

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



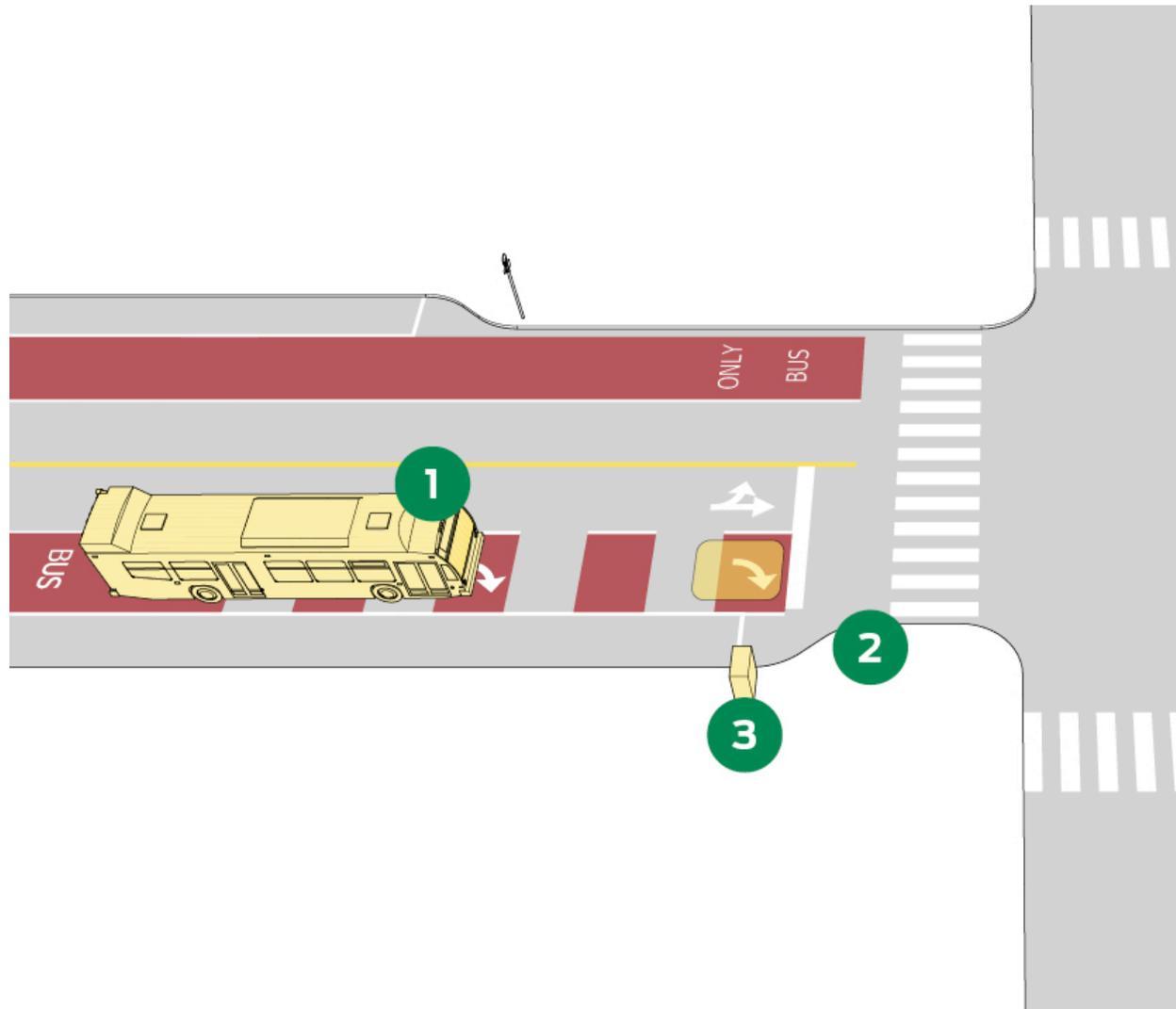
Bus Only Lane



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



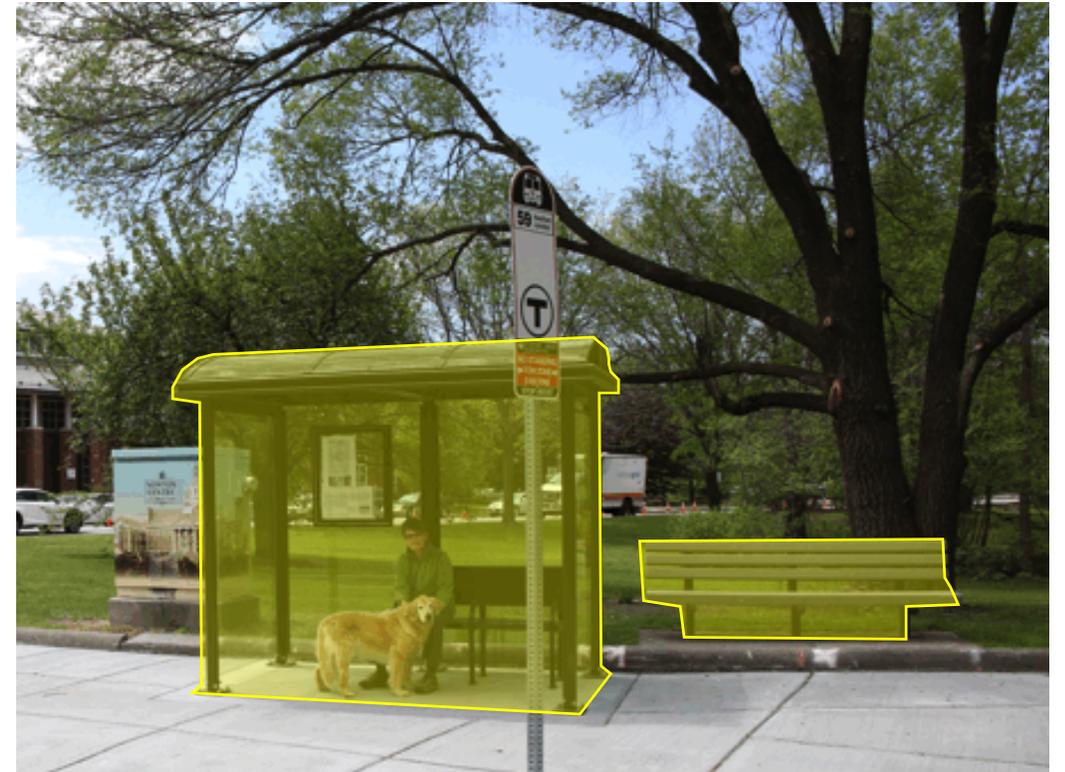
Transit Stops (1/2)



Designated Stop Locations



Accommodations for Waiting Passengers



Transit Stops (2/2)



