Draft Mobility Design Toolbox
(a living document)
Introduction

• This Mobility Design Toolbox was created as a reference for the River Street Reconstruction project. More information about the project, and a similar Streetscape Design Toolbox document can be found on the River Street Reconstruction web page, http://cambridgema.gov/riverstreet

• This toolbox is a reference for the types of design treatments that could be considered to address transportation opportunities and challenges on River Street. It is not intended to propose specific design solutions.

• It is intended to be a work in progress, or a living document, that can be refined throughout the River Street Reconstruction design process.
"Mobility" Includes People Using All Modes:
People walking, biking, taking public transit, driving, etc.
Pedestrian Facilities (1/2)

- Sidewalks
- Crosswalks
- Refuge Islands
Pedestrian Facilities (2/2)

Curb Extensions

Raised Side Street Crossing
Pedestrian Crossings

- Pedestrian Hybrid Beacon/HAWK
- Signalized
- Curb Ramps and Detectable Warning Strips
- Uncontrolled
- Rapid Flashing Beacon
- Crosswalk Illumination
Pedestrian Operations and Flow

Audible Pushbuttons and Signals

Wayfinding Signage
Bicycle Facilities: Separated Bicycle Lane (Street Level)

Marked Buffer

Parking Buffer

Planters

Plastic Flexposts
Bicycle Facilities: Separated Cycle Tracks - Raised

- Raised-No Parking
- Raised-Buffered w/Parking
- Concrete Buffer
- Raised Mountable Curb
Bicycle Facilities - Intersection Treatments

- Protected Intersections
- Signal Control
Bicycle Operations and Flow

Bike Signals
Wayfinding Signage
Pavement Markings
Bicycle Detection
Bicycle Amenities

- Bike Rack
- Secure Bike Parking
- On-Street Bike Corral
- Bike Share Stations
Bus Priority

Bus Only Lane

Transit Signals/Bus Queue Jump
Transit Signal Priority

Involves extending the green time at an intersection or calling the green time early for the approach that a bus is traveling on. This may or may not involve a dedicated lane or queue jump.

1. On-board technology requests signal priority.
2. In addition, in ground technology like loop detectors can detect when buses approach a signal.
3. The request is received and processed by traffic equipment or through a centrally controlled system.
Examples of Enhanced Bus Service

New Britain-Hartford Busway (CT)

MBTA Silver Line
Transit Stops (1/2)

Designated Stop Locations

Accommodations for Waiting Passengers
Transit Stops (2/2)

Floating Bus Stop

Curbside Pull-Out Bus Stop
Transit Accessibility

Detectable Warning Panels

Level & Clear Boarding Area

Kneeling Buses/Ramps
Transit Stop Signage

Bus Stop Sign

Wayfinding/Route Signage
Transit Amenities

Real Time Information

Bike Racks/Bike Parking
## Bus Stop Length Requirements

<table>
<thead>
<tr>
<th>Placement</th>
<th>Minimum – Standard Bus Stop Length*</th>
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<tbody>
<tr>
<td>Nearside</td>
<td>90 – 100’</td>
</tr>
<tr>
<td>Farside (after left turn)</td>
<td>60 – 80’ (100 – 120’ )</td>
</tr>
<tr>
<td>Midblock</td>
<td>100 – 120’</td>
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</tbody>
</table>

*Based on 40’ Bus in a Parking Lane

Source: MBTA Bus Stop Design Guidelines

Source: SEPTA Bus Stop Design Guidelines
Bus Stop Accessibility

Landing Area

Clear Zone

(Clear zone needed to deploy ramp)

Source: MBTA Bus Stop Planning and Design Guidelines
Traffic Flow/Operations

Optimized/Coordinated Signal Timings

Lane Use Markings and Signage
Traffic Calming

- Pinch Point
- Chicane
- Pedestrian Crossing Island
- Raised Side-Street Crossing
- Constrained Sight Lines
- Signal Progression (Signals timed to match the target speed)
- On-Street Parking
- Street Trees
Complex Intersections

Skewed intersections create safety hazards for pedestrians

Creating T intersections can calm traffic
Complex Intersections

Before

Five-way intersections also lengthen crossings and confuse drivers

After

Separating the legs can create a safer condition
Access Management

Curb Cut Locations, Width

Barriers
Private Vehicle Curbside Amenities

Parking Accommodations/
Vehicle Storage

EV Charging Stations
Emerging Mobility Options and Technologies Need to be Considered

Ride Hailing

Micromobility

Connected & Autonomous Vehicles

Note: electric scooters are not legal until state legislation is passed
Discussion

• Other tools you think should be included?

• What have you liked/disliked about the toolbox elements that were presented?

• What challenges or unintended side effects do you see by utilizing these toolbox elements?
THANK YOU!

riverstreet@cambridgema.gov