BEACON ST REDESIGN

June 12, 2017
Commonwealth Salon, Boston Public Library
WORK TO DATE

• Public meeting June 2016
• Online survey
• Data collection, field visits
• Alternative development
PROJECT GOALS

• Manage vehicle speeds
• Reduce number and severity of crashes
• Increase walking comfort
85% PERCENTILE AUTO SPEEDS

24-hour averages from Tuesday March 29 through Thursday March 31, 2016
High: 51°, Mostly Cloudy | High: 59°, Partly Cloudy | High: 71°, Mostly Cloudy
From 7 am to 7 pm, 15.3% of drivers exceeded 30 MPH.
From 7 am to 7 pm, 16% of drivers exceeded 30 MPH.
From 7 am to 7 pm, 2.2% of drivers exceeded 30 MPH.
WEEKDAY WALK VOLUMES (7 AM - 7 PM)

Thursday April 27, 2017
High: 55°, Overcast
AM PEAK AUTO VOLUMES (8 – 9 AM)

Thursday April 27, 2017
High: 55°, Overcast
AM PEAK WALK VOLUMES (8 – 9 AM)

Thursday April 27, 2017
High: 55°, Overcast
PM PEAK AUTO VOLUMES (5 - 6 PM)

Thursday April 27, 2017
High: 55°, Overcast
PM PEAK WALK VOLUMES (5 – 6 PM)

Thursday April 27, 2017
High: 55°, Overcast
TOOLS TO MANAGE SPEEDS

We can manage vehicular speeds through the design of a street. There are three general categories:

- Street narrowing
- Horizontal deflection
- Vertical deflection
Narrowing streets slows drivers by creating friction along the edges, and can be accomplished by real or apparent narrowing.

- Narrower lanes
- Fewer lanes
- Sense of “enclosure”
  - Trees, lighting, furniture, buildings
- Curb extensions
- Crossing islands
Horizontal deflection slows drivers by forcing a zig-zag motion that is uncomfortable at high speeds.

- Chicanes or other serpentine design
- Crossing islands
- Modern roundabouts, neighborhood traffic circles
SPEED MANAGEMENT: VERTICAL

Vertical deflection slows drivers by changing the profile of a street. Vertical deflection forces drivers to go up and over something.

- Speed humps
- Speed tables/taled intersections
ADDITIONAL TOOLS

ENFORCEMENT

• Police enforcement is a valuable tool, most effective in combination with engineering changes.
• Automated enforcement requires state legislative action. It is potentially a longer-term tool.
• Parking enforcement curbs use of potentially dangerous locations, such as being too close to a crosswalk or double-parking.

EDUCATION

• Encourage safe and predictable user behavior with street teams.
• Changing social norms through peer-to-peer discussions and citywide campaigns.
• Investigate signal timing/phasing to provide head start to people walking
PROJECT PROPOSAL

- Investigate signal timing/phasing to provide head start to people walking
- Open sight lines at intersections
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• Open sight lines at intersections
• Reallocate one lane of general travel between Berkeley and Mass Ave
• Investigate signal timing/phasing to provide head start to people walking
• Open sight lines at intersections
• Reallocate one lane of general travel between Berkeley and Mass Ave
• Formalize right-turn only lane between Arlington and Berkeley
CONSIDERATIONS

- Improved safety
- Speed management
- Pedestrian comfort
- Bicyclist comfort
- Quick buildability
- Parking impacts
- Signal changes
- User delay
ALTERNATIVE 1

CONSIDERATIONS

- Improved safety ★★★★★
- Speed management ★★★★★
- Pedestrian comfort ★★★★★
- Bicyclist comfort ★★★★☆
- Quick buildability ★★★★★
- Parking impacts ★★★★★
- Signal changes ★★★★☆
- User delay ★★★★★

The diagram illustrates a road layout with various sections labeled as 'BIKE BUFFER', 'PARK', 'TRAVEL', and 'PARK', with distances marked as 5', 3', 9', 10.5', and 10.5'.
ALTERNATIVE 2