Floating Bus Stop



Curbside Pull-Out Bus Stop



Transit Accessibility



Detectable Warning Panels



Kneeling Buses/Ramps



Level & Clear Boarding Area



Transit Stop Signage



Bus Stop Sign



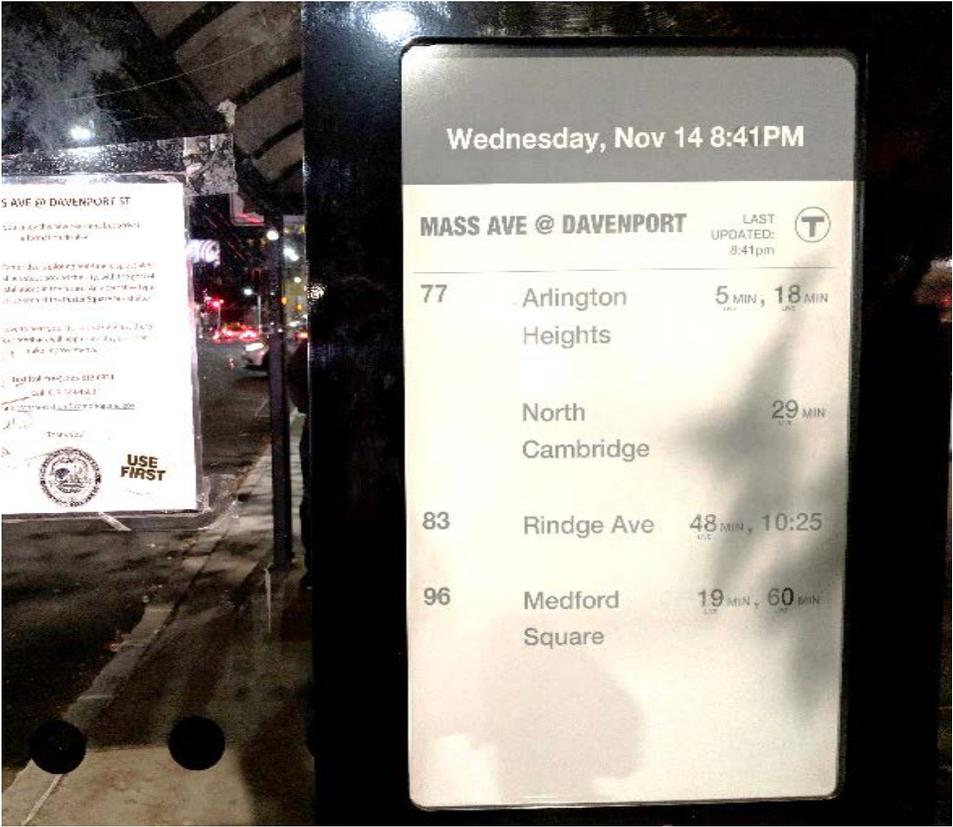
Wayfinding/Route Signage



Transit Amenities



Real Time Information



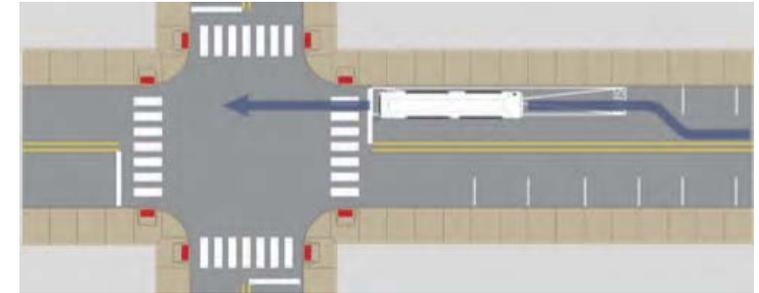
Bike Racks/Bike Parking



Bus Stop Length Requirements



Placement	Minimum – Standard Bus Stop Length*
Nearside	90 – 100'
Farside (after left turn)	60 – 80' (100 – 120')
Midblock	100 – 120'



