-2015

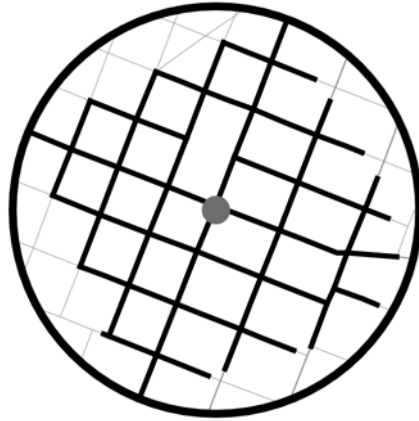
2015



Walkability

Can the people around the stop walk to the stop?

High
Ridership



Lower
Ridership



Proximity

Does transit have to cross long low-ridership gaps?

Lower cost



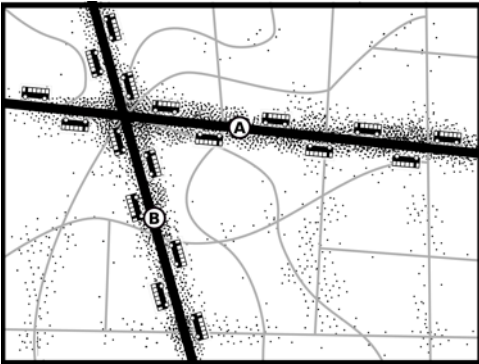
Higher cost



The Ridership-Coverage Tradeoff

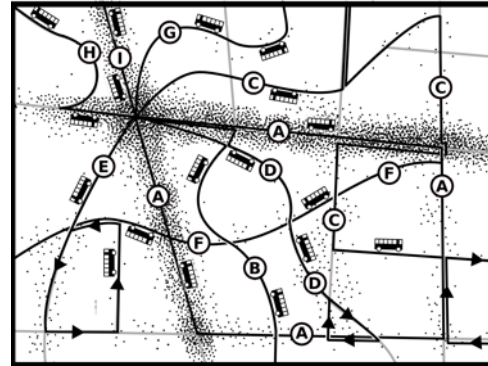
But is Ridership What You Want?





Ridership Goal

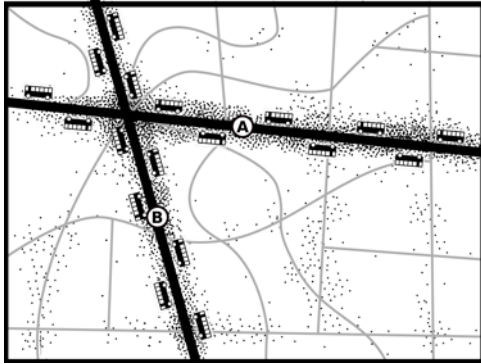
- “Think like a business.”
- Better service for most but not all.
- Focus where ridership potential is highest.
- Support dense and walkable urban development.
- Environmental and congestion benefits.



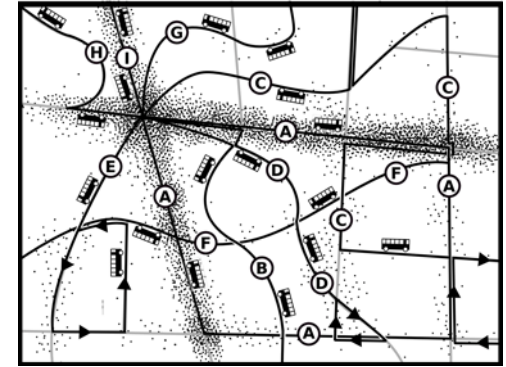
Coverage Goal

- “Think like a public service.”
- Some kind of service for everyone, everywhere.
- Support low-density development.
- Lifeline access for everyone.
- Service to every member city or electoral area.

So it helps to choose a point on the spectrum ...



Ridership Goal



Coverage Goal



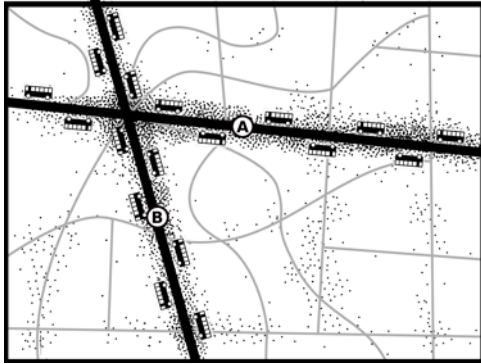
Existing System
~ 60% ridership

About 60% of your service is where it would be if ridership were the only network design goal.

