Change in Accessibility and Convenience?
Replacement of Conventional Bus Service with Bus Rapid Transit and Its Effect on Riders

Background
The purpose of this analysis is to analyze whether BRT replaced or complemented conventional service, and providing information on factors which may illustrate the resulting impacts of the adopted service plan on the transit riders, including: ridership along the corridor, customer perceptions gathered through onboard surveys, and operating hours/frequency of service.

Included in the analysis were Eugene, Kansas City, Cleveland, Oakland, Las Vegas, and Boston. These cities have been chosen for inclusion for these reasons:
A. To represent cities that have either replaced or complemented conventional bus service with BRT.
B. To include a range of BRT systems that operate on either dedicated rights of way or within mixed traffic.

A case study of one transit agency’s BRT service, the EmX in Eugene, Oregon, was also conducted.

Bus Rapid Transit Lines

<table>
<thead>
<tr>
<th>Transit Agency/Location</th>
<th>BRT Route</th>
<th>Local Service Route</th>
<th>Complement/Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lane Transit District/ Eugene, OR</td>
<td>EmX</td>
<td>11</td>
<td>Replace</td>
</tr>
<tr>
<td>Regional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation Commission of Southern Nevada/ Las Vegas, NV</td>
<td>MAX</td>
<td>113</td>
<td>Complement</td>
</tr>
<tr>
<td>Massachusetts Bay Transportation Authority/ Boston, MA</td>
<td>Silver Line</td>
<td>49</td>
<td>Replace</td>
</tr>
<tr>
<td>Greater Cleveland Regional Transit Authority/ Cleveland, OH</td>
<td>Health Line</td>
<td>6</td>
<td>Replace</td>
</tr>
<tr>
<td>Alameda Contra Costa Transit/ Oakland, CA</td>
<td>San Pablo Rapid</td>
<td>72, 72L (Limited)</td>
<td>Complement 72 Replace 72L</td>
</tr>
<tr>
<td>Kansas City Area Transportation Authority/ Kansas City, MO</td>
<td>MAX</td>
<td>57</td>
<td>Complement (majority of route)</td>
</tr>
</tbody>
</table>

Factors Considered

Operational Changes
Higher service frequencies, and oftentimes greater hours of operation associated with the BRT, have led to higher ridership in the corridor, thus indicating increased accessibility and convenience.

Station Spacing
The increased station spacing characteristic of BRT service has not appeared to negatively impact accessibility and convenience. This is especially important in cities where the BRT replaces conventional bus service.

Travel Time
Reports from customer satisfaction surveys show transit patrons found travel times to be significantly shorter than for trips taken on the previously used route.

Reliability
Customer satisfaction in regard to reliability has consistently ranked higher for transit service along corridors after the implementation of BRT.

Ridership
Ridership along each corridor increased and many transit riders defected from their previous mode or route onto the BRT to complete their trip.

Customer Surveys
In addition to reports on travel time and reliability, transit riders consistently rated BRT higher than conventional service. Data also suggested BRT attracted choice riders.

Case Study – EmX
- A 95% increase in ridership along the corridor was experienced within one year of EmX operating.
- The EmX provided greater frequencies than service on the corridor previously offered.
- Increase of riders aged 65 and older (39% compared to 3.7%) and
- 2.6% increase of riders accessing transit with one vehicle in their household.
- 16% of riders responded that previous to EmX service, they either did not make the trip, or drove/rode with someone else.
- The majority of riders accessed transit stops/stations along the Franklin corridor either by walking or, specific to the EmX survey, transferring to/from another route.
- Spatial analysis shows individuals who boarded the Route 11 along the Franklin corridor did so in close proximity to where EmX stations have been located.