*Based on 40' Bus in a Parking Lane

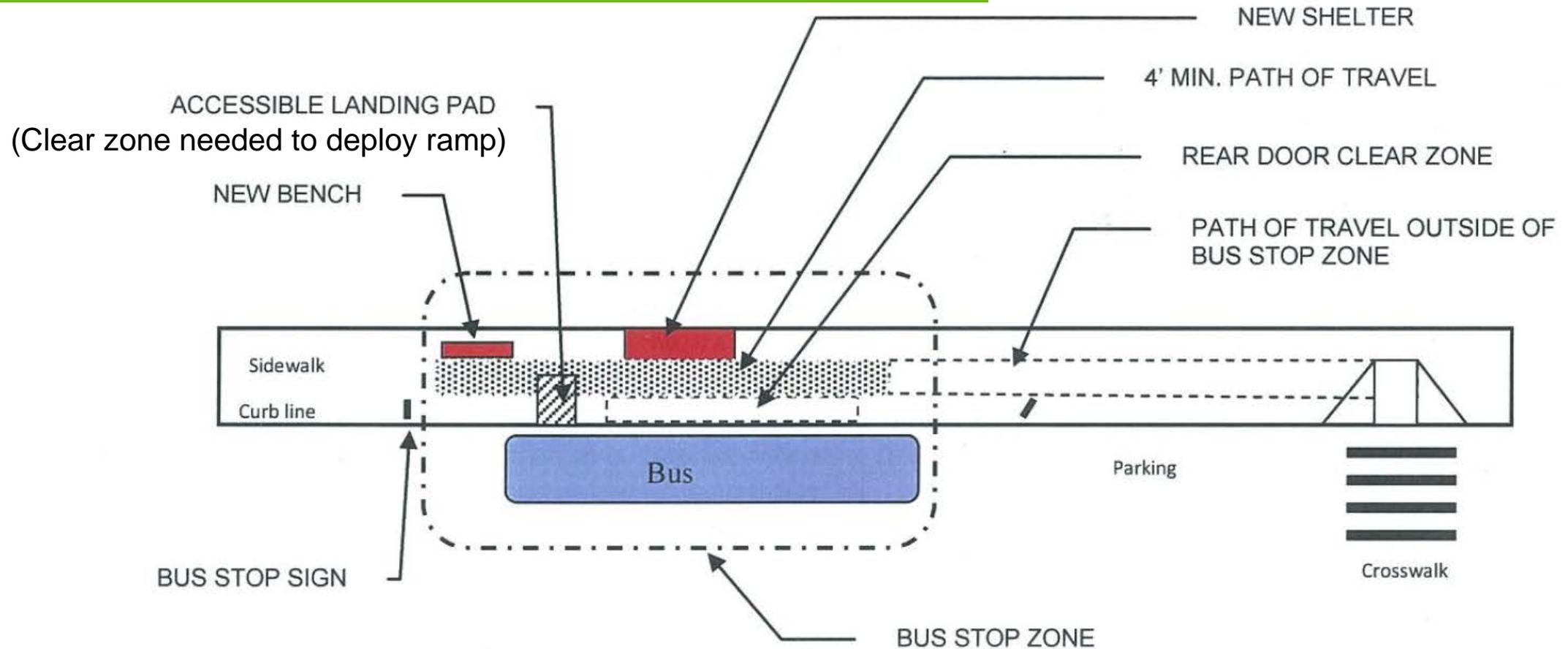
Source: MBTA Bus Stop Design Guidelines

Source: SEPTA Bus Stop Design Guidelines

Bus Stop Accessibility



Landing Area Clear Zone

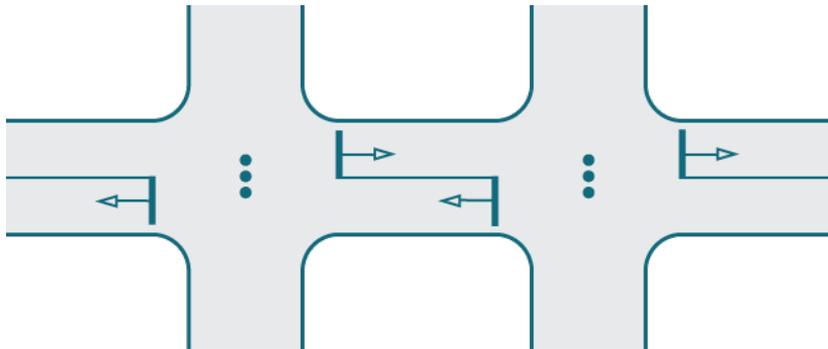


Source: MBTA Bus Stop Planning and Design Guidelines

Traffic Flow/Operations



