



# Enhance RTS Study



## Gainesville City Commission



Presented by  
**Parsons Brinckerhoff, Inc.**

March 20, 2014

[www.go-enhanceRTS.com](http://www.go-enhanceRTS.com)





# Enhance RTS Study

## Agenda

- Study Overview
- Results of Refined Alternatives Analysis
- Draft Recommended Alternative
- Next Steps
- Questions and Public Comments





## Enhance RTS Study

### Purpose of Study

- Assess the feasibility of premium transit alternatives for East-West corridor including Bus Rapid Transit (BRT), as a means to enhance mobility and provide equitable transportation options
- Follow the Federal Transit Administration (FTA) procedures for:
  - Mode and alignment alternatives
  - Ridership demand
  - Costs and environmental impacts
  - Potential funding strategies



# Enhance RTS Study

## GO Enhance RTS Goals

### GOALS

**Goal #1: Improve Mobility and Transit Accessibility in the Study Area**

**Goal #2: Assure Equitable Transportation Options for the Community**

**Goal #3: Enhance the Quality of the Environment**

**Goal #4: Enhance Community Cohesion**

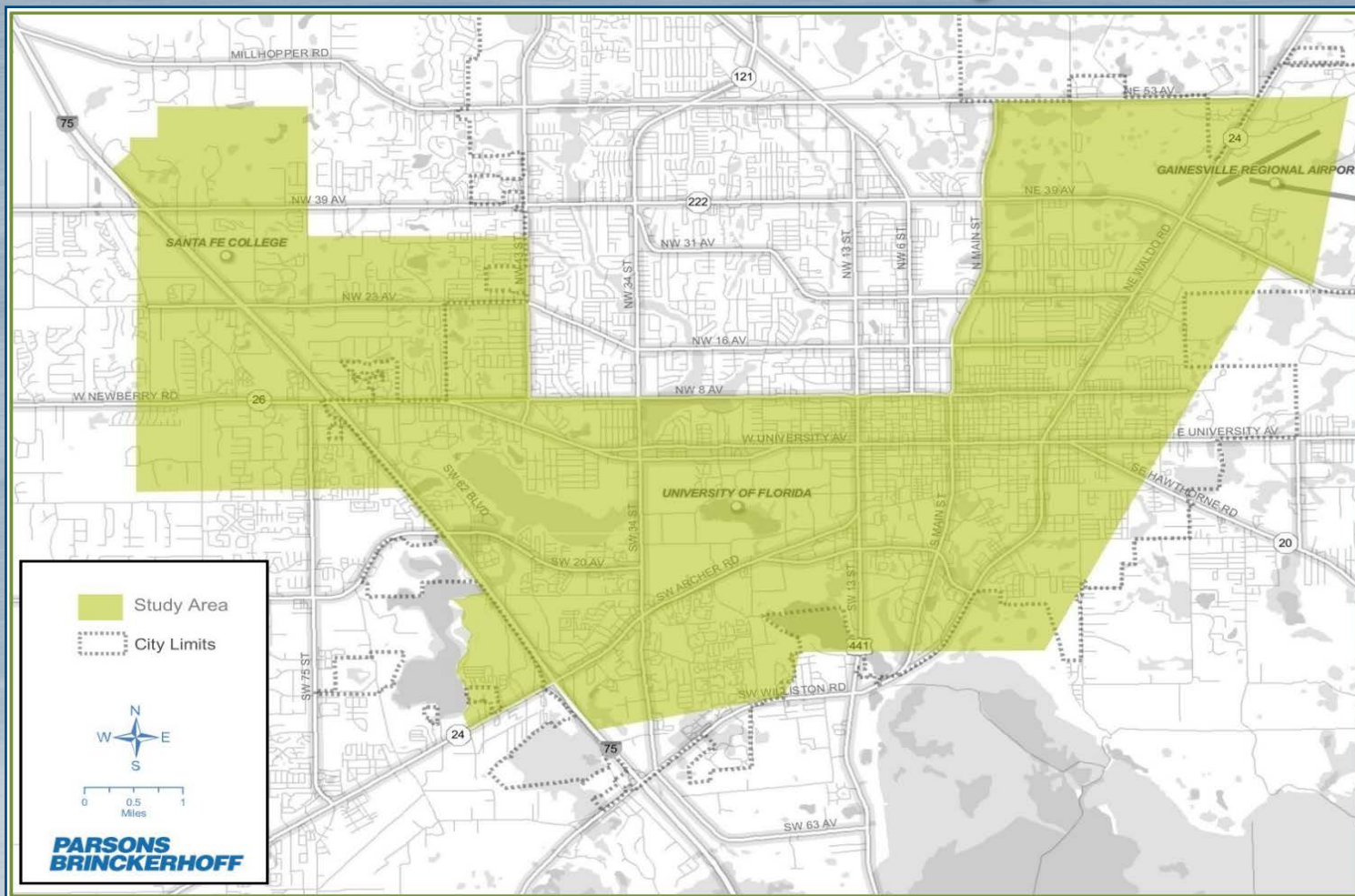
**Goal #5: Develop Transportation Options that are Cost Effective, Promote Private Investment and Financially Viable**





# Enhance RTS Study

## GO Enhance RTS Study Area





## Enhance RTS Study

### Alternatives Evaluated

- No-Build Alternative
  - Existing transit service
- Transportation Systems Management (TSM) Alternative
  - Bus operations modified to enhance service
  - No significant roadway or infrastructure improvements
- Build Alternative (Bus Rapid Transit)
  - Major capital investment
  - Articulated buses, exclusive transitways, enhanced stations





# Enhance RTS Study

## Refined Transit Mode Options

Bus Rapid Transit (BRT)



TSM





# Enhance RTS Study

## Mode Features

	TSM	BRT
Limited Stop		
More Frequent Service		
Intersection Priority		
Exclusive Lanes		
Enhanced Stations		
Off-Board Fare Collection		





