Getting People to Work – The State Perspective

Employers’ Roundtable
Patriot Place
November 19, 2015
What The Public Sector Does Today

• Provide the fundamental system needed to address peak demand – particularly for radial travel
• Offer transit in areas where travel demand is concentrated
• Provide equitable access – ADA requirements and Environmental Justice principles
• Identify/prioritize long term needs and gather statewide resources to address them
Commuting Facts of Life -

• Peak period commuting demands maximum system capacity

• Commuting distances in 2011 were 12 percent longer than they were in 1991.

• 14-26 % of the commuting trips are to intermediate stops (errands, child care, etc.)

• In 2011, Eastern MA region had 1,486,000 commute trips over 13,157,000 miles
  – Drive alone trips accounted for 62.3% commute trips
  – Walk/transit trips were 11% of the commute trips
  – Drive/transit trips were another 6.3%

• The traditional suburb-to-downtown commute is only a small portion of SOV commuting miles.
When Eastern MA Drives to Work - Patterns

<table>
<thead>
<tr>
<th>Driving to where?</th>
<th>% of Trips</th>
<th>% of Miles</th>
<th>Average distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-radial adjacent sector</td>
<td>20.5%</td>
<td>27.8%</td>
<td>13.2</td>
</tr>
<tr>
<td>same sector</td>
<td>45.4%</td>
<td>25.1%</td>
<td>5.4</td>
</tr>
<tr>
<td>distant sector</td>
<td>8.2%</td>
<td>20.8%</td>
<td>24.8</td>
</tr>
<tr>
<td>radial</td>
<td>12.2%</td>
<td>16.8%</td>
<td>13.5</td>
</tr>
<tr>
<td>contraflow</td>
<td>5.5%</td>
<td>7%</td>
<td>12.2</td>
</tr>
<tr>
<td>central sector</td>
<td>8.2%</td>
<td>2.5%</td>
<td>3</td>
</tr>
</tbody>
</table>
How Private Sector Initiatives Matter Today

- Access to transit
  - New Balance Station
  - joint public-private investment
  - New technologies
    - In September, 300,000 of 1.3m trips that Uber provided in NJ were to/from transit
    - Nationally, 25% of Lyft trips are to/from transit
- Transportation Managements Associations (TMAs)
  - Last mile from transit
  - Non-radial travel demand
  - Guaranteed ride home
  - Other tailored services
- Mid-day mobility options
  - ZipCar
  - Bikeshare
Trip Chaining: Daily Patterns
Future?

- Public and Private partnership in
  - problem solving
  - prioritizing investments
- Planning process
  - Capital Improvement Plan (CIP) that will be a 5 year multimodal investment strategy
  - Long Range (25 year) Plans to consider longer term options and changes for 2040
CIP Project Selection Criteria

- Safety
- Capacity
- Maintenance and Modernization
- Expansion

Investment Strategy
What’s Coming in 25 Years?

Peak Horse – U.S. equine population 1850-2000

Equines (mn)

1850 1870 1900 1910 1920 1930 1940 1950 1960 2000

5 8 22 24 25 19 14 8 3 4

Equines vs vehicles per capita – 1900 - 2000

Source: USDA, Kentucky Equine Research

Source: USDA, Kentucky Equine Research, US DOT
Four types of vehicles for the future?

<table>
<thead>
<tr>
<th>Shared Autonomous Vehicles (SAVs)</th>
<th>Pooled Shared Autonomous Vehicles (PSAVs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9:1</strong> traditional vehicles displaced per SAV</td>
<td><strong>15-18:1</strong> traditional vehicles displaced per PSAV</td>
</tr>
<tr>
<td>8% additional VMT due to empty trips</td>
<td><strong>40-50%</strong> reduced VMT due to shared rides</td>
</tr>
<tr>
<td><strong>12,000</strong> Annual miles/vehicle</td>
<td><strong>12,000</strong> Annual miles/vehicle</td>
</tr>
<tr>
<td><strong>64,000</strong> miles</td>
<td><strong>64,000</strong> miles</td>
</tr>
</tbody>
</table>

**Sedan**
- $0.44 mile ride cost to consumers per SAV

**Two seater**
- $0.16 mile ride cost to consumers per SAV

Flow: “robot taxis” with average wait time of 1 min

**Sedan**
- $0.21 per mile ride cost to consumers per PSAV

**Two seater**
- $0.08 per mile ride cost to consumers per PSAV

Flow: “perpetual ride” with average wait time of 5 min

[Diagram showing passenger flow and vehicle miles traveled]
Four types of vehicles in the future?

<table>
<thead>
<tr>
<th>Traditional Vehicles</th>
<th>Family Autonomous Vehicles (FAVs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• limited self-driving capabilities</td>
<td></td>
</tr>
<tr>
<td>• work or personal use</td>
<td></td>
</tr>
<tr>
<td>work: pickups, large SUVs, commercial vans</td>
<td></td>
</tr>
<tr>
<td>personal: cars/CUVs, performance</td>
<td></td>
</tr>
<tr>
<td>Vehic peacehold</td>
<td>Annual miles/vehicle</td>
</tr>
<tr>
<td>2.1</td>
<td>12,000</td>
</tr>
<tr>
<td>1.2 vehicles</td>
<td>24,000 miles</td>
</tr>
</tbody>
</table>

Flow: Family with two vehicles

Flow: one vehicle shared by multiple family members
Consider Yourself Invited

• To provide input for the planning process
  – CIP
  – Long Range plans

• To build on public investments and provide more and better commute systems
  – TMAs and shared services
  – Facilities from bike racks to train stations