Bus Rapid Transit (BRT) Basics

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Is there a way to bridge the gap?
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
BRT Spectrum

*BRT – “Lite”*  
Swift BRT - Everett  
$2–5 million per mile

*“Hybrid” BRT*  
Eugene EmX  
$5–10 million per mile

*Full BRT*  
Orange Line - LA  
$10–30 million per mile
It’s the difference between this

Source: WCVB TV, Boston
And this

Source: RTC Southern Nevada
Between this...

Source: Flickr, Photo by Complete Streets
And this

Source: NBRTI
Between this

Source: Flickr, Ottawa Bus Gallery
And this

Source: Los Angeles County Metropolitan Transportation Authority
Elements of BRT

It’s no single element, but the combination of elements that makes BRT systems successful.
Elements of BRT
Elements of BRT

Vehicles
Elements of BRT

Enhanced Stations
Elements of BRT

Branding
Vehicles

BRT can use standard vehicles

NABI Bus
Metro Rapid, Los Angeles
BRT can use semi-stylized vehicles

Gillig Bus
MAX BRT, Kansas City
Van Hool Bus
MAX BRT, Salt Lake City

Note the 3 doors.
Vehicles

New Flyer Bus
EmX BRT, Eugene
Vehicles

NABI Bus
Orange Line, Los Angeles
Vehicles

Wrightbus
SDX BRT, Las Vegas
Stations can be simple

San Pablo Rapid, Oakland
Stations

MetroRapid Station, Los Angeles
Stations

Stations can be simple but aesthetic

MAX Station, Kansas City
Stations

Same station at night
Stations

Curbside Station

Median Station

MAX Stations
Salt Lake City
Stations can be enhanced

SDX Station, Las Vegas
Stations

Stations can simulate rail stations

HealthLine Station, Cleveland
Stations

EmX Station, Eugene
Stations

Orange Line Station, Los Angeles
Station Features

Ticket Vending Machines

MAX BRT in Salt Lake City uses repurposed parking ticket vending machines
Station Features

Real Time Bus Information
Station Features

Raised Platforms for Level Boarding
Station Features

Public Art
Station Features

Public Art
Running Way

MAX Bus Only Lane, Salt Lake City
Running Way

EmX Running Way, Eugene, OR
Running Way

I-35W Managed Lanes, Minneapolis
Running Way

I-35W Managed Lanes, Minneapolis
The rebirth
Euclid Corridor project has already brought $4.3 billion in new investment to the city

Bus stops designed by Robert E. Madison International are a signature feature of the Greater Cleveland Regional Transit Authority's Silver Line on Euclid Avenue.
HealthLine Facts

- Opened 2008
- 7.1 miles
- 15,000 daily riders
- 5 minute headways
- $28M per mile
HealthLine Facts

- Dedicated bus lane
- Signal priority
- Off-board fares
- Near level boarding
- Median stations
Euclid Avenue Before BRT
Euclid Avenue Before BRT
Euclid Avenue After BRT
Euclid Avenue After BRT
Economic Development

Euclid and East Fourth Street
Economic Development

University Loft Apartments
Economic Development
BRT and Economic Development
Other Examples of Economic Development

Pittsburgh East Busway: $500M in development
Other Examples of Economic Development

Boston Silver Line: $650M in development
Research on three BRT systems shows positive impacts on residential property values, similar to light rail:

- Pittsburgh
- Boston
- Cleveland
2008 CUTR study of L.A. Metro Transit

Sought to answer the question of whether people perceive transit modes differently

- Bus, BRT, Light Rail, Heavy Rail
Modes Examined

Local Bus

Metro Rapid (BRT Lite)
Modes Examined

Orange Line (Full BRT)

Blue Line (LRT)
Modes Examined

Gold Line (LRT)

Red Line (Subway)
Survey respondents asked to rate 14 tangible and intangible attributes of transit service.

Rated importance and quality on a scale of 1 to 5:
- 1 (not at all important), 5 (extremely important)

- Travel cost
- Travel time
- Frequency
- Span
- Convenience
- Reliability
- Safety onboard
- Comfort onboard
- Safety waiting
- Comfort waiting
- Customer service
- User friendliness
- Other riders
- Avoid stress/cost of car
# BRT Ridership

<table>
<thead>
<tr>
<th>BRT Service</th>
<th>Capital Cost/Mile</th>
<th>Daily Ridership</th>
<th>Peak Headway</th>
<th>Route Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange Line – L.A.</td>
<td>25M</td>
<td>23,000</td>
<td>4 minutes</td>
<td>14 miles</td>
</tr>
<tr>
<td>HealthLine - Cleveland</td>
<td>23M</td>
<td>15,000</td>
<td>5 minutes</td>
<td>7 miles</td>
</tr>
<tr>
<td>SDX – Las Vegas</td>
<td>6M*</td>
<td>15,000</td>
<td>15 minutes</td>
<td>12 miles</td>
</tr>
<tr>
<td>EmX – Eugene</td>
<td>6.25M</td>
<td>10,000</td>
<td>10 minutes</td>
<td>4 miles</td>
</tr>
<tr>
<td>MAX – Kansas City</td>
<td>2.2M</td>
<td>4,400</td>
<td>10 minutes</td>
<td>9 miles</td>
</tr>
<tr>
<td>MAX – Salt Lake City</td>
<td>1.6M</td>
<td>4,200</td>
<td>15 minutes</td>
<td>10 miles</td>
</tr>
<tr>
<td>Swift – Everett</td>
<td>1.7M</td>
<td>2,800</td>
<td>10 minutes</td>
<td>17 miles</td>
</tr>
</tbody>
</table>
BRT combines the flexibility of buses with the efficiency of rail.

BRT operates at faster speeds, provides greater service reliability.

BRT provides these things through a combination of innovative vehicles, enhanced stations, running ways, state of the art technologies, improved fare collection, and branding.
Contact Information

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