First and Last Mile Innovations

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Regional Transportation District
Denver, CO
Denver Metro Rail/BRT System
First and Last Mile (FLM) in the Marketplace
Station Contexts
Station Contexts
Why should we care about the FLM issue?

Transit ridership increased between 2010 and 2015; per capita boardings decreased.

- 5% increase in annual boardings (4.8 million more boardings)
- 4% decrease in annual boardings per capita (1.6 fewer boardings per person)

- Light rail ridership has increased 30%, bus ridership has been steady.
- Regional transit mode share was consistent at 4%.
- Ridership on the E/F/H Lines has increased 18%.
Why should we care about the FLM issue?
First and Last Mile Strategic Plan

define strategies and policies that improve multimodal transportation and connectivity to RTD services and facilities with the ultimate goal of making RTD more accessible to more people.
## Station Typologies

<table>
<thead>
<tr>
<th>Typology</th>
<th>Examples</th>
<th>Land use Density</th>
<th>Employment density</th>
<th>Residential density</th>
<th>Accessibility/Service levels</th>
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</thead>
<tbody>
<tr>
<td>Urban</td>
<td>Downtown Arvada/Belmar/Longmont, areas of Broadway, Federal and Colfax in Denver, DU campus, Anschutz campus, Denver neighborhoods</td>
<td>High</td>
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<tr>
<td>Suburban Mixed</td>
<td>Northglenn Marketplace Mall, US 36 and Sheridan Park-n-Ride area, Broomfield Plaza, Colorado Marketplace Shopping Center (Thornton)</td>
<td>Medium</td>
<td>High</td>
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<tr>
<td>Suburban Residential</td>
<td>Residential areas of Lone Tree, Highlands Ranch, Northglenn, Thornton, Aurora, Littleton, Parker, Lakewood, Brighton, etc.</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Low/Med</td>
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Urban

- High land use density
- Mix of high employment and residential
- Many destinations
- Good levels of transit access
- Relatively high multimodal share
- Good scope of first and last mile solutions
Suburban Mixed

- Medium land use density
- Mix of office parks, shopping malls, event spaces and industrial areas
- Medium-high employment
- Numerous destinations
- Medium levels of transit access
- Relatively high SOV share
- Good scope of first and last mile solutions
Suburban Residential

- Low density
- Residential
- Few destinations
- Low/Med levels of transit access
- High SOV share

- Low scope of first and last mile solutions
Two (2) types of overlays include:

1. **Prioritization overlay**: The function of this overlay is to help prioritize locations that may require FLM solutions more than others.
   - Historically vulnerable populations
   - High accessibility needs

2. **Recommendation overlay**: The function of the recommendation overlays is to help tailor the recommendations at specific locations with certain attributes.
   - High shift/visitor variability
   - High visitor trips
   - High propensity to change
   - Parking utilization
Representative Stations
Criteria to Select Representative Stations

- Low income/transit dependent communities
- **Mode specific** (i.e. a variety of BRT, rail and local bus)
- **Service level** (i.e. ridership, frequency, parking availability, stations with high ridership vs stations with relatively low ridership and/or stations within Call-n-Ride service areas)
- **Stations with potential to change, or changes in the near future** (i.e. stations within jurisdictions that have completed groundwork or are supportive of first and last mile solutions)
- **Jurisdictional/geographical distribution** (i.e. stations selected in diverse political boundaries)
- **Access** (i.e. ease of access by various modes)
- **Density** (i.e. a variety of different land use densities)
## Project Schedule

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<td><strong>Project Management and Stakeholder/Public Outreach</strong></td>
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<td><strong>First/Last Mile Station Typologies</strong></td>
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<td><strong>Station/Typology Recommendations</strong></td>
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First and Last Mile - Implementation

Who's responsibility is it?

- Transit Agency
- Local Government
- Private Sector

Partnerships!
Transit Agency Considerations vs Customer Choice

Transit Agency

Customer

Regional Transportation District  rtd-denver.com
Are we providing what our customers really want?

“Cheap(er) gas prices, driver’s license availability, “new mobility”, etc. give all-purpose riders more choices and less tolerance to poor transit customer experiences.”

“The future of public transit hinges on shifting from a supply model to a demand model and embracing emerging modes to better serve, satisfy and grow ridership.”
“New” Mobility + “Old” Mobility

Opportunity!

Drive alone (76.6%)

Carpool (9.0%)

Transit (5.2%)

Work at home (4.6%)

Walk (2.8%)

Other* (1.2%)

Bike (0.6%)
Smartphones as Mobility Devices
The Amazon Effect
Cost to Organization vs. Cost to User
Interoperability
Bikes and Transit

**US Bike Share Growth [2010-2016]**

**Growth of Bikes and Riders**
Systems with at least 10 stations and 100 bikes

- Total Bike Share Trips: 88 million
- 2016 Bike Share Trips: 28 million

**FIGURE 1. Bike-Share Connectivity to Scheduled Public Transportation**

- Connection to another mode: 2,291 (86.3%)
- Near connection: 238 (9.0%)
- No connection: 125 (4.7%)
- No service: 1 (<1%)

- Connect to 1 mode: 1,933 (72.8%)
- Connect to 2 modes: 348 (13.1%)
- Connect to 3 modes: 10 (0.4%)

Source: NACTO

Graphic: King County Metro
Coming July/Aug 2018…

BICYCLE & TRANSIT INTEGRATION
A TRANSIT AGENCY PRACTICUM FOR BUILDING BICYCLE CONNECTIONS & EQUITABLE MOBILITY
Thank You!

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