Optimized/Coordinated Signal Timings



Lane Use Markings and Signage



Traffic Calming



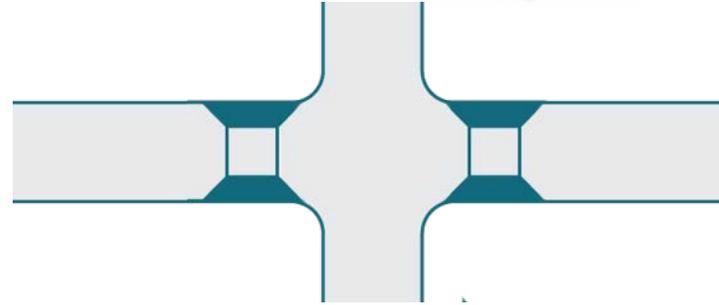
Pinch Point



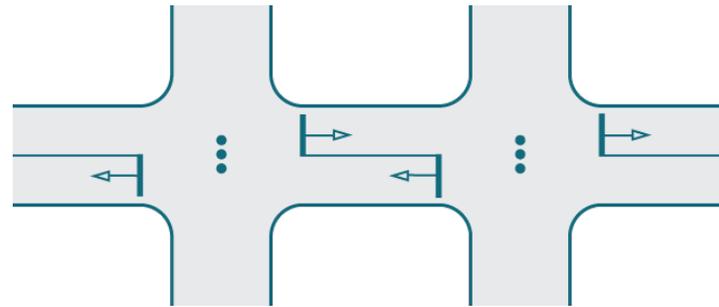
Chicane



Pedestrian Crossing Island



Raised Side-Street Crossing



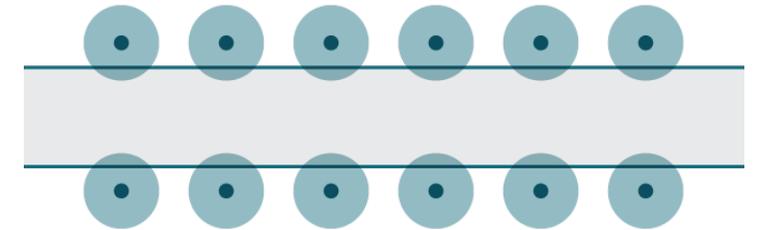
Signal Progression
(Signals timed to match the target speed)