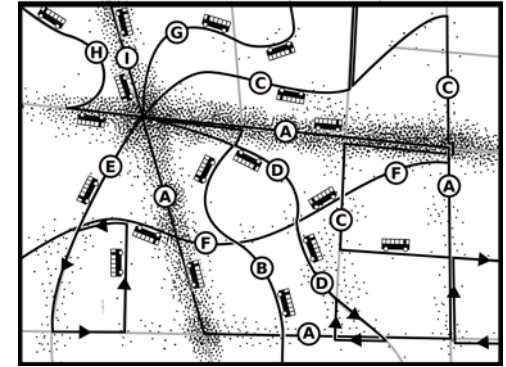
The Service Concepts



So it helps to choose a point on the spectrum ...



Ridership Goal



Coverage Goal



Ridership
Concept
~ 80%
ridership

Coverage
Concept
~ 60%
ridership

About 60% of your service is where it would be if ridership were the only network design goal.

Service Concepts

- Focused on different balances of goals:
 - Ridership Concept emphasizes ridership.
 - Coverage Concept consists of small improvements to existing system ... continues to emphasize coverage.
- Same budget – approximately equivalent to current service level
- *Important: these are not proposals! The Service Concepts are designed to illustrate the tradeoff, so that people can offer informed input on the different goals of transit.*



Concepts Developed Together

- Concepts were *developed in an intensive workshop including:*
 - *Palm Tran*
 - *All depts.*
 - *Palm Beach County*
 - *Engineering*
 - *Planning, Zoning and Building*
 - *MPO*



Coverage Service Concept

- Like existing network but with some minor streamlining, especially north of WPB.



Ridership Service Concept

- Builds 15-minute frequency network focused on most favorable areas.
- Coverage reductions around the edges.



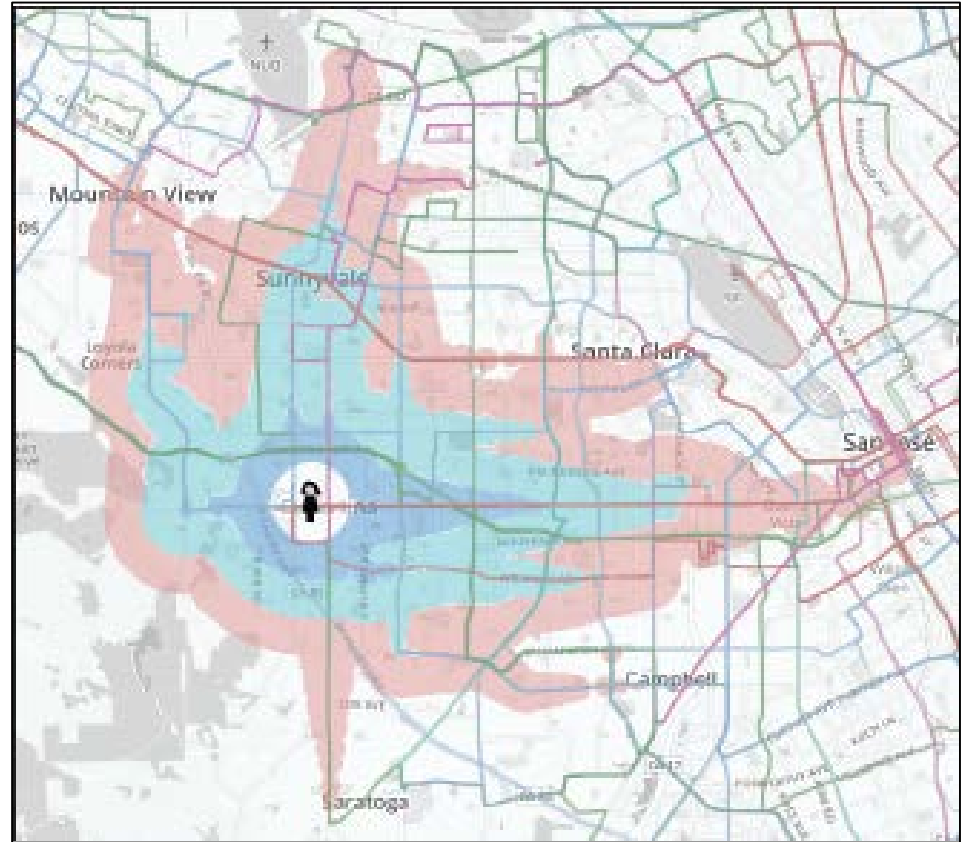
What About Weekend/Evening?

- Weekend/evening is critical to access to jobs.
- BUT improving weekend service within the existing budget would require very substantial cuts to the weekday service level
- Coverage Concept: weekend service is very similar to today, with many routes not operating at all
- Ridership Concept: all routes operate on both Saturdays and Sundays
 - 15-minute services turn down to 30-minute on weekends
 - 30-minute services turn down to 60-minute frequency
 - 60-minute services stay at 60-minute frequency



Key Outcomes - Access

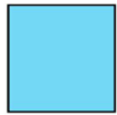
- Where can I get to using the transit system in 30, 45, 60 minutes?
- How many jobs or other people are accessible to me?