## Enhance RTS Study

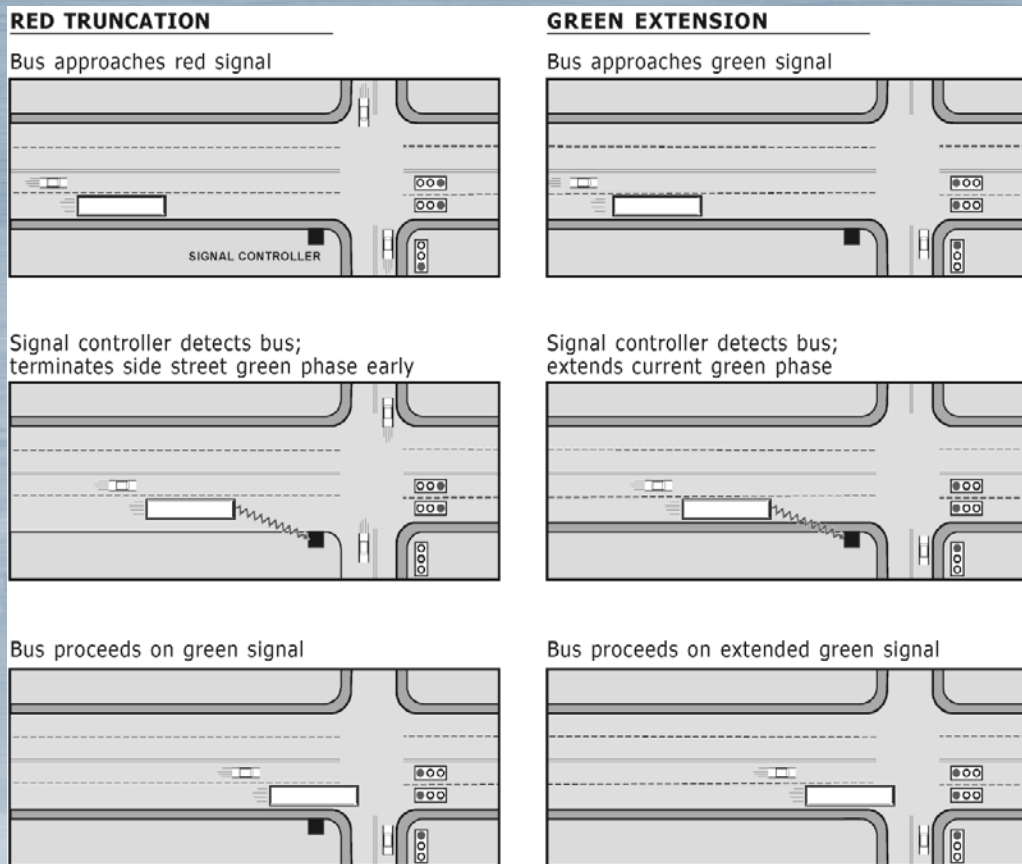
# Assumed BRT and TSM Service Levels

- Service frequency
  - Weekday
    - 10-min frequency (7:30 to 11:00 AM and 3:00 to 6:00 PM)
    - 15-min frequency (Off-peak)
  - Saturdays – 20-min
  - Sundays and Holidays – 30-min
- Span of Service
  - Weekdays – 18 hrs
  - Saturdays – 15 hrs
  - Sundays and Holidays – 12 hrs



# Enhance RTS Study

## Transit Signal Priority



Source: Transit Capacity and Quality Service Manual, TCRP Report 118, 2007

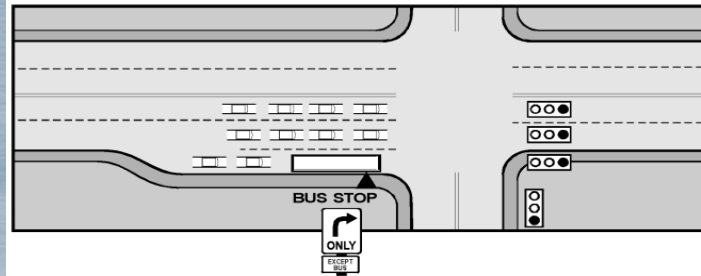




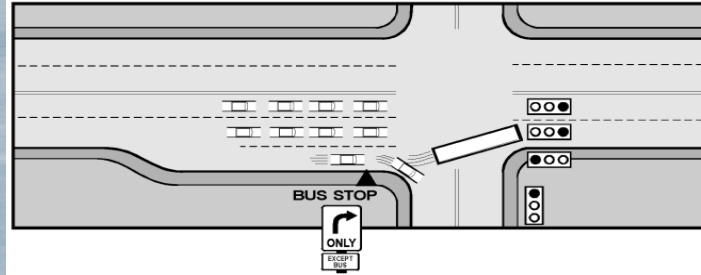
# Enhance RTS Study

## Queue Jump Signal

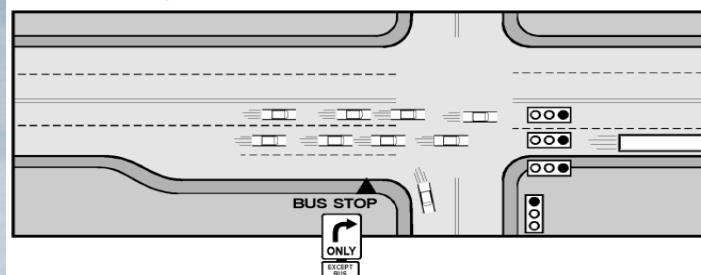
Passengers board during red



Bus receives green before other vehicles



Other vehicles proceed a few seconds later



Source: TCRP Report 100, 2003



# Enhance RTS Study

## Alternatives Screening Process

Tier 1

- **Pre-Screening**

- Has it previously been eliminated?
- Is it clearly ill-suited to address the need?
- Does it have an obvious fatal flaw?

Tier 2

- **Initial Screening**

- Develop evaluation measures that reflect goals.
- Identify available data to use as screening criteria.
- Test routing alternatives using evaluation criteria.
- Select “best performing” routing alternatives and combine.

