Kelley Square Improvement Project
Worcester, MA

WORCESTER BIKE SUMMIT
JUNE 25, 2019
Project Area
Why improve Kelley Square?

• A badge of honor and a concern for generations
• A complex network located in a vibrant and growing neighborhood
• Close proximity to I-290 Interchange
• Safety issues for all users
  – Top 10 crash location
• Little to no Multimodal Accommodation
• High traffic volume and operational issues
• The primary purpose is to improve safety for all users
Project Needs & Goals

- Improve **safety** for all users
- Improve **mobility** for all users
- Enhance neighborhood **connectivity**
- Create a **walkable & bikeable** Kelley Square
- Support existing businesses and **economic growth**
## Crash Summary (2013-2016)

<table>
<thead>
<tr>
<th>Collision Type</th>
<th>Madison St. Washington to Green</th>
<th>Kelley Square</th>
<th>I-290 Interchange</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>49</td>
<td>80</td>
<td>61</td>
<td>0</td>
<td>190</td>
</tr>
<tr>
<td>Head-On</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Rear-End</td>
<td>13</td>
<td>49</td>
<td>32</td>
<td>0</td>
<td>94</td>
</tr>
<tr>
<td>Sideswipe (Opp. Direct.)</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Sideswipe (Same Direct.)</td>
<td>6</td>
<td>27</td>
<td>34</td>
<td>0</td>
<td>67</td>
</tr>
<tr>
<td>Single Vehicle</td>
<td>6</td>
<td>25</td>
<td>12</td>
<td>0</td>
<td>43</td>
</tr>
<tr>
<td>Non Motorist (Bike/Pedestrian)</td>
<td>4</td>
<td>13</td>
<td>5</td>
<td>0</td>
<td>22*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>81</strong></td>
<td><strong>195</strong></td>
<td><strong>148</strong></td>
<td><strong>1</strong></td>
<td><strong>403</strong></td>
</tr>
</tbody>
</table>

* The non-motorist crashes are also accounted for in the crash totals.
Existing Operations—PM Conditions
Public Outreach—What We Did

Established a Robust Public Engagement and Outreach Plan

- Participated in local events – Farmer’s Markets & other City events

- Conducted workshops:
  - Workshop #1—existing conditions/ issues/ focus areas
  - Workshop #2—evaluating/ scoring improvement alternatives
  - Workshop #3—placemaking, landscape and urban design opportunities

- Conducted Public Meetings:
  - December 5, 2018—project status and update
  - February 27, 2019—25% Design Public Hearing
  - May 6, 2019—Landscape meeting
  - May 22, 2019—Design Update/ Construction meeting
Public Outreach—What We Did

Established a Robust Public Engagement and Outreach Plan

• Coordinated with Key Stakeholders:
  – City of Worcester
    • City Manager’s Office
    • Public Works/Engineering
    • Economic Development/Planning
  – Transportation Advisory Group
  – FHWA
  – WalkBike Worcester
  – Worcester Regional Transit Authority
  – Urban Planning Partnership
  – Canal District Alliance
  – Green Island Neighborhood
  – Impacted businesses
  – Red Sox and Development Team

• Continuing coordination through design and construction
Improvement Alternatives Considered

- Signalization
- Unsignalized with Geometric Improvements
- Roundabout(s)—traditional and hybrids
- Potential change in directionality of streets
Public Outreach

Alternatives Evaluated

<table>
<thead>
<tr>
<th>Results from Public Workshop #2 on 10/24/18</th>
<th>Alt 1 Signalization</th>
<th>Alt 2 Roundabout</th>
<th>Alt 3 Hybrid – Option 1</th>
<th>Alt 4 Hybrid – Option 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>37%</td>
<td>28%</td>
<td>74%</td>
<td>85%</td>
</tr>
<tr>
<td>Pedestrian Facilities</td>
<td>32%</td>
<td>9%</td>
<td>76%</td>
<td>85%</td>
</tr>
<tr>
<td>Bicycle Facilities</td>
<td>10%</td>
<td>12%</td>
<td>50%</td>
<td>66%</td>
</tr>
<tr>
<td>Business Access/Egress</td>
<td>15%</td>
<td>13%</td>
<td>37%</td>
<td>71%</td>
</tr>
<tr>
<td>Traffic Operations (congestion, delay &amp; queuing)</td>
<td>5%</td>
<td>21%</td>
<td>51%</td>
<td>74%</td>
</tr>
<tr>
<td>Property and Building Impacts</td>
<td>19%</td>
<td>20%</td>
<td>24%</td>
<td>64%</td>
</tr>
<tr>
<td>Place Making</td>
<td>15%</td>
<td>26%</td>
<td>65%</td>
<td>84%</td>
</tr>
<tr>
<td>Neighborhood Connectivity</td>
<td>29%</td>
<td>12%</td>
<td>44%</td>
<td>78%</td>
</tr>
<tr>
<td>Transit Options</td>
<td>22%</td>
<td>15%</td>
<td>18%</td>
<td>47%</td>
</tr>
<tr>
<td>Community Health</td>
<td>6%</td>
<td>12%</td>
<td>41%</td>
<td>73%</td>
</tr>
</tbody>
</table>

Percent scored as positive impact from the community as part of October's workshop
Alternatives Evaluated

Alternatives

- Alternative 1 Signalization
  - Positive Impact: 19%
  - Neutral Impact: 32%
  - Negative Impact: 49%

- Alternative 2 Roundabout
  - Positive Impact: 17%
  - Neutral Impact: 36%
  - Negative Impact: 47%

- Alternative 3 Hybrid Option 1
  - Positive Impact: 14%
  - Neutral Impact: 37%
  - Negative Impact: 49%

- Alternative 4 Hybrid Option 2
  - Positive Impact: 73%
  - Neutral Impact: 15%
  - Negative Impact: 12%

Results from Public Workshop #2 on 10/24/18
Hybrid Roundabout—First in Massachusetts

- Clearly delineates traffic lanes/fewer conflict points
- Closest to existing geometry
- Traffic calming
- Provides connectivity between neighborhoods
- Shorter pedestrian crossings with opportunities to cross Kelley Sq.
- Provides bike facilities on and off roadway
Pedestrian Enhancements

- Long existing crossing distances
- Little to no refuge areas
- Traffic coming from multiple directions
- Shorter crossing distances
- Larger refuge areas
- Conflicting vehicle traffic coming from 1 direction
- High visibility/decorative crosswalks and RRFBs
**Bicycle Enhancements**

- **Separated Bike Lane**
- **Shared Use Path**
- **5’ on-road Bike Lane**
Shared Use Path

- Shared use path around hybrid and along Madison Street
- All SUPs will be 1-way circulation for bicyclists
- Hybrid SUP will use scoring, inlays and signage to better define bicycle and pedestrian movements
Amenity Zone
4’ Bike Zone within Shared Use Path
6’ walking Zone within Shared Use Path
Thermoplastic Directional Bike Zone Marking
Transition Zone
Separated Bike Facility—Harding Street

- Bicycle accommodation desired on both sides
- Proposed separated bicycle facility to run contraflow
- First separated bicycle facility in Worcester
Bicycle Connections to Regional Network

References: East Coast Greenway website, Central Massachusetts Metropolitan Planning Organization (CMMPO) Regional Bicycle Plan 2018