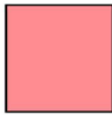
How far can Jane travel in or minutes?

From Downtown Boca Raton,

where could I travel to in 45 minutes compared to the existing network?



Gained Access



Lost Access



Retained Access

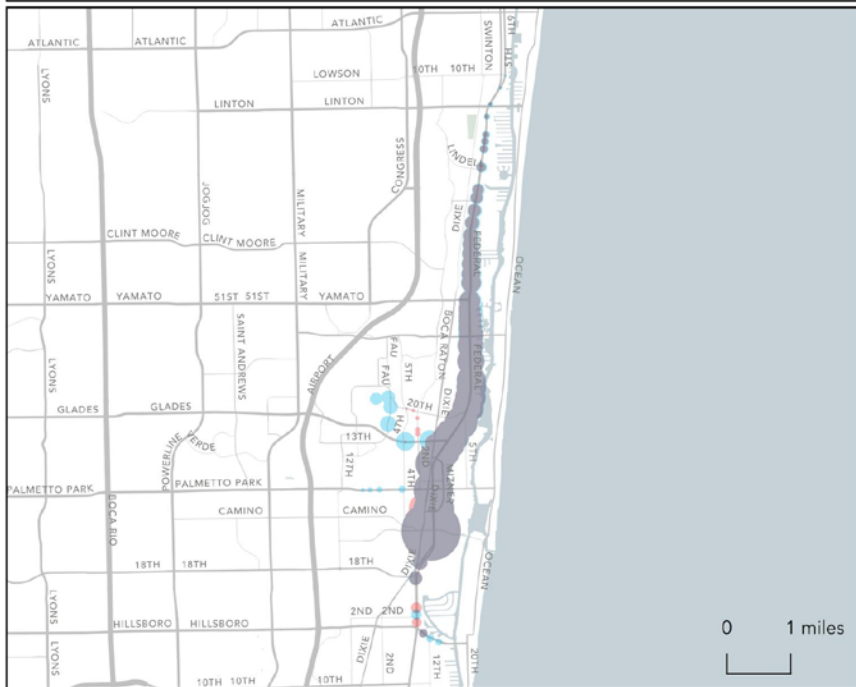
Here are the areas I can access on weekdays at noon for each service concept compared to the existing network:

Residential and Job Access

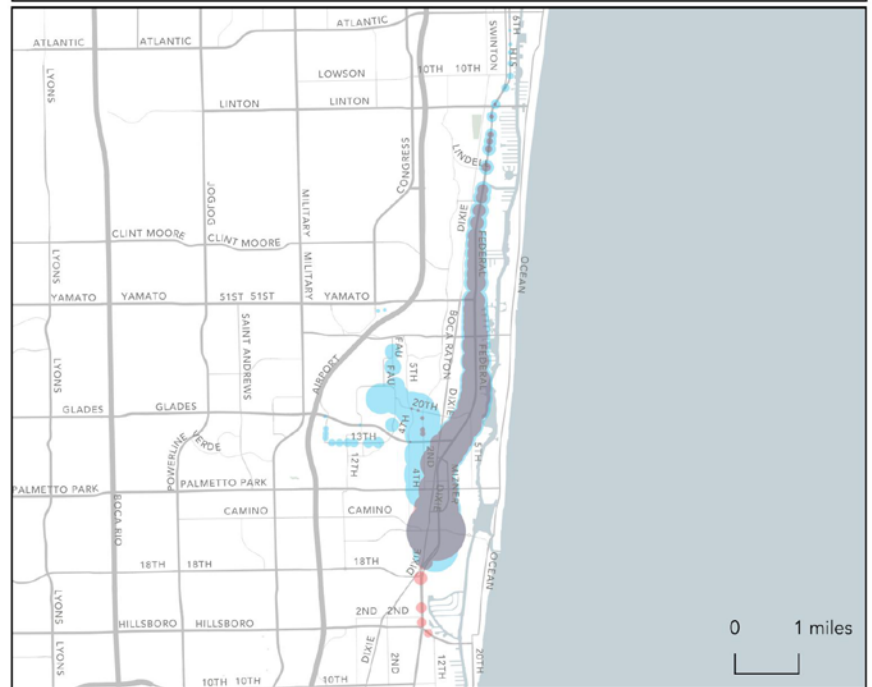
| Travel Time | Network | Residents | % Change | Jobs | % Change |
|-------------|-----------|-----------|----------|--------|----------|
| 30 | Existing | 3,500 | 0 % | 5,200 | 0 % |
| 30 | Coverage | 3,500 | 0.3 % | 5,300 | 1.1 % |
| 30 | Ridership | 6,200 | 79.2 % | 9,300 | 77.5 % |
| 45 | Existing | 11,200 | 0 % | 13,600 | 0 % |
| 45 | Coverage | 12,200 | 9.2 % | 14,900 | 9.2 % |
| 45 | Ridership | 17,100 | 52.6 % | 21,100 | 54.6 % |
| 60 | Existing | 27,200 | 0 % | 27,400 | 0 % |
| 60 | Coverage | 31,200 | 14.7 % | 30,200 | 10.1 % |
| 60 | Ridership | 36,700 | 35.1 % | 40,300 | 47.1 % |

