



**Asia-Pacific
Economic Cooperation**

2011/SOM1/EWG/WKSP3/005

Agenda Item: III-B-1(a)

Essential Elements of BRT

Submitted by: National Bus Rapid Transit Institute



**APEC Cooperative Energy Efficiency
Design for Sustainability - Energy Efficient
Urban Passenger Transportation
San Francisco, United States
14–16 September 2011**



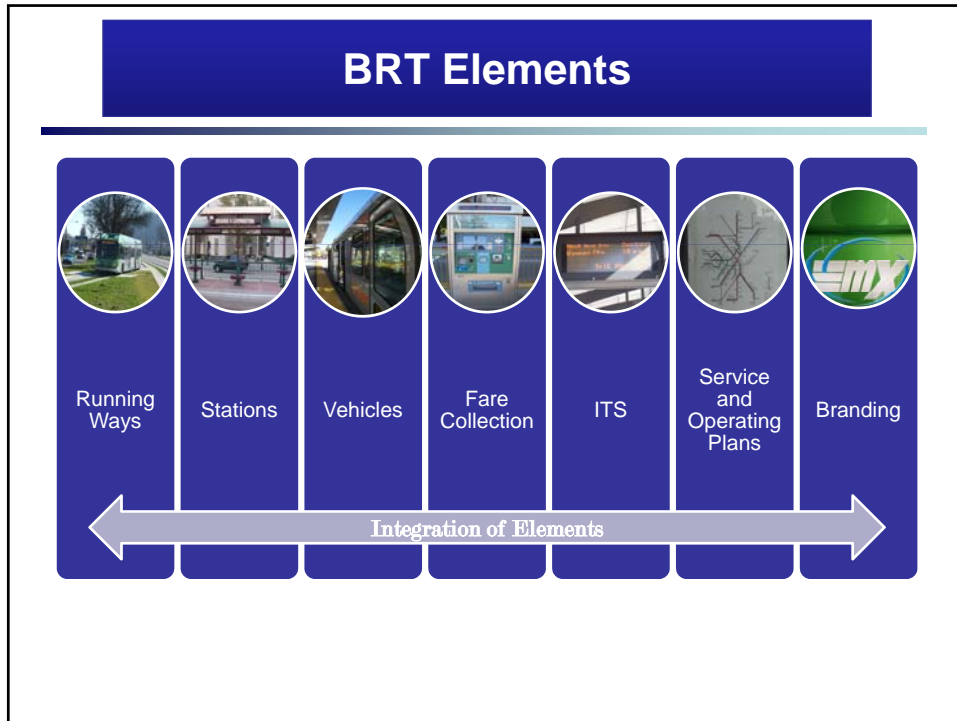
What is Bus Rapid Transit?

BRT is an enhanced bus system that operates on bus lanes or other transitways in order to combine the flexibility of buses with the efficiency of rail.

BRT operates at faster speeds, provides greater service reliability and increased customer convenience.

BRT uses a combination of advanced technologies, infrastructure and operational investments that provide significantly better service than traditional bus service.

Source: Federal Transit Administration



Running Ways



Bus Only Lane

Stations



Kansas City MAX Station



Cleveland HealthLine Station



Everett Swift Station

Stations

- Distinct design
- Convey BRT brand
- Permanent, weather protected



- Passenger info and amenities
- Spaced ½ to 1 mile apart
- Access is important
- Raised platforms for level boarding

Vehicles

- Conventional or Stylized
- Standard or Articulated
- Multiple wide doors



- May have doors on both sides
- High or low floor
- **Conveys image and identity**

Fare Collection

- Fare Payment Process
 - On Board Payment
 - Off Board Payment
 - Conductor validated
 - Barrier enforced
 - Proof of payment
- Fare Payment Media
 - Cash
 - Magnetic Stripe
 - Smart Card



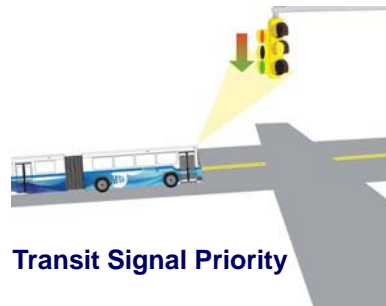
Intelligent Transportation Systems



Next Bus Arrival Signs



Precision Docking



Transit Signal Priority

Service and Operating Plans

- Service Frequency
 - 10 minutes peak
 - 15 minutes off peak
- Station Spacing
 - Preferably ½ to 1 mile apart
- Method of Schedule Control
 - Schedule based
 - Headway based

Branding Elements



Everett Swift has unique color scheme and logo

Los Angeles Orange Line

- Began Oct. 2005
- \$350M, \$25M per mile
- 14 mile busway
- 4-5 minute headways
- Projected ridership:
7,500 per day
- Actual: 23,900 per day
(Oct 2010)



Cleveland HealthLine

- Began Aug. 2008
- \$200M, \$28.5M per mile
- 7 miles (4.4 miles bus
lanes)
- 5 minute headways
- Ridership: 12,300 per day
- 60% increase over old
Route 6