Tier 3

- **Refined Alternatives Analysis**

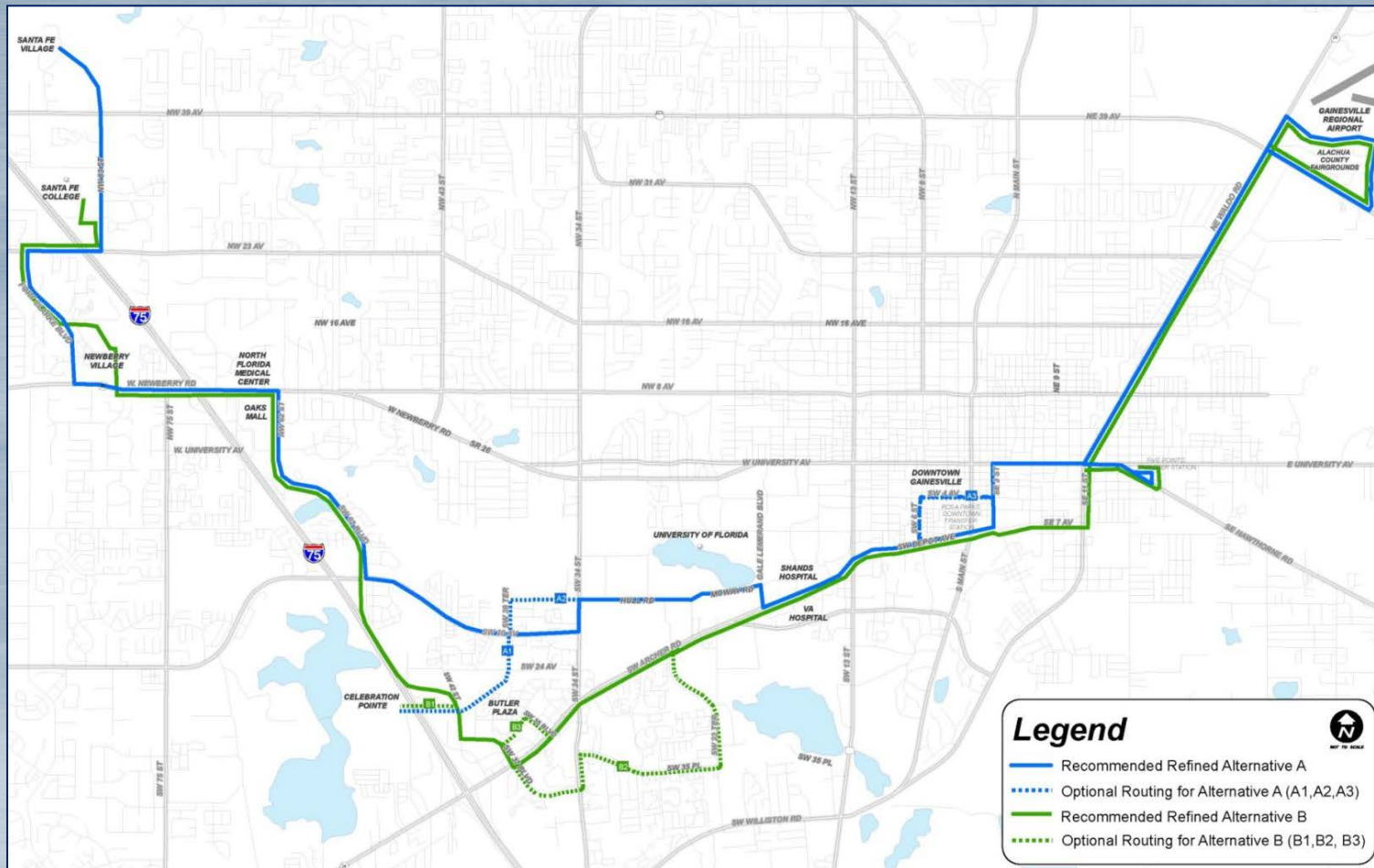
- Develop additional, more rigorous evaluation measures.
- Identify costs, ridership and benefits of alternatives.
- Test refined alternatives using additional evaluation criteria.
- Recommend preferred alternative to community.





