Fitting Big BRT in the Small Starts Box: Planning BRT in a Constrained Corridor
There is no single definition of BRT, but rather a range of solutions.

Even the terms have a range:
- Bus Rapid Transit (BRT)
- High Capacity/Performance Transit (HCT/HPT)
- Enhanced Bus Service

US: BRT core elements:
- Priority
- Longer stop spacing
- Faster boarding
- Station amenities
Funding your project

- **FTA Small Starts**
  - Total project cost < $300M with Federal match < $100M
  - Fixed guideway or Corridor-based (can be mixed traffic)
  - Keeping total project cost < $175M simplifies the federal review process
  - Usually BRT or Streetcar

- **FTA New Starts**
  - Total project cost ≥ $300M with Federal match ≥ $100M
  - > 50% Fixed guideway system (LRT, commuter rail, BRT)
FTA Expectations

- Small Starts (<$300M)
  - Separated right-of-way not required for entirety of corridor
  - Makes a substantial investment in a specific corridor
  - Defined stations
  - Traffic signal priority for buses
  - Short headway times
  - Required minimum service hours

- New Starts (>=$300M)
  - All of the above
  - Majority of project operates in a separated right-of-way dedicated for public transportation use (Rail or true BRT)
Funding your project

New Starts and Core Capacity Process

- Project Development
- Engineering
- Full Funding Grant Agreement
  - Construction

Small Starts Process

- Project Development
- Small Starts Grant Agreement
  - Construction

Legend
- yellow diamond = FTA approval
- yellow arrow = FTA evaluation, rating, and approval
Project definition

- Project scoping should include and document agency priorities
- Opportunities to take lanes? Parking?
- What enhancements will BRT project be responsible for? Sidewalks? Bike facilities?
- Cost implications are an order of magnitude.
  - Restriping for bus lanes costs little (<$1M/mile)
  - Widening for bus lanes can cost lots (>25M/mile)
Division Transit Project Key Facts

- Agency/Partner’s first BRT project
- 14 mile corridor with 40 stations
- 1/3 mile station spacing
- Congested traffic corridor
- Constrained right-of-way
- Hard cap budget of $175M total project cost
- Existing bus line over capacity
Balancing the Budget

Target budget of $175M for 14-mile corridor

- 28% Station platforms
- 23% Vehicles
- 18% Engineering/Design
- 17% Right-of-way (stations and bus lanes)
- 14% Transit signal priority
- 11% Maintenance facility
- 6% Bus priority lanes
- 5% Utilities
## Select Bus lines

<table>
<thead>
<tr>
<th></th>
<th>Miles</th>
<th>Stations/mile</th>
<th>Cost/mile</th>
<th>Dedicated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Division Transit</td>
<td>14</td>
<td>2.6</td>
<td>$12M</td>
<td>Limited BAT lanes</td>
</tr>
<tr>
<td>Seattle RapidRide C-D-E-F</td>
<td>46</td>
<td>2.5</td>
<td>3</td>
<td>Very limited</td>
</tr>
<tr>
<td>(4 lines)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kansas City MAX Main-Troost (2)</td>
<td>19</td>
<td>2.5</td>
<td>4</td>
<td>~15% BAT lanes (converted)</td>
</tr>
<tr>
<td>Cleveland HealthLine</td>
<td>7</td>
<td>4.3</td>
<td>8</td>
<td>~60% dedicated (converted)</td>
</tr>
<tr>
<td>Eugene, OR EmX Green</td>
<td>4</td>
<td>2.5</td>
<td>8</td>
<td>~50% dedicated</td>
</tr>
<tr>
<td>San Bernardino sbX Green</td>
<td>16</td>
<td>1.0</td>
<td>13</td>
<td>~1/3 dedicated (widened)</td>
</tr>
<tr>
<td>Los Angeles Orange</td>
<td>18</td>
<td>0.9</td>
<td>26</td>
<td>Fully dedicated (rail r/w)</td>
</tr>
<tr>
<td>Seattle RapidRide G</td>
<td>2.3</td>
<td>4.3</td>
<td>49</td>
<td>Mostly dedicated (converted)</td>
</tr>
</tbody>
</table>
Multiple agency partners

Different policies and design standards

Expectations of the street

Need to balance conflicting priorities
Challenges and Constraints – Right-of-way

- Two different cross-sections
Challenges and Constraints – Traffic

- Major intersection congestion
Challenges and Constraints – Safety

- **Speed Safety Cameras**
  Safe speeds save lives

- **More Street Lights**
  Easier to see other people

- **Complete Sidewalks**
  All gaps filled

- **Safer Crosswalks**
  More flashing lights, stop lights, and median islands

- **Safer Speed Limit**
  30 MPH will become permanent

- **Raised Center Median**
  Safer turns for people driving

- **Buffered Bike Lanes**
  Physical separation where possible

- **Shorter Crossing Distances at Crosswalks**
  Crossing distances shortened by center median and protected bike lanes

- **More Marked Crosswalks**
  Shorter distances between safe crossings

*Image is for illustrative purposes only; location and design of specific elements may change*
Challenges and Constraints – Ped/Bike
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Challenges and Constraints – Utilities/ROW

- Major overhead utilities
- 2 regional water pipelines below
Challenges and Constraints – Traffic

- Gas stations – Don’t chase the plume!
Solutions – “Every second counts!”

- Business Access Transit (BAT) Lanes
- Transit signal priority
- Queue jumps
- Level boarding
- On-board bikes
- Pre-paid fare
Lessons Learned

- Agency partner communication is key!
- Understand related community issues
  - Affordability
  - Gentrification
  - Equity
- Match scale of infrastructure to funding
- Understand impact costs
- Create a better place for all modes!
Questions?

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