Bus Rapid Transit Applications
Phase II Report
What is Bus Rapid Transit?

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.

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

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

Source: Federal Transit Administration
Study Purpose

Phase 1 report (Feb. 2010)
- Discussed BRT in general
- Summarized previous South Florida BRT studies

Phase 2 report
- Builds on Phase 1 report
- Profiles 8 U.S. BRT systems
- Includes BRT “Heavy” to “Lite”
Profiled BRT Systems

- Eugene EmX
- San Pablo Rapid
- Las Vegas MAX
- Los Angeles Metro Rapid
- Los Angeles Orange Line
- Kansas City MAX
- Cleveland HealthLine
- Boston Silver Line
<table>
<thead>
<tr>
<th>Agency</th>
<th>Service Area (square miles)</th>
<th>Service Area Population</th>
<th>Density</th>
<th>2009 Passenger Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>LACMTA</td>
<td>1,513</td>
<td>8,626,817</td>
<td>5,702</td>
<td>386,029,758</td>
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<tr>
<td>MBTA</td>
<td>3,244</td>
<td>4,510,400</td>
<td>1,390</td>
<td>100,769,313</td>
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<td>RTC</td>
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<td>1,986,146</td>
<td>7,093</td>
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<td>AC Transit</td>
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<td>3,888</td>
<td>60,468,401</td>
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<td>GCRTA</td>
<td>458</td>
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<td>3,083</td>
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<td>BCT</td>
<td>410</td>
<td>1,766,476</td>
<td>4,308</td>
<td>36,804,682</td>
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<tr>
<td>KCATA</td>
<td>919</td>
<td>1,445,584</td>
<td>1,573</td>
<td>15,004,166</td>
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<tr>
<td>LTD</td>
<td>241</td>
<td>291,600</td>
<td>1,210</td>
<td>11,732,650</td>
</tr>
</tbody>
</table>
Summary of the 8 BRT Systems

- Route Lengths: 2.4 to 26 miles
- Dedicated Bus Lanes: 6 of the 8 BRTs
- Transit Signal Priority: All 8 BRTs
- Queue Jumper: 3 of the 8 BRTs
- Fare Collection: 4 collect off-board
- Median Stations: 2 of the 8 BRTs
- Service Frequency: Ranges from every 5 to every 12 minutes
Highlights from Interviews

Branding

• In Cleveland, BRT was marketed as rubber-tired rail
• In L.A., Metro Rapid buses associated with faster service
• In K.C., riders don’t think of the MAX as a bus

2008 - Cleveland Clinic and University Hospitals win naming rights to Cleveland HealthLine
Highlights from Interviews

BRT Design

- BRT design is critical
- Make route easy to understand
- High frequency service
- No need to consult schedule
<table>
<thead>
<tr>
<th><strong>Wilshire &amp; Ventura Blvd. Metro Rapid</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year Started</strong></td>
</tr>
<tr>
<td>• June 2000</td>
</tr>
<tr>
<td><strong>Capital Costs</strong></td>
</tr>
<tr>
<td>• $8.2M combined</td>
</tr>
<tr>
<td><strong>Corridor Length</strong></td>
</tr>
<tr>
<td>• 26 miles Wilshire Blvd.</td>
</tr>
<tr>
<td>• 16 miles Ventura Blvd.</td>
</tr>
<tr>
<td><strong>Ridership</strong></td>
</tr>
<tr>
<td>• 42,000 per day Wilshire</td>
</tr>
<tr>
<td>• 4,800 per day Ventura</td>
</tr>
<tr>
<td><strong>Headways</strong></td>
</tr>
<tr>
<td>• Every 3 min; Every 5-7 min</td>
</tr>
</tbody>
</table>
## Boston Silver Line

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year Started</strong></td>
<td>July 2002</td>
</tr>
<tr>
<td><strong>Capital Costs</strong></td>
<td>$27.3M; $12.1M per mile</td>
</tr>
<tr>
<td><strong>Corridor Length</strong></td>
<td>2.4 miles (2.2 of bus lane)</td>
</tr>
<tr>
<td><strong>Ridership</strong></td>
<td>13,000 per day</td>
</tr>
<tr>
<td><strong>Headways</strong></td>
<td>Every 10 minutes</td>
</tr>
</tbody>
</table>
San Pablo Rapid

**Year Started**
- June 2003

**Capital Costs**
- $3.2M; $230K per mile

**Corridor Length**
- 14 miles mixed traffic

**Ridership**
- 5,800 per day

**Headways**
- Every 12 minutes
Las Vegas MAX

Year Started
- June 2004

Capital Costs
- $20.3M; $2.6M per mile

Corridor Length
- 7.5 miles (4.5 of bus lane)

Ridership
- 7,500 per day

Headways
- Every 12 to 18 minutes
Kansas City MAX

Year Started
- July 2005

Capital Costs
- $21M; $3.5M per mile

Corridor Length
- 6 miles (3.75 of bus lane)

Ridership
- 6,000 per day

Headways
- Every 10 minutes
Los Angeles Orange Line

**Year Started**
- October 2005

**Capital Costs**
- $304.6M; $21M per mile

**Corridor Length**
- 14.5 mile busway

**Ridership**
- 23,900 per day

**Headways**
- Every 4-5 minutes
Eugene EmX

Year Started
• January 2007

Capital Costs
• $25M; $6.25M per mile

Corridor Length
• 4 miles (2.5 of bus lane)

Ridership
• 7,200 per day

Headways
• Every 10 minutes
Cleveland HealthLine

- **Year Started**
  - August 2008

- **Capital Costs**
  - $197M; $27.7M per mile

- **Corridor Length**
  - 7.1 miles (4.4 of bus lane)

- **Ridership**
  - 12,000 per day

- **Headways**
  - Every 5 minutes
Premium Rapid Bus

- 1,700 to 2,999 daily riders
- Operates in mixed traffic
- 10 minute peak frequency
- Transit signal priority
- Off-board fare collection
- Real-time passenger info
- Articulated low-floor vehicles
Premium High Capacity

- 3,000 or more daily riders
- Fixed guideway/dedicated lane on at least 50% of project
- 5 minute peak frequency
- Transit signal priority
- Off-board fare collection
- Real-time passenger info
- Articulated low-floor vehicles
### How do the 8 BRTs measure up?

<table>
<thead>
<tr>
<th></th>
<th>Bus Lane</th>
<th>Headway</th>
</tr>
</thead>
<tbody>
<tr>
<td>L.A. Metro Rapid</td>
<td>✅</td>
<td></td>
</tr>
<tr>
<td>Boston Silverline</td>
<td>❌</td>
<td>✅</td>
</tr>
<tr>
<td>San Pablo Rapid</td>
<td>✅</td>
<td></td>
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<tr>
<td>Las Vegas MAX</td>
<td>❌</td>
<td></td>
</tr>
<tr>
<td>K.C. MAX</td>
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<td>✅</td>
</tr>
<tr>
<td>L.A. Orange Line</td>
<td>❌</td>
<td>✅</td>
</tr>
<tr>
<td>Eugene EmX</td>
<td>❌</td>
<td>✅</td>
</tr>
<tr>
<td>Cleveland HealthLine</td>
<td>❌</td>
<td>✅</td>
</tr>
</tbody>
</table>

- **Red**: Premium High Capacity Transit
- **Blue**: Premium Rapid Bus
- **White**: Neither
To get a copy of the report

www.nbrti.org
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