# Enhance RTS Study

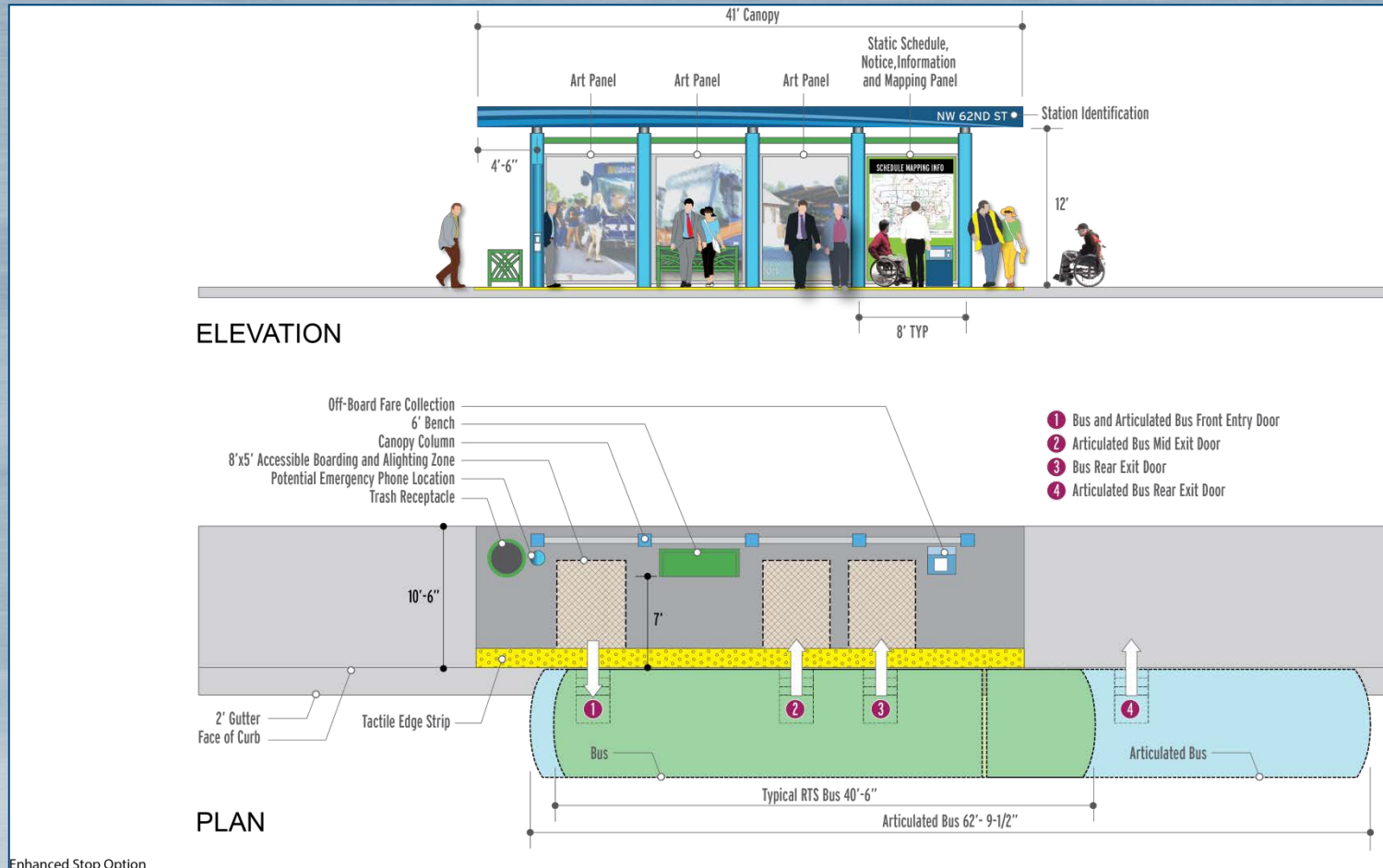
## Refined Corridor Alternatives





# Enhance RTS Study

## Minor Stop Illustration



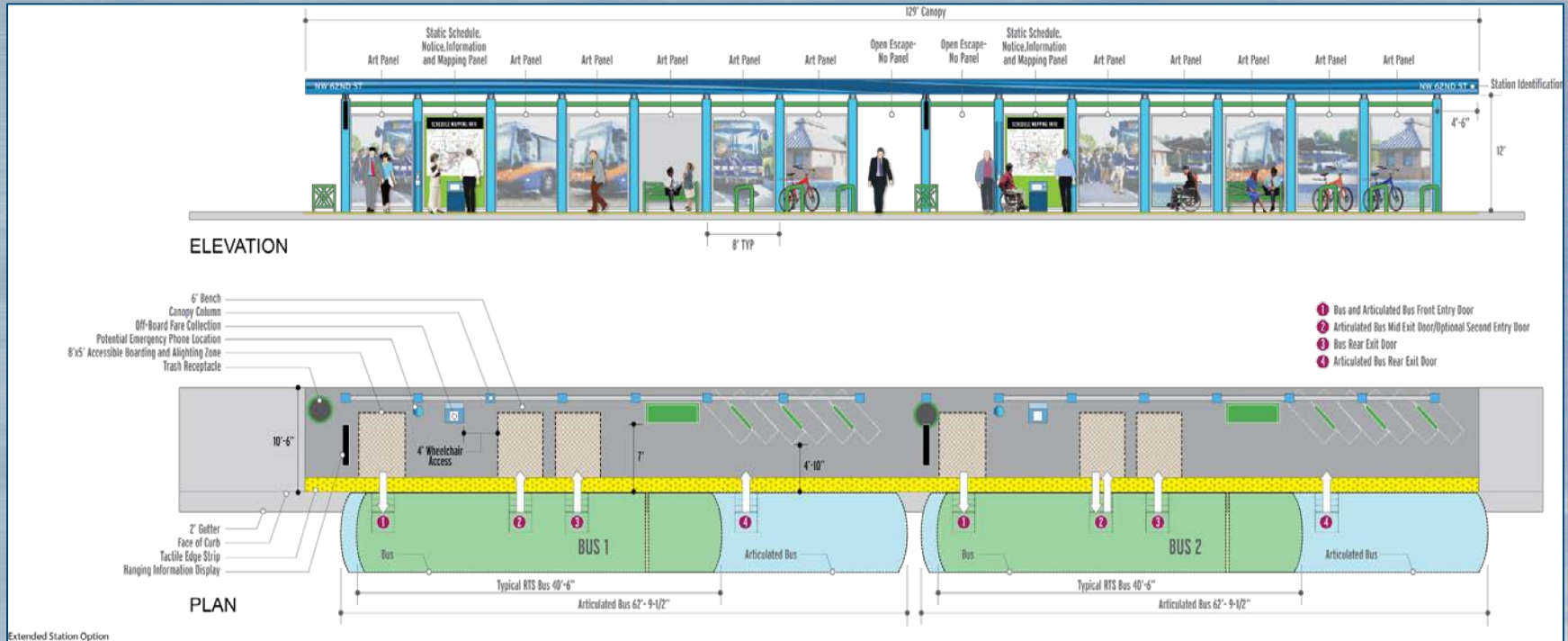
Enhanced Stop Option





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## Major Station Illustration