Constrained Sight Lines



On-Street Parking



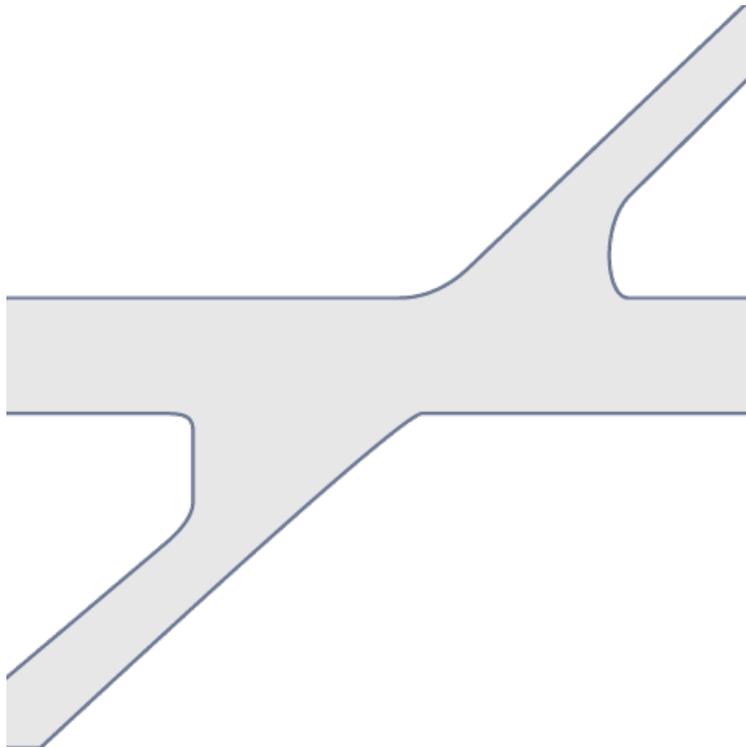
Street Trees

Complex Intersections

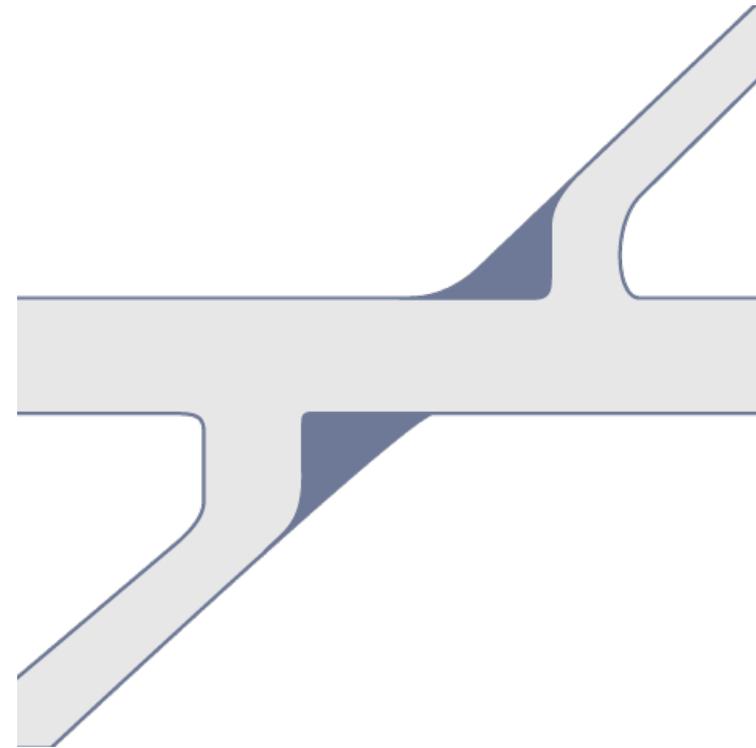


Before

After