Kansas City MAX

- Began July 2005
- \$21M, \$3.5M per mile
- 6 miles (3.75 miles bus lanes)
- 10 minute headways
- Ridership: 4,400 per day
- Ridership doubled over previous service



Kansas City MAX

Timeframe

- | | |
|------------------------|-----------|
| • Planning | 2001 |
| • Formal partnerships | 2003 |
| • Design & engineering | 2003/2004 |
| • Vehicles ordered | 2004 |
| • Construction | 2004/2005 |
| • Operational | July 2005 |

Eugene EmX

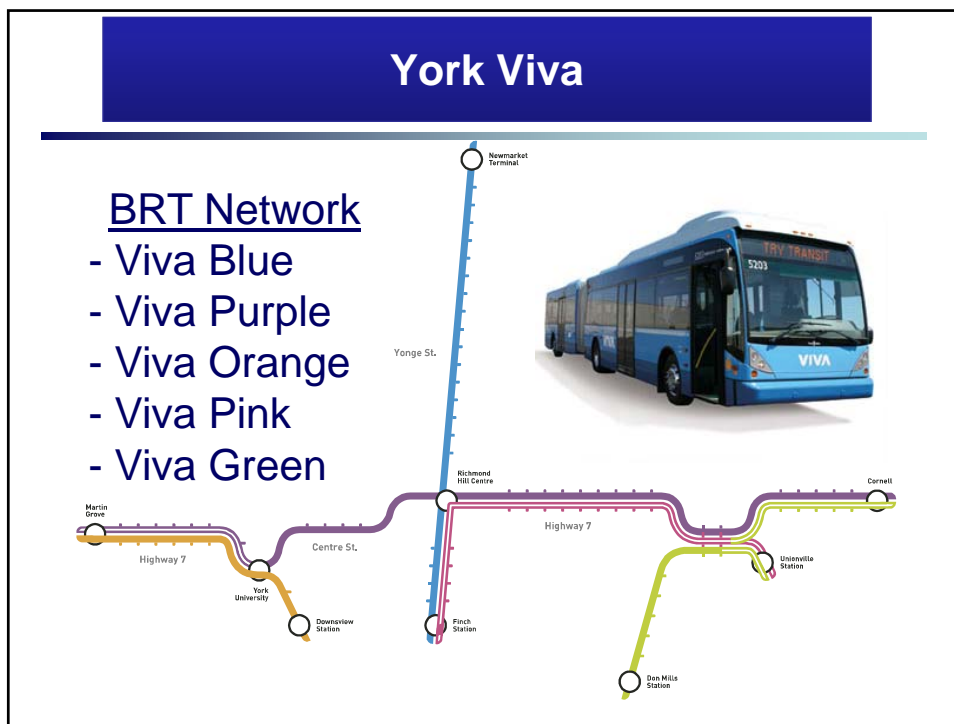
- Began Jan. 2007
- \$25M, \$6.25M per mile
- 4 miles (2.6 miles bus lanes)
- 10 minute headways
- Ridership: 4,700 per day
- 74% increase over old Route 11



Las Vegas SDX



- Began March 2010
- \$54M, \$6M per mile
- 9 miles (2.25 miles bus lanes)
- 15 minute headways
- Ridership: 14,000 per day





York Viva

- Opened in stages
 - Sep. 05 to Jan. 06
- \$150M, \$2.7M per mile
- 55 miles collectively
- 70+ stations
- 15 minute headways
- Ridership: 10,000 per day

York Viva



York Viva



York Viva



Real Estate Development



Pittsburgh East Busway

\$500M in development

Retail, residential, office



Ottawa Transitway

\$700M in development

Retail, residential, office

Real Estate Development



Cleveland Euclid Corridor

\$4B in development
Retail, residential, office



Boston Washington St.

\$650M in development
Retail, residential, office, health

Additional Information

National BRT Institute

Search our BRT Database

Learn
Plan
Fund
Build
Promote
Evaluate

What is Bus Rapid Transit?
BRT is an innovative, high capacity, lower cost public transit solution that can significantly improve urban mobility. This permanent, integrated system uses buses or specialized vehicles on roadways or dedicated lanes to quickly and efficiently transport passengers to their destinations, while offering the flexibility to meet transit demand. BRT systems can easily be customized to community needs and incorporate state-of-the-art, low-cost technologies that result in more passengers and less congestion.

Our Mission
The Mission of the National BRT Institute is to facilitate the sharing of knowledge and innovation for increasing speed, efficiency, and reliability of high-capacity bus service through the implementation of BRT systems in the United States.

The 2009 FTA Characteristics of Bus Rapid Transit for Decision Making is now available for [download](#).

BUS RAPID TRANSIT

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BRT News

Cleveland's Euclid Corridor was featured this summer in the [Landscape Architecture Magazine!](#)

Check out this poster, "[Developing a Safety Prompt List for Bus Rapid Transit in New York City](#)", presented at ITE's Annual Meeting in St. Louis

Click [here for a new report](#) on bus priority treatment guidelines!

ITDP releases a [new report rating BRT systems](#).

Who currently operates or is planning/implementing BRT and what are the related facts for each system? [Click here for information!](#)

The National BRT Institute is a part of the [Center for Urban Transportation Research at UCF](#)

www.nbrti.org