Bus Transit Options

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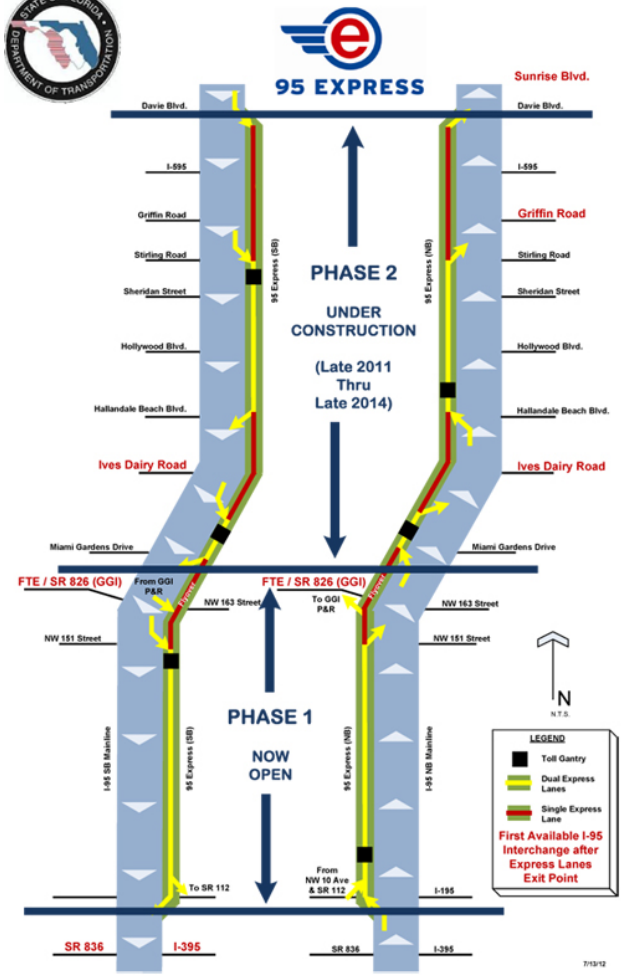
OFFICE OF FREIGHT, LOGISTICS & PASSENGER OPERATIONS

Envisioning a Regional Express Bus System: I-95 and I—595 Express Lanes



- From I-75 Sawgrass Expressway interchange to the I-595/I-95 interchange
- 10.5 miles
- Design and construction cost is approximately $1.2 billion

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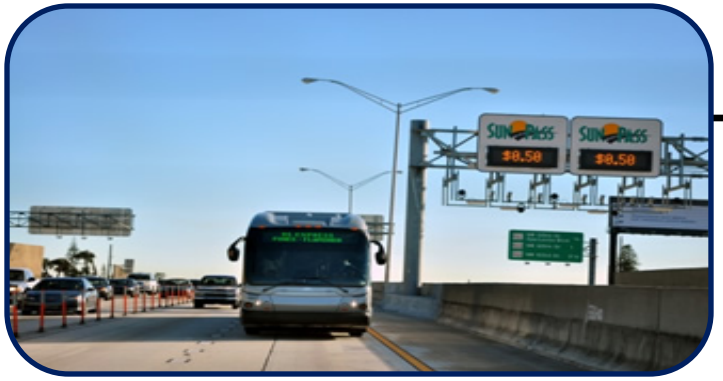
Benefits and Operational Characteristics of Express Bus Service in Miami, FL



95 EXPRESS

- offers reliable travel in the express lanes without the tolls
- Average travel speeds in the Express Lanes increased from 18mph in 2008 to 55 mph in 2010 while that of the general purpose lanes increased from 18mph to 32mph

Miami Beach Airport Flyer

- service to and from the Miami International Airport
- bus offers luggage racks and comfortable seating
- utilizes SMART card

Kendall Cruiser

- provides 12-minute frequency
- 60-foot diesel-electric hybrid buses with comfortable seating and free Wi-Fi

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Miami – Dade County Bus Trolley System

THE CITY OF MIAMI TROLLEY

- Bicycle racks available in front and ADA accessible
- Free fare and ADA accessible
- Connects passengers to sports stadiums (Heat, Marlins, and Dolphins)

CORAL GABLES TROLLEY

- Connecting Metrorail stations with areas for shopping and popular residential hubs
- 5.5 miles corridor
- Averages 4,000 riders a day
- Free fare and ADA accessible
- Funded partly by the People's Transportation Plan (half a penny of the Miami-Dade County's sales surtax)

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What Qualifies as Bus Rapid Transit (BRT)?