# Enhance RTS Study

## New Five Points Transfer Station

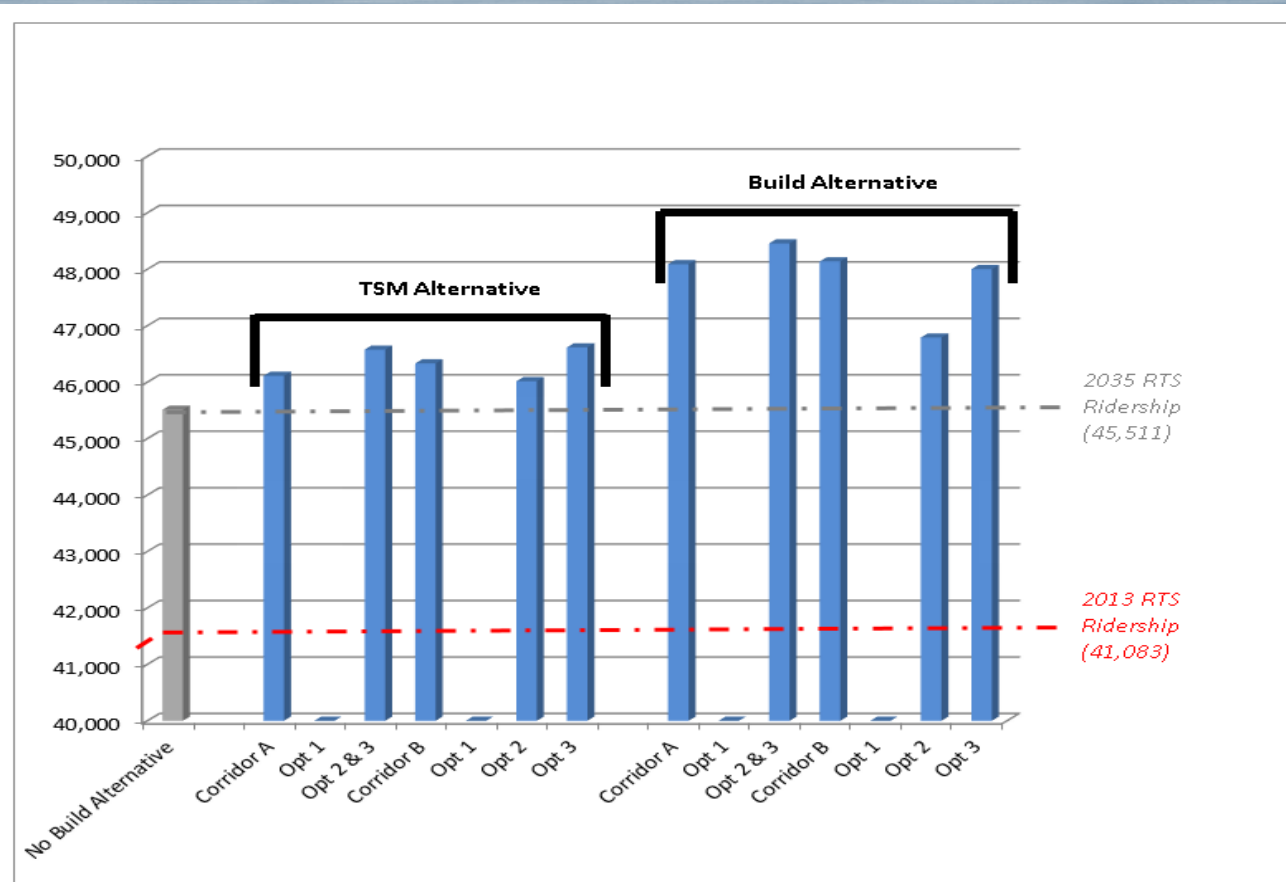






# Enhance RTS Study

## 2035 Systemwide Weekday Ridership

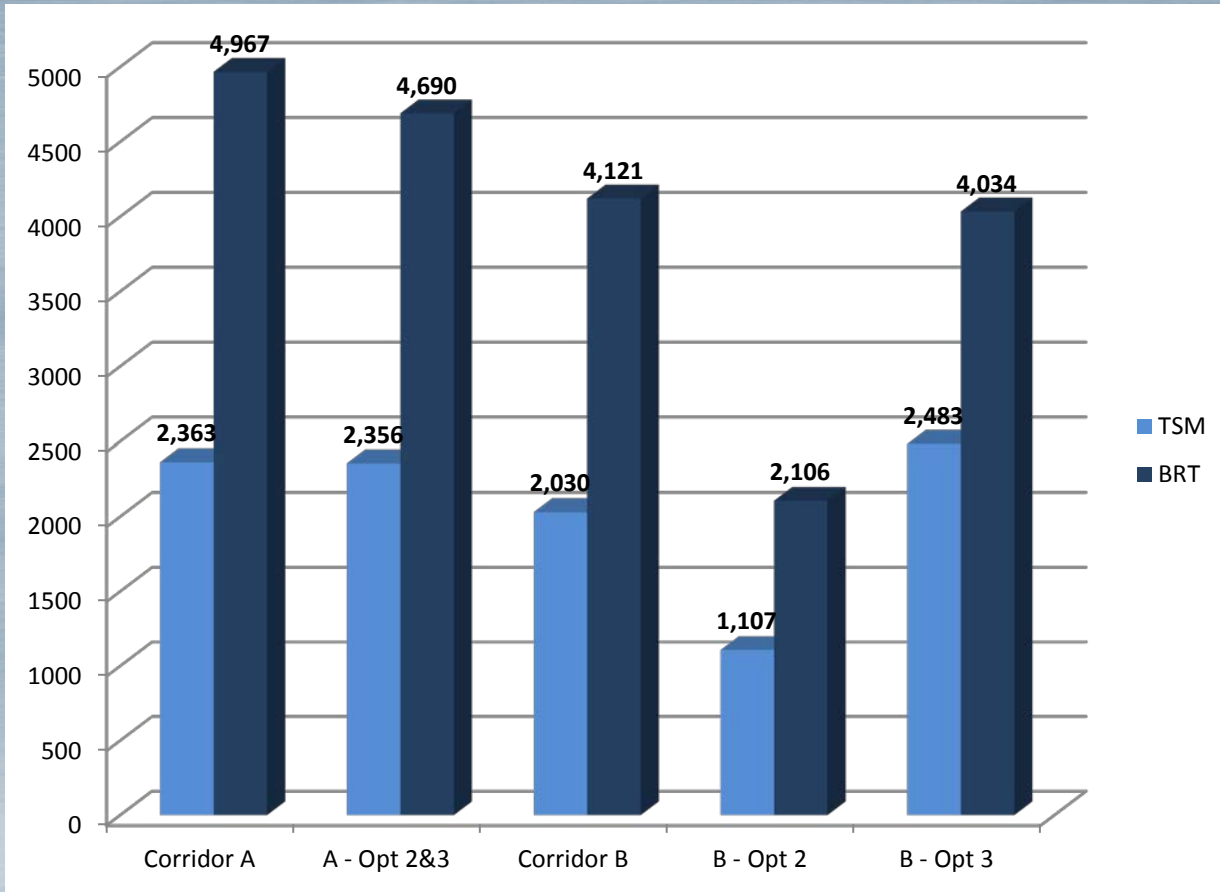


Routing Option	Description
<b>Corridor A</b>	Via SW 20th Ave
<b>A - Opt 1</b>	Celebration Pointe
<b>A - Opt 2&amp;3</b>	Via SW 38th Ter and Innovation Square
<b>Corridor B</b>	Via Archer Rd
<b>B - Opt 1</b>	Celebration Pointe
<b>B - Opt 2</b>	Via south of Archer Rd
<b>B - Opt 3</b>	Via Windmeadows Blvd



# Enhance RTS Study

## 2035 Weekday Route Level Ridership



Routing Option	Description
Corridor A	Via SW 20th Ave
A - Opt 2&3	Via SW 38th Ter and Innovation Square
Corridor B	Via Archer Rd
B - Opt 2	Via south of Archer Rd
B - Opt 3	Via Windmeadows Blvd





# Enhance RTS Study

## TSM and Build Operating Characteristics by Segment (Existing \$)

Corridor Alternative	TSM			BRT		
	Operating Hours Per Year	Estimated Annual Operating Cost	No. of Vehicles Required*	Operating Hours Per Year	Estimated Annual Operating Cost	No. of Vehicles Required*
A - Oaks Mall to Five Points	37,000	\$2,331,000	10	30,000	\$1,826,000	9
A - Oaks Mall to Santa Fe Village	22,000	\$1,385,000	6	15,000	\$1,008,000	5
A - Five Points to Airport	13,000	\$819,000	4	12,000	\$756,000	4
<b>Total</b>	<b>72,000</b>	<b>\$ 4,535,000</b>	<b>20</b>	<b>57,000</b>	<b>\$3,590,000</b>	<b>18</b>
B - Oaks Mall to Five Points	41,000	\$2,582,000	11	30,000	\$1,826,000	9
B - Oaks Mall to Santa Fe College	21,000	\$1,323,000	6	15,000	\$1,008,000	5
B - Five Points to Airport	13,000	\$819,000	4	12,000	\$756,000	4
<b>Total</b>	<b>75,000</b>	<b>\$4,724,000</b>	<b>21</b>	<b>57,000</b>	<b>\$3,590,000</b>	<b>18</b>

\* Assumed 25% Spare Ratio for Build Alternatives, 15% Spare Ratio for TSM Alternatives



