Mount Auburn Street
A Complete Streets Project

Public Works Subcommittee
Bicycle & Pedestrian Committee
June 19, 2017
Agenda

- Purpose of Meeting – *Why are we here?*
- Project Recap
- Public Participation & Outreach
- Project Context
- Bicycle Accommodations
- Design Overview & Approach
- Bicycle Facilities
- Recommendations
- Next Steps – *Where do we go from here?*
- Questions
Purpose of Meeting
Why are we here?

- Community Workshop held in December 2016
  - Bicycle & Pedestrian Committee along with residents expressed their concerns relative to bicycle accommodations
  - We are here to review bicycle accommodations and identify potential conflicts
  - Identify areas where additional analysis is needed
Project Recap

Transportation Improvement Program (TIP)

- Project programmed for FY 2022
- Highest Ranked Complete Streets Project on TIP
TIP Project Ranking
How are the projects ranked?

TIP Scoring Categories

- Safety
- System Preservation
- Mobility
- Clean Air
- Transportation Equity
- Equity
- Economic
- Vitality

<table>
<thead>
<tr>
<th>TIP ID</th>
<th>Proponent(s)</th>
<th>Project Name</th>
<th>DRAFT TOTAL SCORE (out of 134)</th>
<th>FINAL TOTAL SCORE (out of 134)</th>
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<tr>
<td>607777</td>
<td>Water town</td>
<td>Rehabilitation of Mount Auburn St. (Route 16)</td>
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<td>603428</td>
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<td>Rehabilitation of Bridge St.</td>
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<td>605275</td>
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<td>Lighting and Sidewalk Improvements on Exchange Street</td>
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<td>Danvers</td>
<td>Reconstruction on Collins St.</td>
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<td>601607</td>
<td>Hull</td>
<td>Reconstruction of Atlantic Ave. and related work</td>
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<td>601704</td>
<td>Newton</td>
<td>Reconstruction and signal improvements on Walnut St.</td>
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<td>605743</td>
<td>Ipswich</td>
<td>Resurfacing and related work on Central and South Main Sts.</td>
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<td>6088007</td>
<td>Cohasset</td>
<td>Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A), from Beechwood Street to the Scituate Town Line</td>
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<td>604735</td>
<td>Medfield</td>
<td>Reconstruction of North St.</td>
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<td>604745</td>
<td>Wrentham</td>
<td>Reconstruction of Taunton St. (Route 152)</td>
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<td>6078999</td>
<td>Dedham</td>
<td>Pedestrian improvements along Bussey St.</td>
<td>25</td>
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</table>
Public Participation & Outreach

- Regina Villa Associates added to project team
  - Public outreach / community engagement
  - Tracking and responding to comments & questions
- Implementation of project website
  - www.mountauburnstreet.com
  - Provide project updates
  - E-mail list / comment section
    - Encourage everyone to sign up for emails
Project Context
Mode-Sharing along Mt. Auburn Street

- MBTA Bus Route
  - About 5,000 passengers/day
  - 30% of all corridor users
- Serves as a regional connector
  - About 17,000 vehicles/day
- Emergency vehicle corridor to Mt. Auburn Hospital and East Watertown
- Employment within Watertown
  - About 19,000 and rising
Bicycle Accommodations
General Overview

Buffered Bike Lane, Parking on Outside

Buffered Bike Lane, Parking on Inside

Raised, Separated Bike Lane, no Parking
Design Guidelines

- NACTO – Urban Bikeway Design Guide
- MassDOT – Separated Bike Lane Planning & Design Guide
- MassDOT – Project Development Design Guide
- AASHTO – Guide for the Development of Bicycle Facilities
- Watertown Complete Streets Policy
Design Considerations for a Multi-modal Corridor

- Right of Way Constraints
- Pedestrian Accommodations
  - Wheelchair ramps / bump-outs
- Bicycle Accommodations
  - Bike lanes / intersection geometry
- Traffic Operations
  - Travel lane widths
  - Inclusion of turning lanes
    - Promotes vehicle maneuverability / reduce delays
Traffic Operations (cont.)

