LINKING THE LINKS

The Nexus between Transportation Demand Management (TDM), Transit Station Access, and Internal Station Circulation

Makeover Montgomery 2
May 9, 2014 – Silver Spring, MD
Focus on Routes & Vehicles
Phases of a Transit Trip
The Nexus
How do shifts in travel behavior occur?

Make Transportation Information Accessible and Ubiquitous

Provide Incentives
## Transportation Demand Management

### Evidence on TDM Program Impacts

#### Vehicle Trip Reduction

<table>
<thead>
<tr>
<th>TDM Program or Strategy</th>
<th>High Transit</th>
<th>Moderate Transit</th>
<th>Low Transit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support, Promotion, Information</td>
<td>3-5%</td>
<td>1-3%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Alternative Commute Services</td>
<td>5-10%</td>
<td>5-10%</td>
<td>1-3%</td>
</tr>
<tr>
<td>Financial Incentives</td>
<td>10-20%</td>
<td>5-15%</td>
<td>1-5%</td>
</tr>
</tbody>
</table>

**Combined Strategies**

<table>
<thead>
<tr>
<th></th>
<th>15-20%</th>
<th>10-15%</th>
<th>3-7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Free Parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With Paid Parking</td>
<td>25-30%</td>
<td>15-20%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Source: Cambridge Systematics, 2010 (Fairfax County, VA), as reproduced in Integrating Demand Management into the Transportation Planning Process: A Desk Reference, 2012, Federal Highways Administration*
Focus on Station Access
Metrorail Work

- Heirarchy/SSAPM
- Bike/Ped Study
- Station Access
- Alternatives
- Individual Station Access Plans

[Map of Metrorail system with stations labeled, including Shady Grove, Twinbrook, White Flint, Grosvenor-Strathmore, Medical Center, Bethesda, Friendship Heights, and others]
## Typology of Stations

<table>
<thead>
<tr>
<th>Types</th>
<th>Montgomery County Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Density Mixed-Use</td>
</tr>
<tr>
<td>2</td>
<td>Urban Residential</td>
</tr>
<tr>
<td>3</td>
<td>Urban Residential – Bus/Auto</td>
</tr>
<tr>
<td>4</td>
<td>Campus</td>
</tr>
<tr>
<td>5</td>
<td>Mixed-Use (Pod Layout)</td>
</tr>
<tr>
<td>6</td>
<td>Long-Term Potential for TOD</td>
</tr>
<tr>
<td>7</td>
<td>Suburban Residential</td>
</tr>
<tr>
<td>8</td>
<td>Auto Collector</td>
</tr>
<tr>
<td>9</td>
<td>Downtown/Urban Core</td>
</tr>
</tbody>
</table>
Station Access Alternatives Study

- Five Case Studies on Five Station Types
- 2-3 Scenarios per Station
- Benefit/Cost Analysis
# SAAS – Shady Grove

## Scenario

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Dynamic Pricing</th>
<th>Real-time Parking Information</th>
<th>Preferred Parking Spaces &amp; Discounts</th>
<th>Shared Parking with Future Development</th>
<th>Redesign Kiss &amp; Ride</th>
<th>Neighborhood Circulator Service</th>
<th>Coordinate Private Shuttles</th>
<th>Benefit/Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Parking Facility</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>10.21</td>
</tr>
<tr>
<td>Enhanced Bus and Shuttle Service</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>9.87</td>
</tr>
</tbody>
</table>
Toolbox Strategies

- Mixed Use (Pod Layout)
- Suburban Residential
- Auto Collector
- Coordinate Private Shuttles
- Preferred Carpool Spaces and Discounts
- Neighborhood-Focused Bus Service
- Shared Parking Facilities
- Redesign Kiss & Ride

- Increased Frequency of Feeder Bus Service
- Coordinate Parking with Connector Service
- Real-Time Parking Information
- Dynamic Pricing
- Auto Collector Coordinate
- Preferred Carpool Spaces and Discounts
- Neighborhood-Focused Bus Service
- Shared Parking Facilities
- Redesign Kiss & Ride
Station Circulation Study

Internal Circulation
Station Circulation Study

• Analyzed multi-modal circulation at five Metrorail Stations
  – Takoma, Addison Road, Anacostia, Minnesota Ave & New Carrollton
Station Circulation Study

• Developed recommendations to improve traffic flow & improve safety for all users by minimizing conflicts
  – Four levels: signage, striping, enforcement & infrastructure
• Issues found:
  • Jaywalking from two bus bays to Metro entrance
  • Minimal use of Kiss & Ride lot resulted in conflicts on Cedar St
  • Lack of wayfinding signage
• Recommendations:
  Takoma Metrorail
Issues found:

- Jaywalking between Metrorail station and bus bays A-E;
- Patrons walking in busway from Martin Luther King Jr Ave;
- Intersection blocking/vehicle congestion on Howard Rd.

Recommendations:

- Anacostia Metrorail
The Nexus