## Enhance RTS Study

# TSM and Build Capital Cost by Segment (Existing \$)

Corridor Segment	TSM		BRT	
	Corridor A	Corridor B	Corridor A	Corridor B <sup>1</sup>
Oaks Mall to Five Points	\$8,887,000	\$9,406,000	\$37,819,000	\$46,547,000
Oaks Mall to Santa Fe Village	\$3,502,000	\$3,490,000	\$9,677,000	\$10,287,000
Five Points to Airport	\$2,347,000	\$2,347,000	\$9,202,000	\$9,202,000
<b>Total</b>	<b>\$14,736,000</b>	<b>\$15,243,000</b>	<b>\$56,698,000</b>	<b>\$66,036,000</b>

1. With BAT lane on eastbound Archer Rd from east of SW 16<sup>th</sup> Ave





## Enhance RTS Study

### Added Impact Assessments

- Environmental/Screening
  - Effects to community, cultural and natural resources expected to be minimal
- Market and Development Potential
  - Ability to attract new development
    - Attractiveness variables: walkability, employment density, future land use, job access, change in educational attainment, income level
    - Capacity variables: vacant land, current development density, number of parcels, average parcel size, CRA presence
  - Corridor A scored higher



# Enhance RTS Study

## Tier 3 Performance Measures

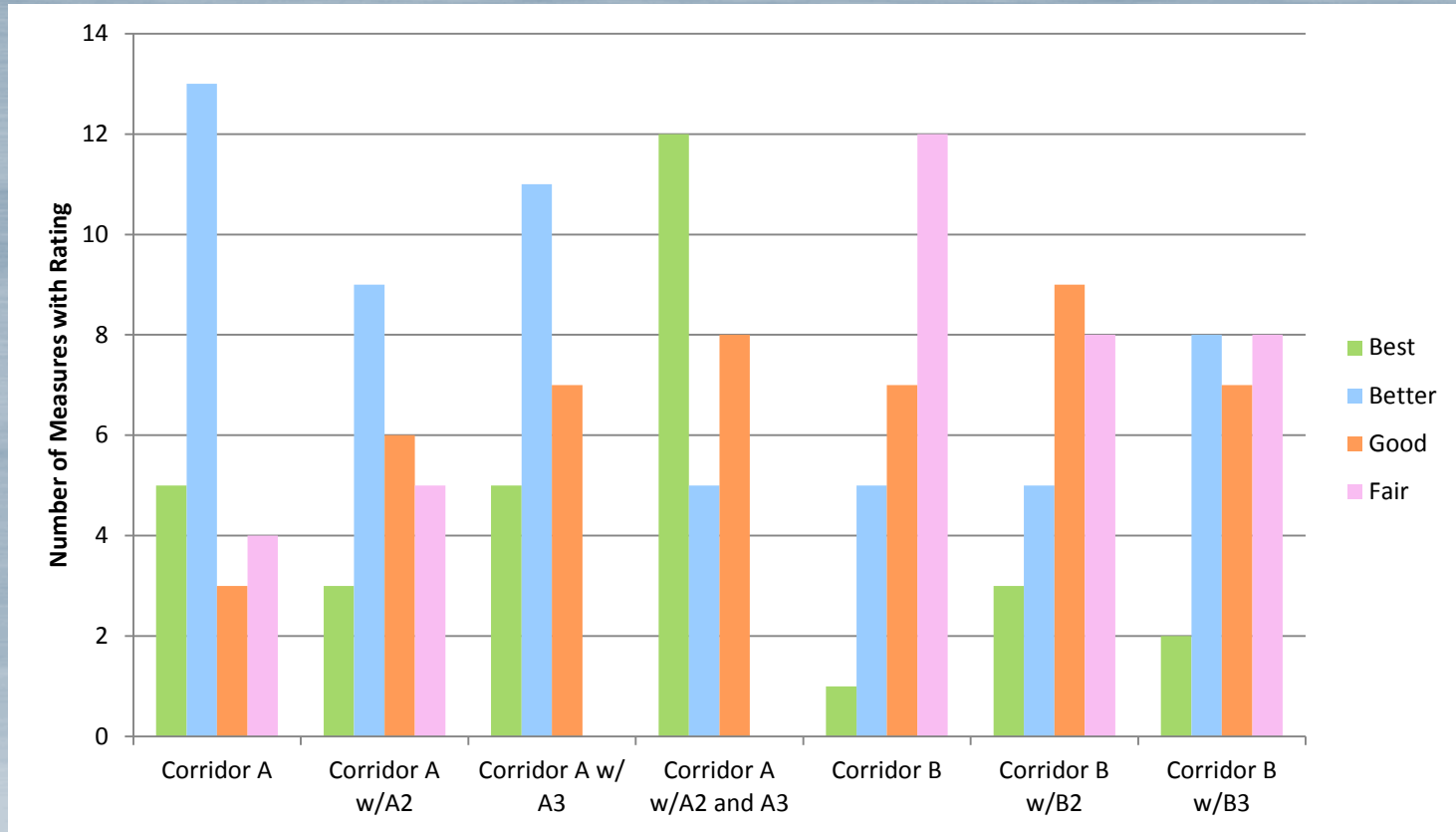
Goal	Local Performance Evaluation Measures
<b>Improve Mobility and Accessibility in Gainesville and Alachua County</b>	Employment Served
	Connections to RTS
	High Ridership Stops Served
	Total Travel Time Savings
	Common Stations with UF Routes
<b>Assure Equitable Transportation Options for the Community</b>	Common Stations with Later Gator
	Persons without Access to a Vehicle
	Persons in One-Car Households
<b>Enhance the Quality of the Environment</b>	Acres of Transit Supportive Development
	Future Mixed Use, Commercial, and High Density Acres Served
	UF Parking Spaces
<b>Enhance the Social Integrity of the Urban Community</b>	Reduction in Vehicle Miles Traveled
	Existing Mixed Use, Commercial, and High Density Acres Served
	Institutional Uses Acres Served
<b>Develop Transportation Options that are Financially Viable</b>	Redevelopment Served
	Ratio of Local Capital Costs to Capital Budget
	Ratio of Proposed O&M to RTS O&M Budget
	Local Share of Capital Cost Per Mile
	Local Capital Cost per Acre of Transit Supportive Areas Served





# Enhance RTS Study

## Local Performance Measures Build Alternatives





## Enhance RTS Study

### FTA Criteria Rating

- Project Justification Criteria
  - Mobility Improvements
    - Trips by non-transit dependent persons plus trips by transit dependent persons multiplied by 2
  - Cost-effectiveness
    - Cost per project trip
  - Economic Development
    - Additional transit-supportive development
  - Environmental benefits
    - Monetized value of environmental benefits
  - Land use
    - Station area development
  - Congestion relief