- **MAP-21 establishes three new definitions for BRT**
  - Title 49, Section 5302(a)(2) Bus Rapid Transit System
  - Small Starts Corridor-based Bus Rapid Transit Project – Section 5309(a) (3)
  - New Starts Fixed Guideway Bus Rapid Transit Project – Section 5309(a) (4)

- **Characteristics of BRT according to the new definitions**

Running ways

- majority of the line operates in a separated right-of-way
- emulate rail fixed guideway

Service and Operations Plan

- utilize traffic/ transit signal priority (TSP)
- short headway bidirectional services

Stations

- have defined stations

Other Features

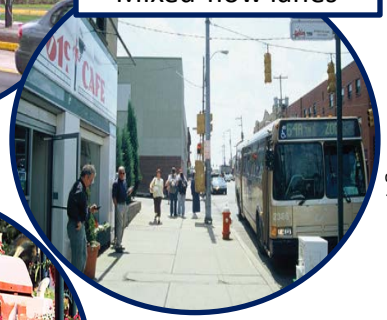
- features defined by the Secretary
- features that are geared towards (1) achieving a high-quality public transportation services and (2) stimulating economic growth

Running Ways

On-street running ways

Eugene, OR

Mixed-flow lanes



Pittsburgh, PA

Orlando, FL

Bus-Only Streets

Denver, CO

Off-street running ways

Expressway Bus Lanes

Managed Toll Lane

Miami, FL

At-grade transitways

Los Angeles, CA

Grade separated transitways

Pittsburgh, PA (East Busway)

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BRT Station Features

distinct bus design and branding

real time transit information

pre-boarding payment system

raised platform for level boarding

passenger amenities and information

Las Vegas, NV

Cleveland, OH

Kansas City, MS

BRT Features

Based on ITDP, The BRT Standard

Source: Duke University – Center on Globalization, Governance and Competitiveness

System Costs: BRT vs LRT

BRT		LRT
$10.24 million	**BUILDING COSTS**	$26.4 million
$ 3.018 million/ mile	**LAND ACQUISITION COSTS**	$ 1.52 million/ mile
$ 3.60	**COST PER VEHICLE REVENUE MILE**	$ 9.30
$496.90	**COST PER THOUSAND PASSENGER MILE**	$578.00
9, 000 – 30,000	**CAPACITY PER HOUR**	12,200 – 26,900

Note:

**In 1990 US Dollars*

**Source:* Zhang, M. (2009). Bus Versus Rail: Meta-Analysis of Cost Characteristics, Carrying Capacities, and Land Use Impacts. *Transportation Research Board*, 2110, 87-95.

Advantages and Disadvantages of BRT

Advantages

- can be less costly to implement than a rail transit line and may provide similar capacity
- accessible, safe, secure, and attractive stations
- does not always require the extensive acquisition of rights-of-way
- flexible, can leave a guideway

Disadvantages

- lower seating capacity compared to rail transit
- may have **slower** guide way operations specially if segments operate on street in mixed-traffic
- may not generate similar levels of economic development
- one operator for multiple train cars, vs. one operator for each bus