Data: U.S. Census American Community Survey 5-year Estimates Summary File, 2010-2014.
U.S. Census Longitudinal-Employer Household Dynamics Program, 2014

Coverage Service Concept

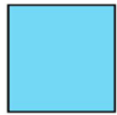


Ridership Service Concept



From Okeechobee and Military Trail,

where could I travel to in 45 minutes compared to the existing network?



Gained Access



Lost Access



Retained Access

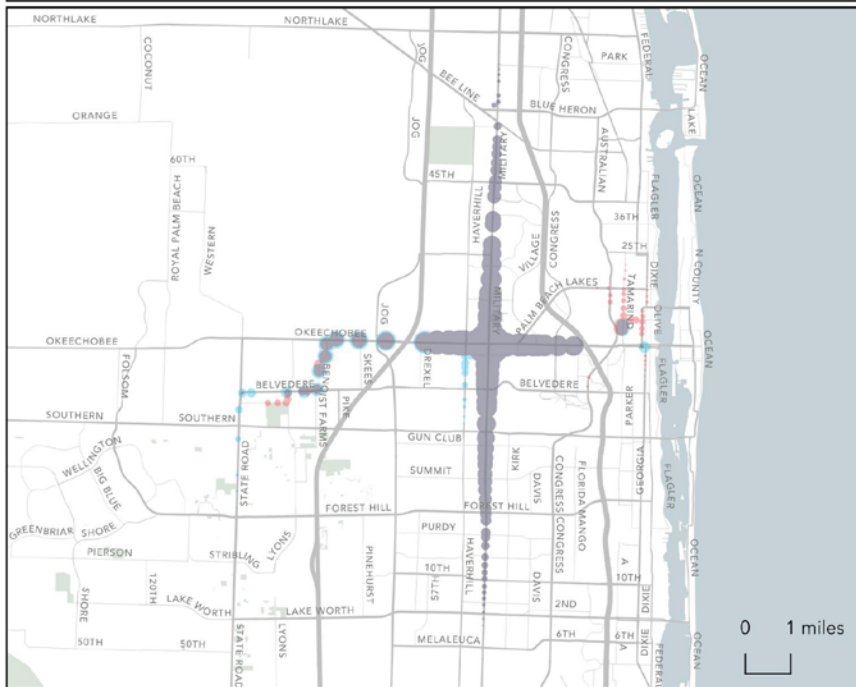
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Residential and Job Access

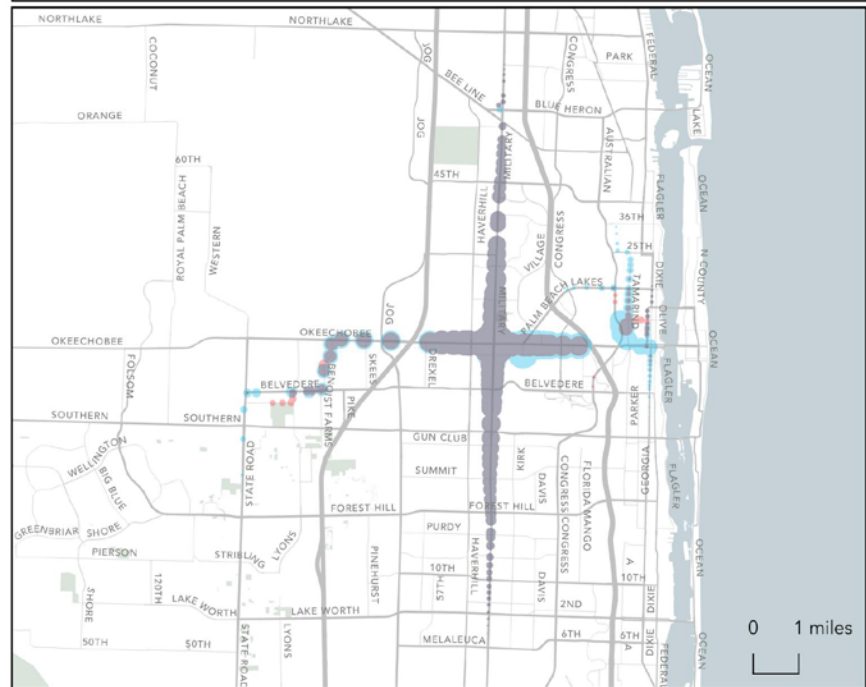
| Travel Time | Network | Residents | % Change | Jobs | % Change |
|-------------|-----------|-----------|----------|--------|----------|
| 30 | Existing | 5,500 | 0 % | 2,500 | 0 % |
| 30 | Coverage | 5,700 | 2.5 % | 2,600 | 2.7 % |
| 30 | Ridership | 7,600 | 37.3 % | 4,600 | 86.2 % |
| 45 | Existing | 29,800 | 0 % | 15,700 | 0 % |
| 45 | Coverage | 30,300 | 1.9 % | 14,500 | -7.9 % |
| 45 | Ridership | 35,700 | 19.9 % | 23,000 | 46.7 % |
| 60 | Existing | 84,600 | 0 % | 51,900 | 0 % |
| 60 | Coverage | 83,400 | -1.5 % | 46,700 | -10.1 % |
| 60 | Ridership | 93,800 | 10.8 % | 60,200 | 16.1 % |

