Moving Toward a Balance between Parking and TOD in Station Design

Rail~Volution 2009

Boston
Overview - RTD

- Established in 1969
- 2,337 square mile district
- Serves over 40 municipalities
- Main Revenue Source: 1% Sales Tax
  - 0.6% General Ops
  - 0.4% FasTracks
- Over 100 million boardings annually
Overview - Existing Rail & BRT

**LIGHT RAIL**
- 35 miles of rail service
- 34 stations
- 65,000+ daily riders
- First line built in 1994
- Extensions built in 2000, 2002 and 2006

**BRT**
- Trips from Denver to Boulder
- Travel in dedicated HOV lanes for 10 of the 27 miles
- All but one stops have slip ramps
Overview - FasTracks Plan

- $6.9 billion program
- 121 miles of new rail service
- 19 miles of BRT
- 59 additional stations
- 21,000 additional parking spaces
- Development of Denver Union Station
RTD’s Role in TOD

RTD
- Transit Developer
- Land Owner
- Planning Partner
- Development Partner
- Construction Facilitator
- TOD Communication/Coordination

Local Government
- Planning
- Zoning
- Permits
- Community Facilitator
- Land Owner
- TOD Communication/Coordination
- Affordable Housing Policy and Enforcement

Private Developers
- Develop Proposals
- Land Assembly
- Entitlements
- Design
- Construction

Metro Chamber

DRCOG

FTA

CDOT

Professional and Research Organizations

Local Communities
RTD’s TOD Goals

- Promote partnerships between multiple cities and agencies
- Encourage sustainable development that supports the transit system
- Ensure access for all modes of transportation (bus, bike, train, car, walking)
- Protect and enhance RTD’s transit assets
Role of Parking in Station Design

Source: PB PlaceMaking
Balancing Parking and TOD

Clear need to provide a link between TOD policy and station design

- Need to provide standards and guidelines for designers to follow
- Need to focus on pedestrian environment
- Need to focus on creating clear guidelines for dealing with bus to rail and auto to rail transfers
Transit Access Guidelines

- Brings TOD context to design criteria
- Uses latest research from around the country as well as observed data
- Provides standards and guidelines for station access which provide more flexibility for multi-modal access
- Developed using a multi-disciplinary committee from across RTD
Transit Access Guidelines

Research and data used
- pedestrian walk speeds
- hard and soft factors influencing walking behavior
- measured walk distances between parking and platforms at existing stations

*Information used to provide technical context for link between TOD policy and design criteria*

### Distance & Mode Share

<table>
<thead>
<tr>
<th>Distance from Station</th>
<th>Metrorail Mode Share</th>
<th>Auto Mode Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Office</td>
<td>Residential</td>
</tr>
<tr>
<td>At station</td>
<td>35%</td>
<td>54%</td>
</tr>
<tr>
<td>¼ mile</td>
<td>23%</td>
<td>43%</td>
</tr>
<tr>
<td>½ mile</td>
<td>10%</td>
<td>31%</td>
</tr>
</tbody>
</table>

- 35% of office trips right at the station entrance
- Office mode share drops about 1% every 100 ft
- ¼ mile residential share 200% higher than office
Transit Access Guidelines

Pedestrian Standards and Guidelines
– guidelines provided to enhance the pedestrian experience
– identifies responsibility related for RTD and non-RTD (developers or local jurisdictions)
– addresses safety issues related to traffic and train conflicts
Transit Access Guidelines

Key standards for modal transfers:

– Rail to Bus transfers:

<table>
<thead>
<tr>
<th>Transfer Time</th>
<th>Maximum Walk Path Distance</th>
<th>Maximum Arc Distance</th>
<th>Weekday Bus Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desirable &lt; 2 minutes</td>
<td>400 feet</td>
<td>240 feet</td>
<td>&gt; 75%</td>
</tr>
<tr>
<td>Average = 3 ½ minutes</td>
<td>700 feet</td>
<td>420 feet</td>
<td>&gt; 85%</td>
</tr>
<tr>
<td>Maximum &lt; 5 minutes</td>
<td>1,000 feet</td>
<td>600 feet</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: It is evident that some existing stations may not comply with these standards, and that they cannot require a retrofit of existing stations. However, these standards do imply that a number of existing stations do not provide the convenient transfers expected by our riders. Indeed, this has been the source of many customer complaints and is not an indication of acceptability by either our customers or RTD. RTD will endeavor to improve these connections as may be physically and economically feasible.

– Auto to Rail transfers:

<table>
<thead>
<tr>
<th>Share of Capacity</th>
<th>Maximum Walk Path Distance</th>
<th>Maximum Arc Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>1,000 feet</td>
<td>600 feet</td>
</tr>
<tr>
<td>75%</td>
<td>1,500 feet</td>
<td>900 feet</td>
</tr>
<tr>
<td>100%</td>
<td>2,500 feet</td>
<td>1,500 feet</td>
</tr>
</tbody>
</table>
Use of Transit Access Guidelines

- Approved in January 2009 and provided to design teams with other rail and bus design criteria
- Application/performance limited up till this point
- Have seen more flexibility in discussions with engineers on placement of parking and bus transfer facilities
- Have encouraged pro-TOD stakeholders outside RTD to use these guidelines in discussions with RTD on station design
Conclusions

- RTD is dominated by parking in its current system
- Transit Access Guidelines and TOD policy are having an influence on the design process
- Fully expect RTD to evolve as system grows and TOD becomes more prevalent
Contact Information

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