Skewed intersections create safety hazards for pedestrians



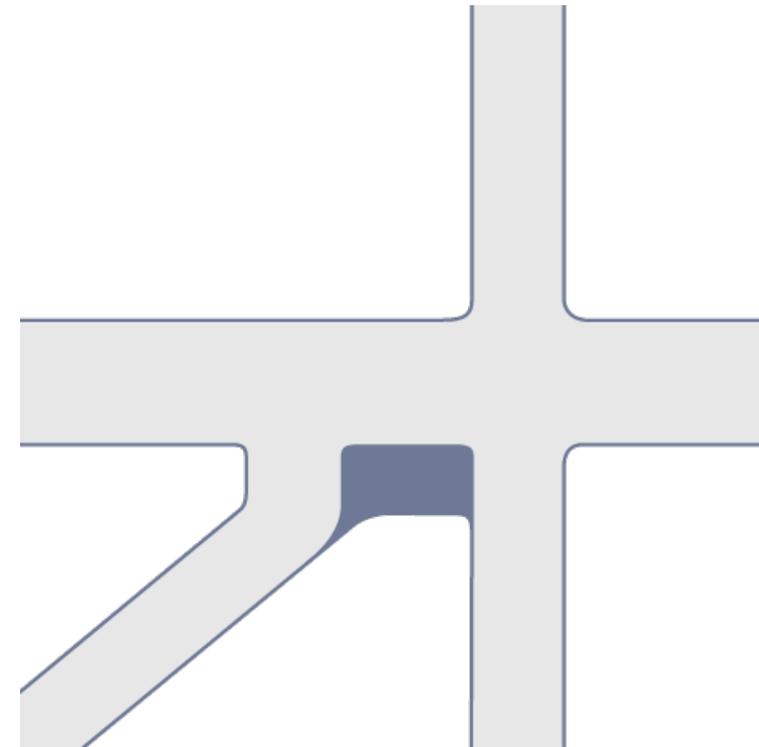
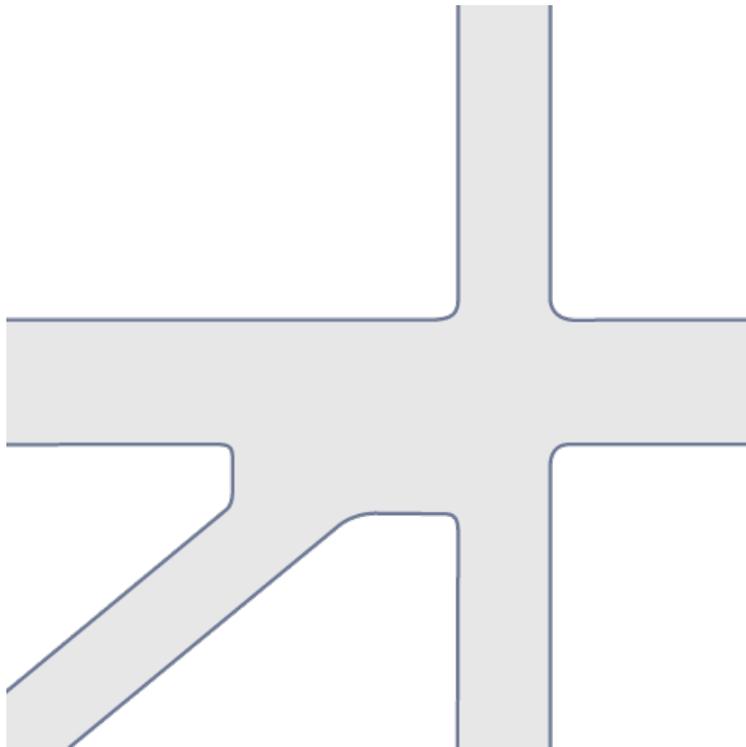
Creating T intersections can calm traffic