Data: U.S. Census American Community Survey 5-year Estimates Summary File, 2010-2014.
U.S. Census Longitudinal-Employer Household Dynamics Program, 2014

Coverage Service Concept

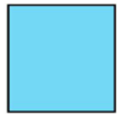


Ridership Service Concept



From The Gardens Mall,

where could I travel to in 45 minutes compared to the existing network?



Gained Access



Lost Access



Retained Access

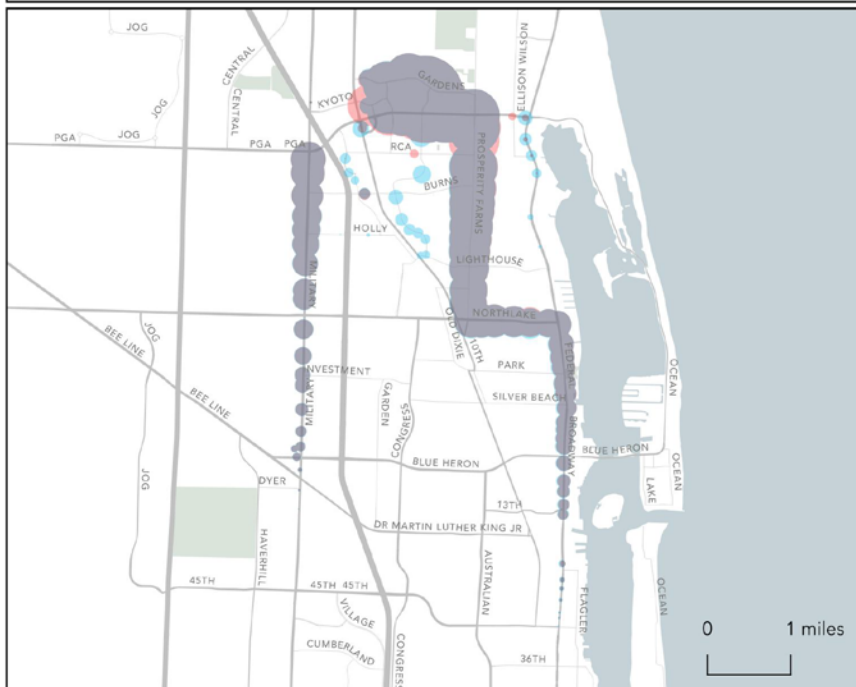
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Residential and Job Access

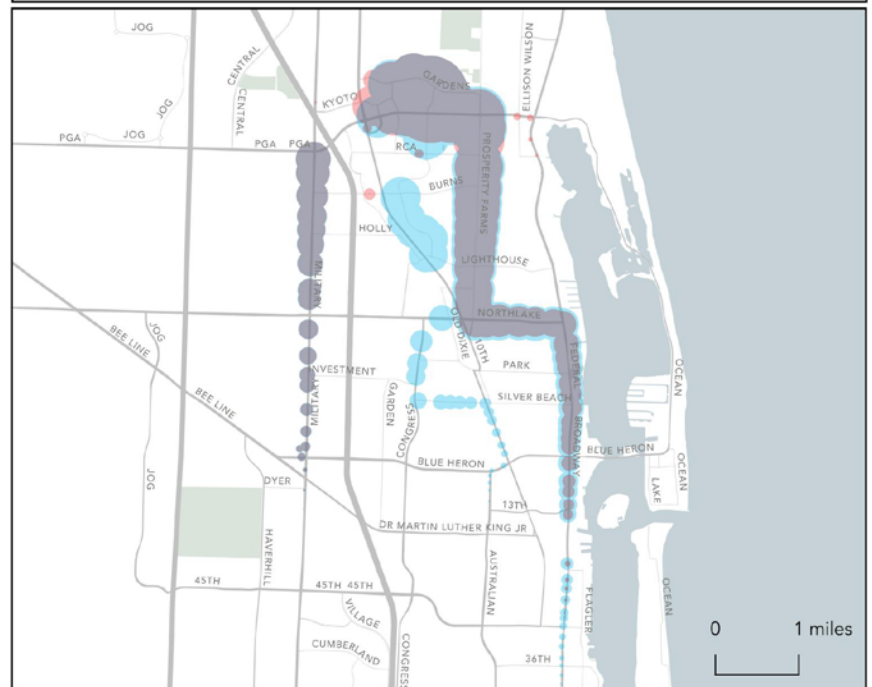
| Travel Time | Network | Residents | % Change | Jobs | % Change |
|-------------|-----------|-----------|----------|--------|----------|
| 30 | Existing | 3,600 | 0 % | 4,600 | 0 % |
| 30 | Coverage | 3,500 | -2.1 % | 4,300 | -7.1 % |
| 30 | Ridership | 5,300 | 48.8 % | 5,500 | 18.6 % |
| 45 | Existing | 15,300 | 0 % | 11,800 | 0 % |
| 45 | Coverage | 16,600 | 8.3 % | 12,400 | 4.8 % |
| 45 | Ridership | 22,200 | 44.6 % | 15,200 | 28.6 % |
| 60 | Existing | 39,700 | 0 % | 25,800 | 0 % |
| 60 | Coverage | 46,800 | 18 % | 30,400 | 17.6 % |
| 60 | Ridership | 51,200 | 29.2 % | 35,400 | 37 % |