Mt Auburn Street
  Urban Principal Arterial

Lane widths
  Original concept → 12’
  Alternatives analysis → 11’

Turning lanes
  Alternatives analysis → 10’
  Minimum width for an arterial

Bike lane widths
  Minimum → 5’
  Recommended → 6.5’

Source: MassDOT Engineering Directive E-14-006
Design Considerations
Traffic Operations (cont.)

- MBTA Bus Route
  - Mirror-to-mirror width is 10.5’
  - MBTA prefers 11’ lanes (min.)

- Potential Transit Improvements
  - Stops / Shelters
  - Transit Signal Priority
  - Queue Jump Lanes
  - Dedicated Bus Lane (part time)
Design Challenges

- Utility Poles / Shade Trees
  - Underground utility conflicts
  - Potential for removal of public shade trees
- Buses / Catenary Wires
  - Bus Stops
- Maintenance
  - Snow removal & storage
- Streetscape
  - Investigate greenspace areas
  - Conscientious of impervious area
Driveways
- Significant amount of curb cuts
  - Close spacing
  - High traffic volumes
- Sight distance requirements
  - Potential loss of parking to meet requirements
- Grading
  - Extension of driveway aprons
  - Drainage implications

Source: MassDOT Separated Bike Lane Planning & Design Guide
Design Recommendation

Work within existing curb-to-curb width of Mount Auburn Street as it relates to vehicular and bicycle facilities
Bicycle Facilities
Patten Street to Coolidge Square

**North Side**
- Bike lane with painted roadside buffer
- Pros: Cost effective, snow removal
- Cons: On-road, bus stops in bike lane

**South Side**
- Painted buffer with bike lane on inside of parking (against travel lane)
- Pros: Easier to make turns, buffer zones on each side
- Cons: Riding alongside traffic

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**Alternative 1a**

North Side (to Watertown Sq.)

- 56’ Proposed Roadway Width

South Side (to Cambridge)

- 2’ Walk & Grass Strip
- 5’ Bike Lane
- 2’ Buffer
- 11’ Travel Lane
- 10’ Turn Lane
- 11’ Travel Lane
- 2’ Buffer
- 5’ Bike Lane
- 2’ Parking Lane
- 8’ Walk & Grass Strip

(varies)
Bicycle Facilities
Patten Street to Coolidge Square

**North Side**
- Bike lane with painted roadside buffer
- Pros: Cost effective, snow removal
- Cons: On-road, bus stops in bike lane

**South Side**
- Painted buffer with bike lane on the outside of parking (against curb)
- Pros: Away from moving vehicles
- Cons: Snow removal, loss of parking, parking bans

Alternative 1b

North Side (to Watertown Sq.)
- 5' Bike Lane
- 2' Buffer Lane
- 11' Travel Lane
- 10' Turn Lane

Proposed Roadway Width: 56'

South Side (to Cambridge)
- 5' Bike Lane
- 2' Buffer Lane
- 8' Parking Lane
- 2' Buffer Lane
- 5' Bike Lane
- (varies) Walk & Grass Strip

(varies) Walk & Grass Strip

7' Shldr. Parking Lane

5' Travel Lane

Walk & Grass Strip

56' Proposed Roadway Width
Bicycle Facilities

Patten Street to Coolidge Square

North Side
- Separated bike lane at sidewalk level
- Pros: Considered safest alternative
- Cons: Ped conflicts at bus stops, snow removal, cost

South Side
- Painted buffer with bike lane on inside of parking (against travel lane)
- Pros: Easier to make turns, inclusion of door zone
- Cons: Riding alongside traffic

Alternative 2a
- 5’ Bike Lane
- 4’ Shldr.
- 11’ Travel Lane
- 10’ Turn Lane
- 11’ Travel Lane
- 5’ Bike Lane
- 2’ Buffer
- 8’ Parking Lane
- (varies) Walk & Grass Strip

North Side (to Watertown Sq.)