CONSIDERATIONS

- Improved safety ★★★
- Speed management ★★★
- Pedestrian comfort ★★★
- Bicyclist comfort ★★
- Quick buildability ★★★
- Parking impacts ★★★
- Signal changes ★★
- User delay ★★

[Diagram showing lane configurations and star ratings for each consideration]
ALTERNATIVE 3

CONSIDERATIONS

- Improved safety ★★★☆☆
- Speed management ★☆☆☆☆
- Pedestrian comfort ★★★☆☆
- Bicyclist comfort ★☆☆☆☆
- Quick buildability ★★★★★
- Parking impacts ★★★★★
- Signal changes ★★★☆☆
- User delay ★★★★★
ALTERNATIVE 4

CONSIDERATIONS

- Improved safety ★★★
- Speed management ★★★
- Pedestrian comfort ★★☆
- Bicyclist comfort ★☆☆
- Quick buildability ★☆☆
- Parking impacts ★☆☆
- Signal changes ★☆☆
- User delay ★★★

[Diagram showing lane configurations and distances: BIKE BUFFER TRAVEL TRAVEL PARK]
<table>
<thead>
<tr>
<th>CONSIDERATIONS</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
<th>Alternative 4</th>
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<tr>
<td>Improved safety</td>
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<td>★★★☆</td>
<td>★★★★</td>
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<tr>
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<td>★★★★</td>
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<td>★★★★</td>
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<td>Pedestrian comfort</td>
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<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
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<tr>
<td>Bicyclist comfort</td>
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<td>★★★☆</td>
<td>★★★☆</td>
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<tr>
<td>Quick buildability</td>
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<td>★★★☆</td>
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<tr>
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<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
</tr>
<tr>
<td>User delay</td>
<td>★★★★</td>
<td>★★★☆</td>
<td>★★★☆</td>
<td>★★★☆</td>
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</tbody>
</table>
Existing
typical cross-section

PREFERRED ALTERNATIVE

Alternative 1
typical cross-section
DAYLIGHTING: OPEN SIGHT LINES

EXISTING

DAYLIGHTED
CURRENT CONDITION: ON-STREET PARKING
CURRENT CONDITION: ADJACENT PARKING

1,623 spaces
# Daylighting impacts on parking

<table>
<thead>
<tr>
<th>TYPE</th>
<th>PROPOSED</th>
<th>EXISTING</th>
<th>CHANGE</th>
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<tbody>
<tr>
<td>Residential (Beacon)</td>
<td>309</td>
<td>313</td>
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<td>HP-V Parking (Beacon)</td>
<td>2</td>
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<tr>
<td>Metered/Residential (Beacon)</td>
<td>23</td>
<td>24</td>
<td>-1</td>
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<tr>
<td>Metered/Unrestricted (Beacon)</td>
<td>81</td>
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<tr>
<td>Loading/Valet (Beacon)</td>
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<tr>
<td>Pick-up/Drop-off</td>
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<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Visitor</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Metered/Residential (Hereford)</td>
<td>23</td>
<td>24</td>
<td>-1</td>
</tr>
<tr>
<td>Metered/Residential (Fairfield)</td>
<td>17</td>
<td>18</td>
<td>-1</td>
</tr>
<tr>
<td>Metered/Residential (Dartmouth)</td>
<td>18</td>
<td>19</td>
<td>-1</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>479</strong></td>
<td><strong>489</strong></td>
<td><strong>-10</strong></td>
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</table>
PEDESTRIAN HEAD START AT SIGNALS

WALK light turns on before the green light turns on

No turns will be allowed on red lights

Images: Streetsfilms
PREFERRED ALT, OPTION A

<table>
<thead>
<tr>
<th>TYPE</th>
<th>EXISTING</th>
<th>OPTION A</th>
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<tbody>
<tr>
<td>Residential</td>
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<tr>
<td>Metered / Unrestricted</td>
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<tr>
<td>No Parking</td>
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PM PEAK: QUEUE COMPARISON

- Existing design & Option B - 50th percentile queue length
- Option A - 50th percentile queue length
PM PEAK: QUEUE COMPARISON