Data: U.S. Census American Community Survey 5-year Estimates Summary File, 2010-2014.
U.S. Census Longitudinal-Employer Household Dynamics Program, 2014

Coverage Service Concept

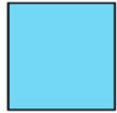


Ridership Service Concept

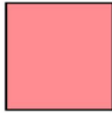


From Wellington Green Mall,

where could I travel to in 45 minutes compared to the existing network?



Gained Access



Lost Access



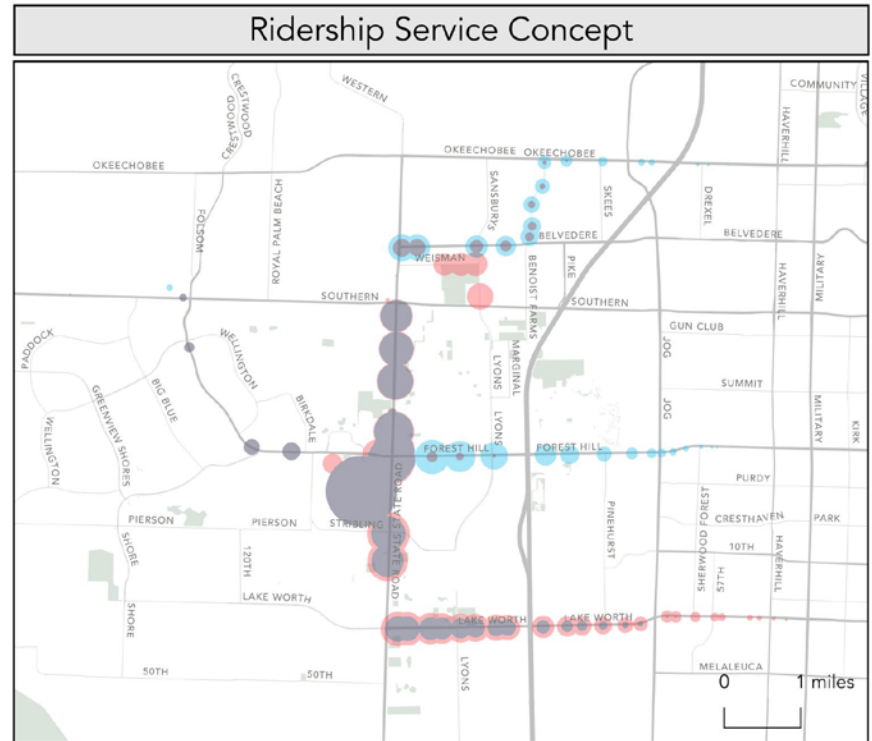
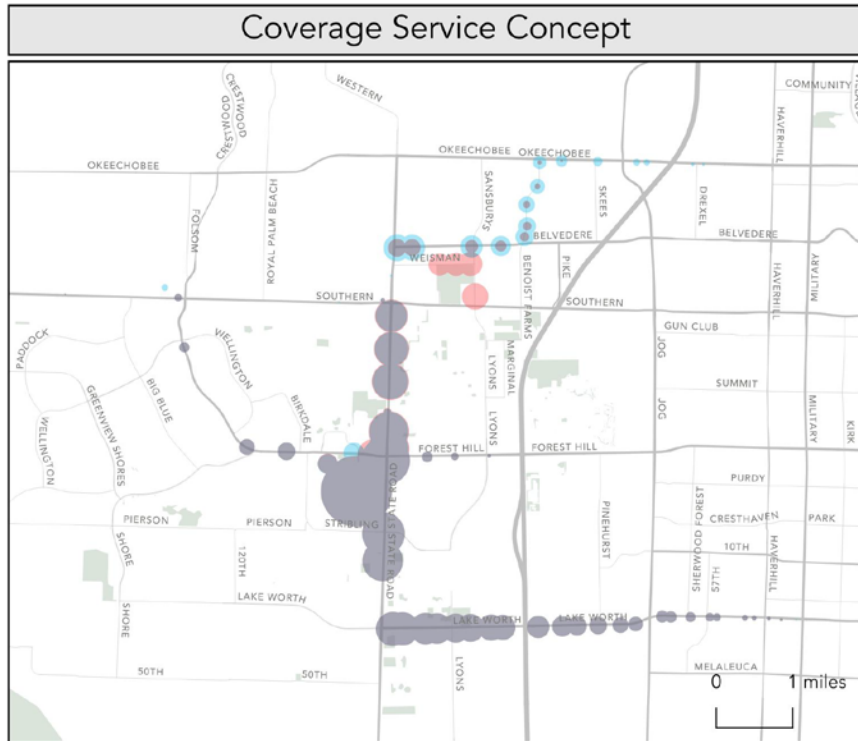
Retained Access