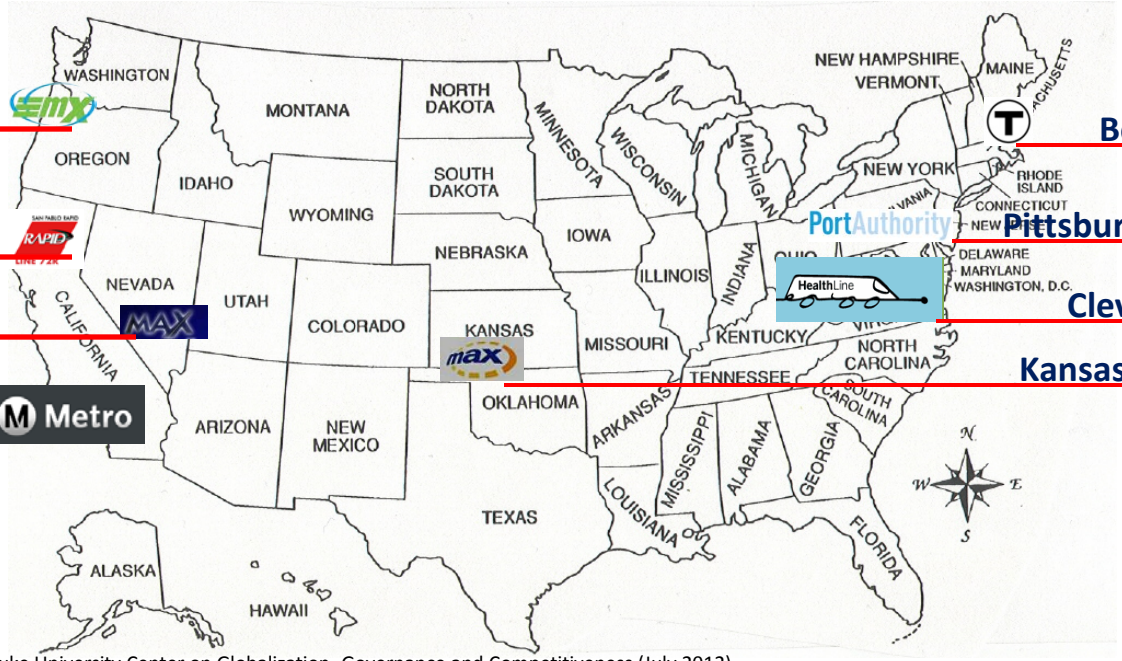
BRT SYSTEM PERFORMANCE

Eugene Emerald Express

Oakland San Pablo Rapid

Las Vegas MAX

LA Metro Rapid



Boston Silver Line

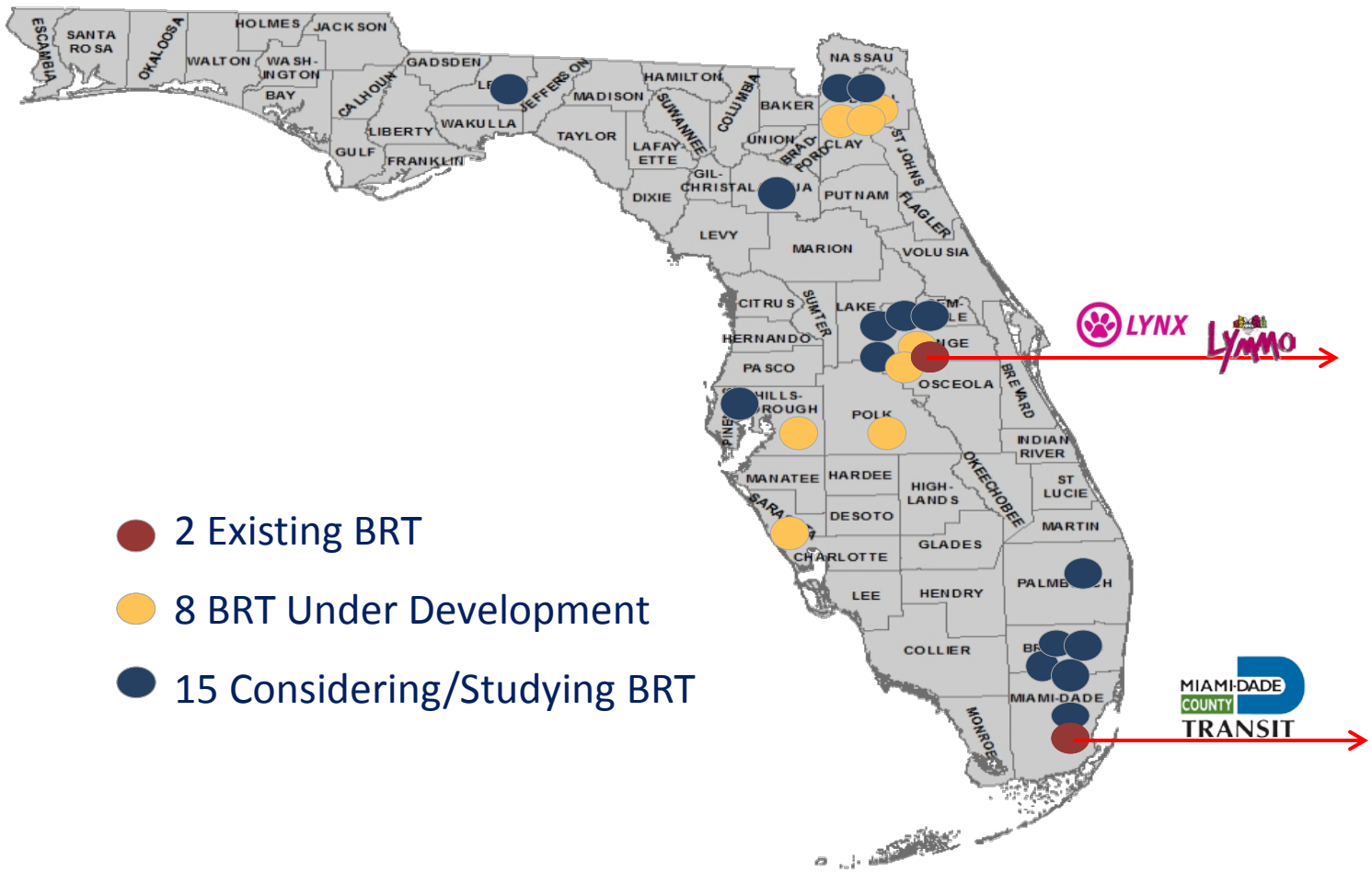
Pittsburgh MLK Jr. East Busway

Cleveland's RTA Healthline

Kansas City MAX

Source: Duke University Center on Globalization, Governance and Competitiveness (July 2012)