# Enhance RTS Study

## Project Justification Rating

Criteria	TSM A	TSM B	BRT A	BRT B
Mobility Improvements	Low	Low	Low	Low
Cost-Effectiveness	High	High	Medium-High	High
Environmental Benefits	High	High	High	High
Economic Development*	Medium	Medium	Medium	Medium
Land Use	Medium-Low	Medium-Low	Medium-Low	Medium-Low
Congestion Relief*	Medium	Medium	Medium	Medium
<b>Project Justification Rating</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>

\* FTA has not yet developed specific thresholds for measure, hence the "medium" rating designation



## Enhance RTS Study

### FTA Criteria Rating

- Financial Commitment Criteria
  - Current financial condition of sponsor
  - Commitment of capital and operating funds
  - Reasonableness of financial plan







# Enhance RTS Study

## FY2015 Awarded FTA Small Starts Projects

Project	Location	Length/ Stations	Capital Costs (YOE)	Operating Cost (YOE)	% Small Smarts Funding	Ridership - Trips	Project Justification Rating	Financial Commitment Rating	Overall Rating
Dyer Ave. BRT System	El Paso, TX	12 miles 12 stations	\$35.89 million	\$3.14 million	56.8	4,400 avg. weekday	Medium	Medium	Medium
East Bay BRT	Oakland, CA	9.5 miles 34 stations	\$177.9 million	\$4.99 million	42.1	27,000 avg. weekday, 2,500 daily new	Medium	High	Medium-High
Fourth Plain BRT	Vancouver, WA	6.0 miles 20 stations	\$53.40 million	\$3.19	72.5	5,700 daily linked	Medium-High	Medium	Medium-High
E-W Connector BRT	Nashville, TN	7.1 miles 16 stations	\$174 million	\$3.93 million	43.1	3,800 daily linked	Medium	High	Medium-High
Wave Streetcar	Ft. Lauderdale, FL	2.7 miles 12 stations	\$142.59 million	\$3.01 million	34.8	2,100 daily linked	Medium	High	Medium-High
West Eugene EmX Ext.	Eugene, OR	8.9 miles 13 stations	\$95.57 million	\$1.18 million	78.5	7,400 avg. weekday	Medium	Medium	Medium
East-West Corridor (A)	Gainesville, FL	21.8 miles 38 stations	\$56.7 million	\$3.59 million	NA	5,000 avg. weekday	Medium	TBD	TBD
East-West Corridor (B)	Gainesville, FL	20.4 miles 36 stations	\$66.0 million	\$3.59 million	NA	4,100 avg. weekday	Medium	TBD	TBD



## Enhance RTS Study

### Draft Recommended Alternative

- Derivation of the Draft Recommended Alternative
  - Reflects expressed preference for minimal transit infrastructure level of investment at past public meetings
  - Provides first high frequency route connecting major hubs
  - Ridership
    - No strong ridership impact for BRT Alternatives
  - Evaluation against Local Performance Measures
    - Corridor A identified as the “best” alternative
  - Evaluation against FTA Project Rating Criteria
    - TSM and BRT Alternatives – overall “Medium” rating
- **Conclusion: Initial development of TSM strategy in Corridor A**





## Enhance RTS Study

### Features of TSM A Alternative

- New limited stop service
- Transit Signal Priority
- Five Points Transfer Station





# Enhance RTS Study

## Draft TSM A Implementation Schedule (Through 2025)

	Project Element	Year	Cost
Phase 1	Vehicle acquisition	2015-2017	\$10,432,000
	Land acquisition and construction for Five Points		
	Transit priority treatments		
	Operations	2018-2025	\$23,040,000
	<b>Total</b>		<b>\$33,472,000</b>
Phase 2	Vehicle acquisition	2018-2020	\$4,062,000
	Transit priority treatments		
	Operations	2020-2025	\$10,524,000
	<b>Total</b>		<b>\$14,586,000</b>





# Enhance RTS Study

## Estimated Ridership

Implementation Year	Existing	
	Weekday	Annual
If Implemented Today	2,000	615,000
Year 2035	2,240	691,000



# Enhance RTS Study

## Annual Fare Revenue Impact

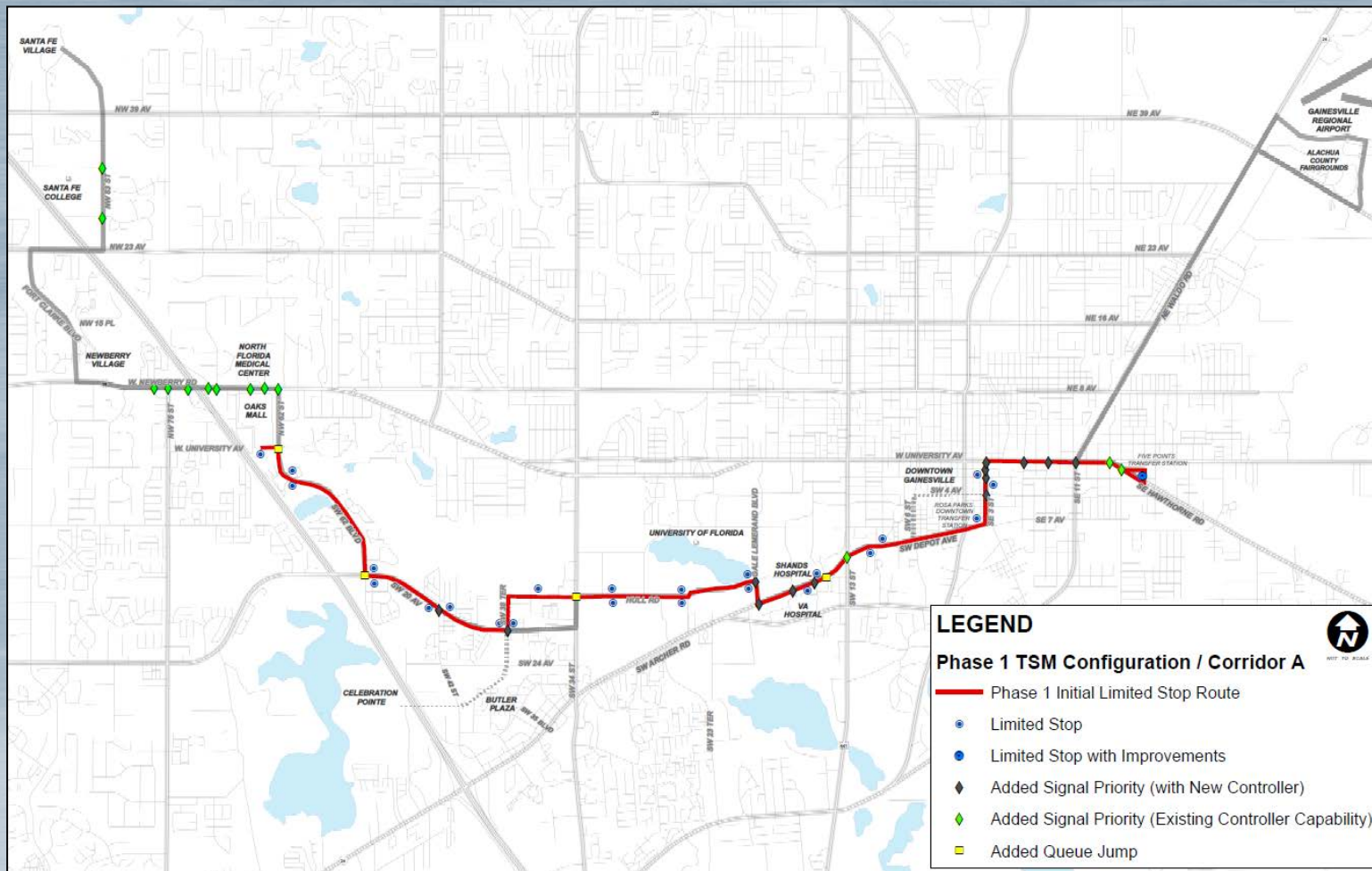
% Riders Charged Fee	If Implemented Today		2035	
	Effectuated Ridership	Fare Revenue	Effectuated Ridership	Fare Revenue
10%	62,000	\$93,000	69,000	\$104,000
50%	308,000	\$462,000	346,000	\$519,000
90%	554,000	\$831,000	622,000	\$933,000