Existing design - 95th percentile queue length
Option A - 95th percentile queue length
Option B - 95th percentile queue length
### Parking Analysis

<table>
<thead>
<tr>
<th>Type</th>
<th>Existing</th>
<th>Proposed</th>
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<tbody>
<tr>
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<td>20</td>
<td>20</td>
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<tr>
<td>Metered / Unrestricted</td>
<td>18</td>
<td>17</td>
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<tr>
<td>No Parking</td>
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<td></td>
</tr>
</tbody>
</table>

1 additional space removed on Hereford St for daylighting.
PREFERRED ALT, FAIRFIELD

<table>
<thead>
<tr>
<th>TYPE</th>
<th>EXISTING</th>
<th>PROPOSED</th>
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<tbody>
<tr>
<td>Residential</td>
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<td>58</td>
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<tr>
<td>Visitor</td>
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<td>1</td>
</tr>
<tr>
<td>Loading / Valet</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No Parking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 additional space removed on Fairfield St for daylighting.
PREFERRED ALT, DARTMOUTH

PARKING ANALYSIS
DARTMOUTH ST TO CLARENDON ST

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<tr>
<th>TYPE</th>
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<th>PROPOSED</th>
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<tbody>
<tr>
<td>Residential</td>
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<tr>
<td>Accessible</td>
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<tr>
<td>No Parking</td>
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</table>

1 additional spaced removed on Dartmouth St for daylighting.
# Preferred Alt, Clarendon

## Parking Analysis

<table>
<thead>
<tr>
<th>Type</th>
<th>Existing</th>
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<tbody>
<tr>
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<td>29</td>
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<tr>
<td>Metered / Unrestricted</td>
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<td>22</td>
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<tr>
<td>Loading / Valet</td>
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<td>2</td>
</tr>
<tr>
<td>No Parking</td>
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</table>
# PREFERRED ALT, BERKELEY

## Parking Analysis

### Berkeley St to Mugar Way

<table>
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<tr>
<th>Type</th>
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<th>Proposed</th>
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</thead>
<tbody>
<tr>
<td>Metered / Unrestricted</td>
<td>39</td>
<td>38</td>
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<tr>
<td>Pick-up / Drop-off</td>
<td>1</td>
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</tr>
<tr>
<td>No Parking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
AM PEAK: QUEUE COMPARISON

Existing design - 50th Percentile queue length
Preferred alternative - 50th Percentile queue length
AM PEAK: QUEUE COMPARISON

- Existing design - 95th Percentile queue length
- Preferred alternative - 95th Percentile queue length
PM PEAK: QUEUE COMPARISON

- Existing design - 50th Percentile queue length
- Preferred alternative - 50th Percentile queue length
PM PEAK: QUEUE COMPARISON

Existing design - 95th Percentile queue length
Preferred alternative - 95th Percentile queue length
How do we best:

• **Connect bike facilities** from Arlington and the Fielder Bridge? Provide inbound bike access without encouraging sidewalk riding/contraflow on Beacon?

• Maintain **capacity for right-turn** access to Storrow from Beacon?

• Maintain **capacity for thru** access to Storrow from Berkeley?

• Consider **residential parking** concerns?
BEACON ST (BERKELEY – MASS) TIME LINE

2017
• Utility work, bridge construction
• Implement changes in fall

2018
• Utility work
• 1-year evaluation of crashes, speeds

2019
• Repaving
• Make adjustments to design

2020
• 3-year evaluation of crashes, speeds
DISCOURAGING TRUCKS FROM BERKELEY
DISCOURAGING TRUCKS FROM BERKELEY

• Partnership with MassDOT to improve signage
  – Include height limit earlier
• NO TRUCKS pavement markings?
• Other ideas?
CONNECTING BICYCLE ROUTES
CONTRAFLOW BICYCLING

D St, Boston

Chicago
CONNECTING BICYCLE ROUTES
CONNECTING BICYCLE ROUTES
QUESTIONS & COMMENTS

• Share your comments tonight
• Email your comments by June 30 to: visionzero@boston.gov
• Mail comments by June 30