What Makes Buses Work

Implementing the first bus priority lanes in a small municipality with regional importance
Implementing the first bus lanes in Cambridge, MA

- What were the challenges for bus priority facilities in general?
- What was the context for the pilot?
- How did we make the case for the pilot?
- Who was involved?
- What were the pilot parameters?
- What were the keys to success?
- What were the outcomes?
Challenges to implementing bus priority in Cambridge

- Small city: 120,000 people in 6.2 sq. mi (16 sq. km), within the “Greater Boston” region of about 4.7 million
- Narrow streets, competing needs
- Lack of grid system (no good alternatives)
- Spot locations of severe delay and reliability challenges
- Many agencies to coordinate with
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Context for Bus Priority Pilot

• 1992 Cambridge Vehicle Trip Reduction Ordinance: Encourages alternatives to single occupancy vehicle trips


• 2016 Cambridge Complete Streets policies: Safe access for all users – regardless of age, ability, or mode of transportation

• 2016 Cambridge Vision Zero policy: Calls for the elimination of fatalities and serious injuries resulting from traffic crashes
Context for Bus Priority Pilot

- MBTA Route 73 (Harvard to Waverly Square)
- MBTA Route 71 (Harvard to Watertown Square)

- MBTA Routes 71 and 73 provide 12,000 weekday daily riders compared to 19,000 vehicle trips
- Mt. Auburn Hospital and Athenahealth operate employee shuttles all day
Case for Bus Priority Pilot

2014 analysis of bus delay and reliability across the city

Data for MBTA Route 73, morning peak rush hour

In the morning rush hours (7-9am) there were a total of almost 80 hours of passenger delay in the segment approaching Coolidge Ave (eastbound).
Case for Bus Priority Pilot

Percentage of vehicles versus percentage of people on road

MBTA buses only use 3% of the roadway space to carry over half of the people on the roadway at certain points.

(Source: DCR Public Presentation, January 10, 2016, Slide 70)
Coordination – who was involved?

2016 - 2017
DCR Mt. Auburn Street Corridor Study

2018
DCR Short Term Design Implementation

2018
Cambridge BostonBRT Mt. Auburn St. Bus Priority Pilot

2018 - 2021
Cambridge Belmont St. Design and Construction

2022
Watertown Mt. Auburn St. Complete Street Project

- DCR Mt. Auburn Corridor Study Area
- DCR Short Term Design
- Cambridge Mt. Auburn St. Bus Priority Pilot
- Cambridge Belmont St. Reconstruction
- Watertown Mt. Auburn St. Complete Street Project
Pilot Parameters

- Grant from Barr Foundation to work with ITDP and others – supplemented by city funds
- Partnership between Cambridge, Watertown, DCR, and MBTA
- Minimal or no construction, paint, signal changes, signs
- No specific timeframe, intended to test and evaluate to develop long-term plan
Keys to Success

- Outside grand funding and goal setting helps
- Commit the resources to get it right
- Coordination
- Outreach and education and enforcement (never enough!)
- Make multi-modal improvements
Outcomes
Outcomes

**For less than $200k:**

- We saved 36,000 person hours annually for MBTA bus riders. This doesn’t include benefit to other shuttle riders.

- “It has completely changed my commute and given me back precious time. My commutes have is shorter 25 to 30 minutes each day.”
Outcomes

For less than $200k:

• We made most users, but in particular cyclists, significantly more comfortable

<table>
<thead>
<tr>
<th></th>
<th>People Overall</th>
<th>People Biking</th>
<th>People Walking</th>
<th>People on Transit</th>
<th>People Driving</th>
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<tbody>
<tr>
<td>Before</td>
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<td>2.4</td>
<td>3.7</td>
<td>3.4</td>
<td>3.3</td>
</tr>
<tr>
<td>After</td>
<td>3.5 (+0.2)</td>
<td>3.6 (+1.2)</td>
<td>3.8 (+0.1)</td>
<td>4.0 (+0.6)</td>
<td>2.9 (-0.4)</td>
</tr>
</tbody>
</table>
Outcomes

For less than $200k:

• We increased satisfaction with the street’s function from less than 20% to over half.

• We did not measure a significant impact on travel time.
Thank you!
Tegin Teich
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