Current BRT Activities in Florida



- 2 Existing BRT
- 8 BRT Under Development
- 15 Considering/Studying BRT

Operational BRT Systems in Florida

MIAMI, FL: SOUTH MIAMI-DADE BUSWAY

MIAMI-DADE COUNTY TRANSIT

running ways

- dedicated lanes

ITS technologies

- AVL
- transit signal priority

ridership

- weekday average: 25,000

station design

- Patterned after neighborhood's ambience and history
- 56 shelters, 5 park -and - ride lots

Operational BRT Systems in Florida

ORLANDO, FL: LYNX LYMMO

running ways

- on-street bus-only lane

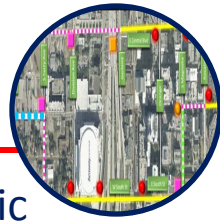
ITS technologies

- AVL
- Automated Passenger Counting (APC)
- real time information (stops and vehicles)
- transit signal priority

ridership

- weekday average: 5,000

East-West LYMMO Expansion



- will largely operate in mixed traffic
  - exclusive BRT: 1.77 miles (52%)
  - mixed use: 1.90 miles (48%)

Parramore BRT Expansion

- will operate in a designated bus lane
- transit-oriented development project (providing transit service to the **Creative Village**)

BRT Options in the Florida East Coast Oleander Corridor

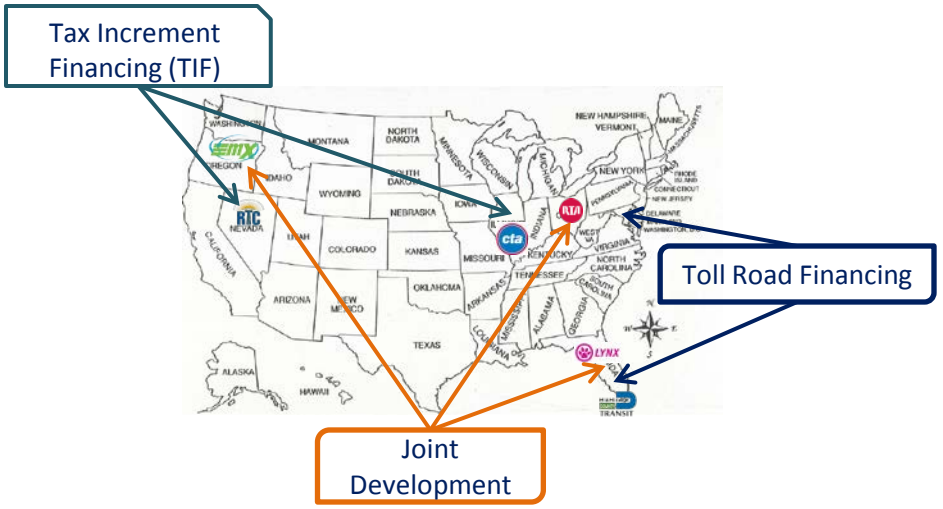
- In 2008 the Miami-Dade Metropolitan Planning Organization completed the Florida East Coast Transit Connection Study which identified bus rapid transit option as the better transit alternative to incorporate in the existing 100’ FEC Oleander corridor.
- Miami-Dade Expressway Authority (MDX) is involved in forwarding this project concept
- Cost for building busway in the corridor is approximately $39 million for one lane option and $41 million for a two lane option

BRT Funding Options

Federal and State Financing

- **New Starts**
  - Projects requiring $75 million or more FTA funding
- **Small Starts**
  - Projects requiring less than $75 million FTA, total project costs under $250 million
- **Very Small Starts**
  - Projects requiring less than $50 million FTA
- **State New Starts**
  - Helps projects qualify to bring in FTA New Starts dollars for needed projects
  - The state provides up to ½ of the non-federal share

Alternative Financing Options



Additional Resources

Useful Links

National Bus Rapid Transit Institute (NBRTI)

- http://www.nbrti.org/

Bus Rapid Transit Policy Center

- http://gobrt.org/

Questions and Comments

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Thank You!