South Side (to Cambridge)

56’ Proposed Roadway Width
Bicycle Facilities
Patten Street to Coolidge Square

**North Side**
- Separated bike lane at sidewalk level
- Pros: Considered safest alternative
- Cons: Ped. conflicts at bus stops, snow removal, cost

**South Side**
- Painted buffer with bike lane on the outside of parking (against curb)
- Pros: Away from moving vehicles
- Cons: Snow removal, loss of parking, parking bans

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**Alternative 2b**

North Side
(varies) Walk & Grass Strip
5’ Bike Lane
4’ Shldr.
11’ Travel Lane
10’ Turn Lane

South Side
(to Cambridge)
(varies) Walk & Grass Strip
8’ Parking Lane
2’ Buffer
5’ Bike Lane

56’ Proposed Roadway Width
# Bicycle Facilities

**Patten Street to Coolidge Square Overview**

Maintain existing curb to curb width of 56’

## North Side vs. South Side Comparison

<table>
<thead>
<tr>
<th></th>
<th>North Side (Westbound to Watertown Square)</th>
<th>South Side (To Cambridge)</th>
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<tbody>
<tr>
<td><strong>Pros</strong></td>
<td>Buffered Bike Lane <em>Alternative 1A &amp; 1B</em></td>
<td>Buffered Bike Lane (Bike Lane on Inside of Parking) <em>Alternative 1A &amp; 2A</em></td>
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<tr>
<td></td>
<td>Separated Bike Lane <em>Alternative 2A &amp; 2B</em></td>
<td>Buffered Bike Lane (Bike Lane on Outside of Parking) <em>Alternative 1B &amp; 2B</em></td>
</tr>
<tr>
<td><strong>Cons</strong></td>
<td>On road</td>
<td>Snow removal</td>
</tr>
<tr>
<td></td>
<td>Bus stops in bike lane</td>
<td>Parking bans</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>Cars parking in bike lane</td>
</tr>
<tr>
<td></td>
<td>Snow removal</td>
<td>Loss of parking spaces</td>
</tr>
<tr>
<td></td>
<td>Bus stops in bike lane</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pedestrian conflicts at bus stops</td>
<td></td>
</tr>
<tr>
<td></td>
<td>min. width provided, bikes cannot pass</td>
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</tbody>
</table>

- Easy snow removal
- Considered Safest
- Easier to make turns
- Buffer Zone on each side
- Away from moving vehicles

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**Note:**

- The table above provides a comparison between the North and South sides of Patten Street, highlighting the advantages and disadvantages of each proposed bicycle lane alternative. The North Side option includes buffer lanes on both sides of the street, while the South Side option includes separated bike lanes. The pros and cons are listed for each side, with the North Side generally offering more benefits for cyclists and pedestrians, while the South Side may have some drawbacks, such as reduced parking availability.
Bicycle Facilities

Coolidge Square to Cambridge City Line

- Investigating feasible options
  - This portion of corridor requires additional analysis
  - Potential inclusion of separate facilities

- Continued coordination
  - MBTA
    - Desire for enhanced bus operations
  - City of Cambridge
    - DCR Fresh Pond / Mt. Auburn Street

- Need for parking
  - Original concept proposed parking on north side
  - Separated facilities would not allow for an increase in parking in this area
**Recommendations**

- **Maintain existing curb-to-curb width**
- **Patten Street to Coolidge Square**
  - North side (westbound to Watertown Square)
    - Further investigate separated facilities
    - If deemed unsuitable, provide buffered lane
  - South side (eastbound to Cambridge)
    - Provide buffered bike lanes
      - on street side of parking / curbside
- **Coolidge Square to Cambridge City Line**
  - Further investigate separated facilities
Next Steps
Where do we go from here?

- Visit project website
  - www.mountauburnstreet.com
- Sign up for email updates

Patten Street to Coolidge Square
- Apply recommended section to the corridor
- Investigate intersection geometry / driveway interface

Coolidge Square to Cambridge City Line
- Further investigate feasible alternatives
- Coordinate with MBTA and City of Cambridge
Next Steps (cont.)

Coolidge Square to Cambridge City Line (cont.)

- Consistency with DCR Fresh Pond / Mt. Auburn Street Master Plan
Questions?