Complex Intersections



Before

After



Five-way intersections also lengthen crossings and confuse drivers

Separating the legs can create a safer condition

Access Management



Curb Cut Locations, Width



Barriers



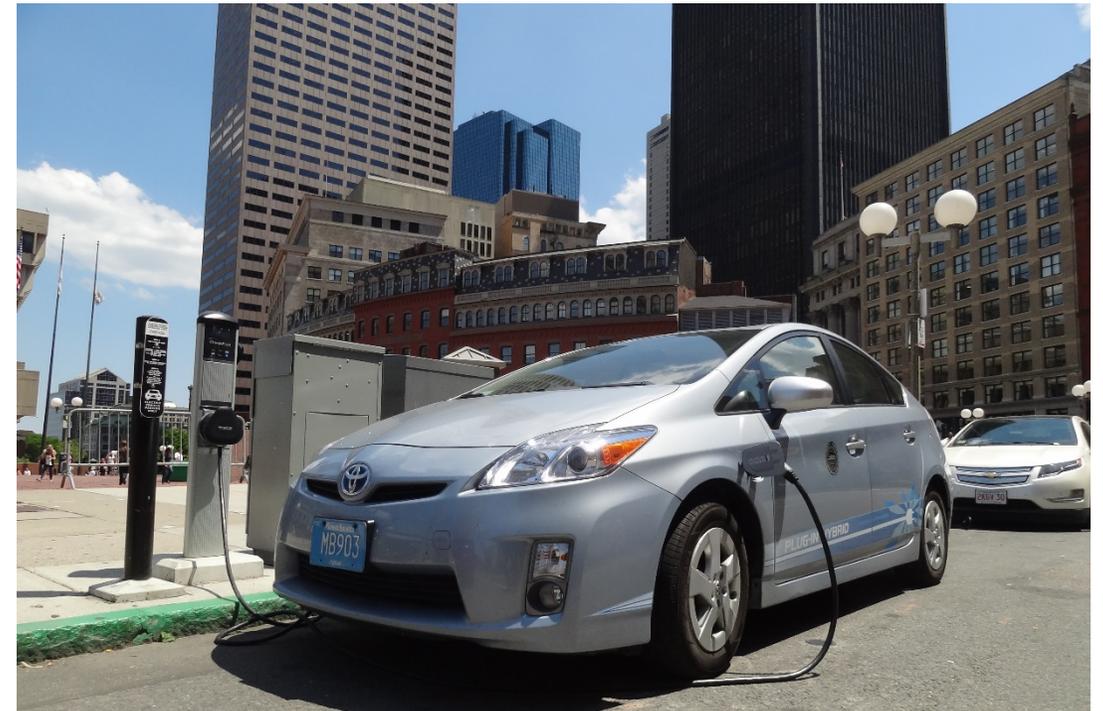
Private Vehicle Curbside Amenities



Parking Accommodations/ Vehicle Storage



EV Charging Stations



Emerging Mobility Options and Technologies Need to be Considered

Ride Hailing



Micromobility



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

Connected & Autonomous Vehicles



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!

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