Here are the areas I can access on weekdays at noon for each service concept compared to the existing network:

Residential and Job Access

| Travel Time | Network | Residents | % Change | Jobs | % Change |
|-------------|-----------|-----------|----------|--------|----------|
| 30 | Existing | 1,500 | 0 % | 1,100 | 0 % |
| 30 | Coverage | 1,400 | -4.6 % | 1,000 | -2.6 % |
| 30 | Ridership | 1,300 | -16 % | 900 | -15 % |
| 45 | Existing | 9,000 | 0 % | 4,400 | 0 % |
| 45 | Coverage | 9,600 | 6.6 % | 4,400 | -1 % |
| 45 | Ridership | 8,900 | -1.8 % | 3,700 | -16.3 % |
| 60 | Existing | 33,200 | 0 % | 12,700 | 0 % |
| 60 | Coverage | 37,200 | 11.8 % | 14,200 | 11.9 % |
| 60 | Ridership | 38,800 | 16.8 % | 15,200 | 19.6 % |

Data: U.S. Census American Community Survey 5-year Estimates Summary File, 2010-2014.
U.S. Census Longitudinal-Employer Household Dynamics Program, 2014



Remember

- This whole discussion is within existing budget.
- This budget requires these choices.
- Your expectations must depend on how much you want PalmTran to focus on ridership as opposed to coverage.
 - Ridership concept: low cost/rider
 - Coverage concept: service to more of the county.



Service Board Has Reviewed



- RPM presented to Palm Tran Service Board (PTSB) on October 31, 2017
- Mixed comments:
 - Some members expressed strong concern about how transit supply is falling behind demand and needs
 - Some members commented that the coverage option with efficiency modifications would be the least painful for the community
 - Asked for more resources/funding support for transit

Questions We Want to Ask

- Is the Coverage Concept a good short-term plan that staff could implement as early as 2/2019?
- How should the network evolve in the next 3-5 years with respect to the balance of ridership and coverage goals?
- The service concepts show what could be done with no new resources (both ridership and coverage). Should there be more resources? If so, what % more?

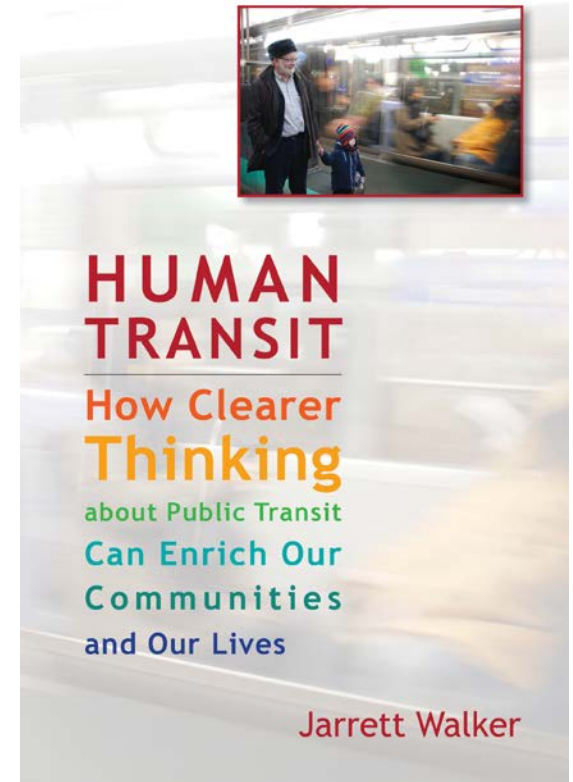


What Comes Next?