# Enhance RTS Study

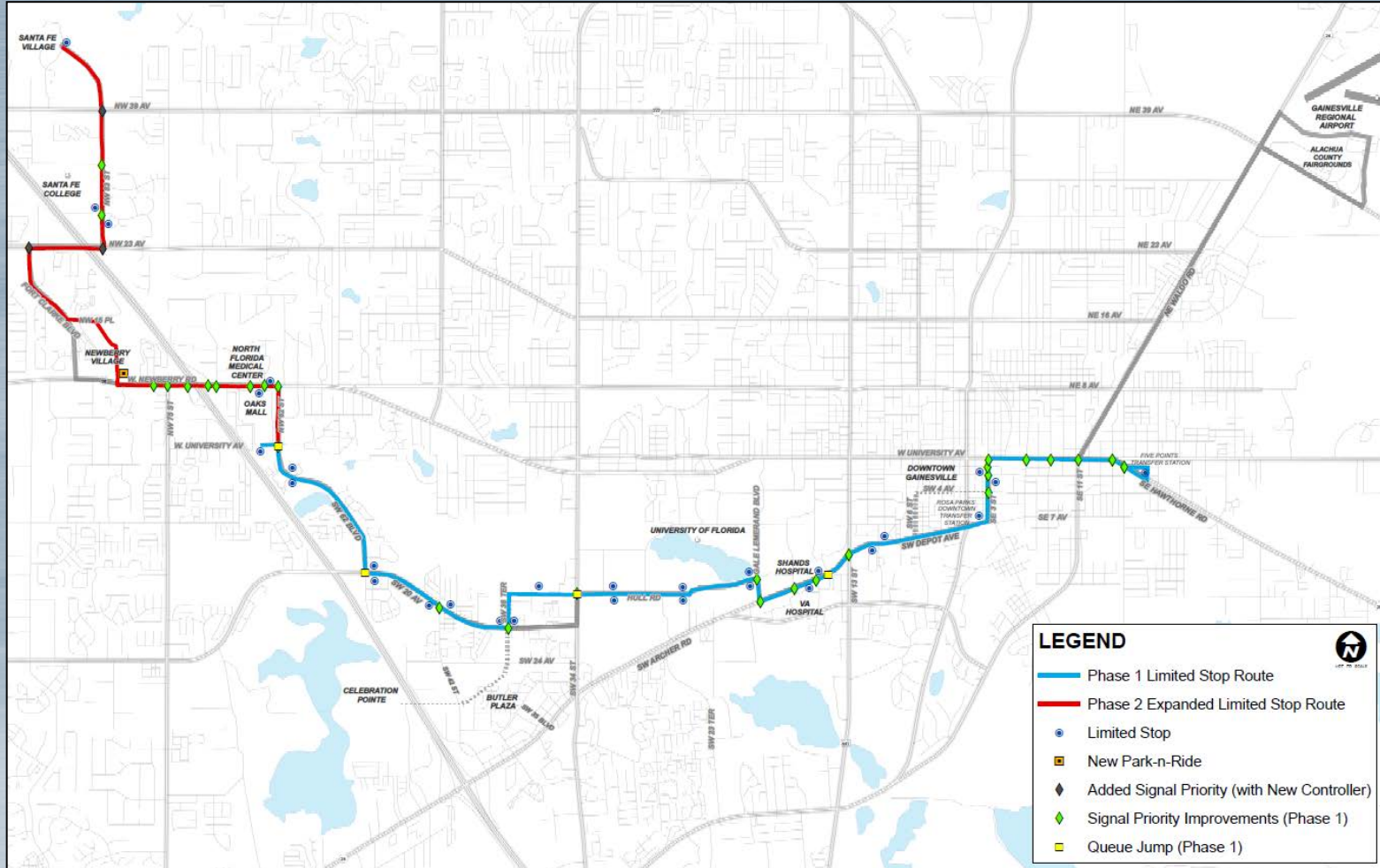
## Phase 1 – Oaks Mall to Five Points





# Enhance RTS Study

## Phase 2 – Oaks Mall to Santa Fe Village







## Enhance RTS Study

### Summary of Recent Public Input

- Project Advisory Working Group did not object with the recommended TSM alternative and Corridor A being the preferred corridor
- At February 26 public meeting, public identified preference for improvements to existing bus service
- Public comment survey posted on study website
  - 31 responses received
  - Comments have echoed those expressed at public meeting





# Enhance RTS Study

## Next Steps

- MTPO Technical Advisory Committee – April 2, 2014
- MTPO Citizens Advisory Committee – April 2, 2014
- MTPO Board Meeting – April 14, 2014
  - Decision if LPA goes into Work Program (or at later date)
- Review study results with FTA







Legislative ID# 130778A

## **Enhance RTS Study**

### **Contact Information**

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# Enhance RTS Study

# Questions?



RENAISSANCE PLANNING GROUP

Prepared by Matthew Muller

**PARSONS  
BRINCKERHOFF**