- RPM Phase 2
 - RFP Development November 2017 **Completed**
 - Procurement and NTP (Planning/Outreach) April 2018
 - Production and Community Engagement October 2018
 - Present to PTSB October 2018
 - Present to BCC Oct / Nov 2018
 - Go Live with New System February 2019
- Palm Tran will continue to make minor service enhancements while RPM is being finalized for full implementation.



Jarrett Walker
Humantransit.org
@humantransit



Discussion

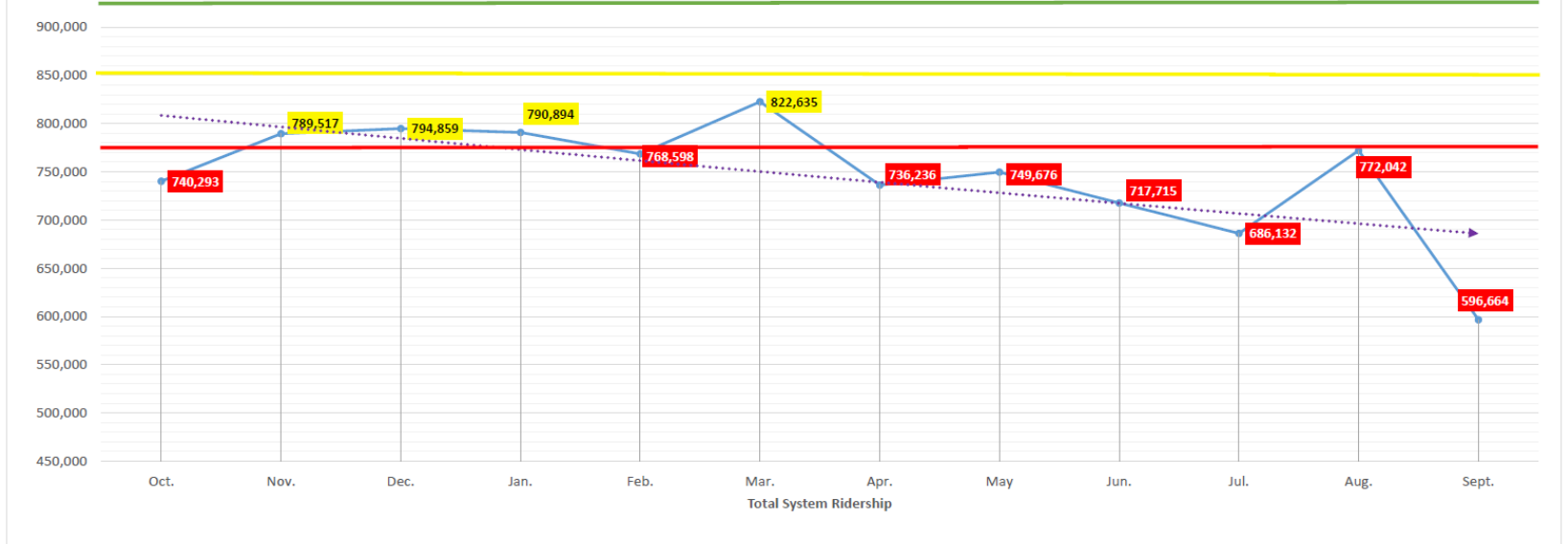


Backup Slides



FIXED ROUTE - Total System Ridership

| Mobility | Min | Target | Goal | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sept. |
|------------------------|---------|---------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Total System Ridership | 775,000 | 850,000 | 1M | 740,293 | 789,517 | 794,859 | 790,894 | 768,598 | 822,635 | 736,236 | 749,676 | 717,715 | 686,132 | 772,042 | 596,664 |



| Metric | Metric Calculation | Metric Description |
|------------------------|------------------------------------|---|
| Total System Ridership | Total Count of Passenger Boardings | The aggregate number of Fixed Route customer boardings. <i>Note: Palm Tran ridership is being captured with the FTA certified APC (Automated Passenger Counter) System.</i> |

Narrative

During the month of September, Palm Tran experienced a sharp decline in this metric. Ridership in September was 23% lower compared to the prior month of August. The sole reason for this drastic drop is due to Hurricane Irma. The loss of ridership of 23% represents a full week of ridership, which is the duration from when service was reduced and eventually stopped, until business and public sector resumed normal operations.



Palm Tran Performance Management Office

- The Minimum has not been met
- The metric is at or above the Minimum but not at the Target
- The Target has been met or exceeded

| Fiscal Year | Fixed-Route Ridership | % Change from Previous Year |
|---------------------------------------|-----------------------|-----------------------------|
| FY 2013 | 12,018,198 | 3.79% |
| FY 2014 | 11,426,791 | -4.92% |
| FY 2015 | 10,773,132 | -5.72% |
| FY 2016 | 9,727,520 | -9.71% |
| FY 2017 | 8,965,261 | -7.84% |
| Total Change From FY 2013-2017 | (3,052,937) | -31.16% |

