

South Massachusetts Avenue Corridor Safety Improvements

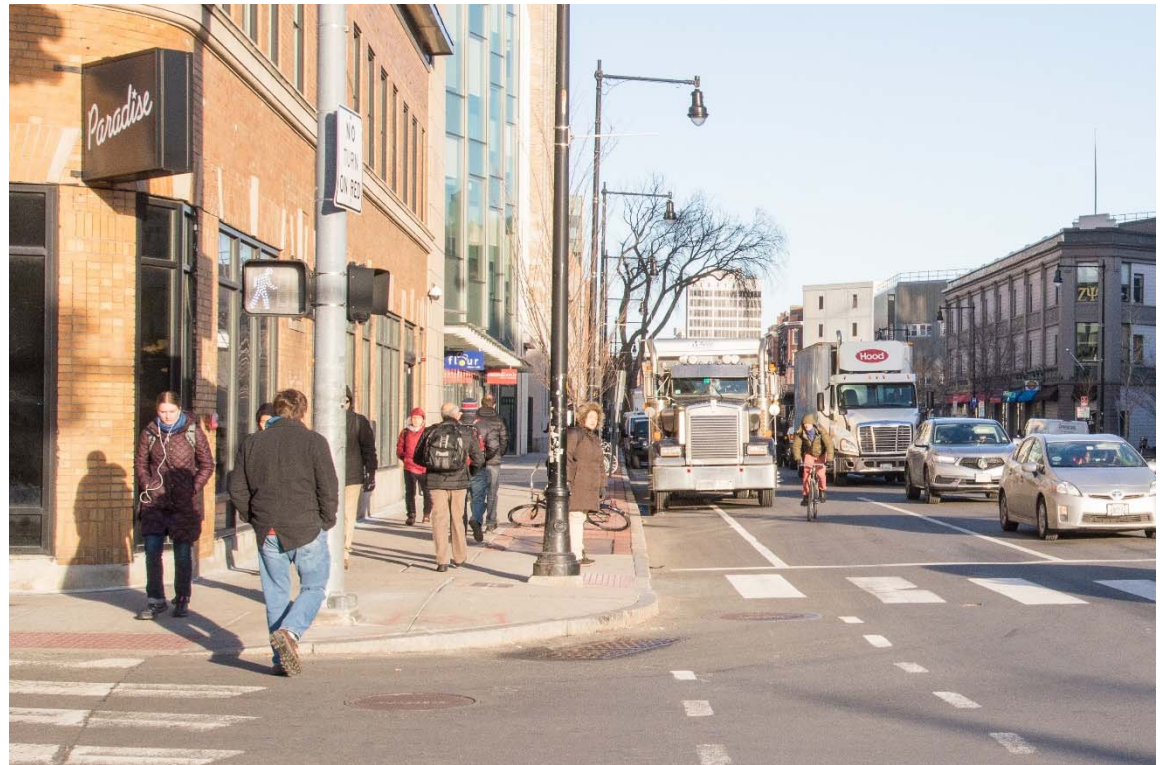


Advisory Committee Meeting #1 | April 12, 2018

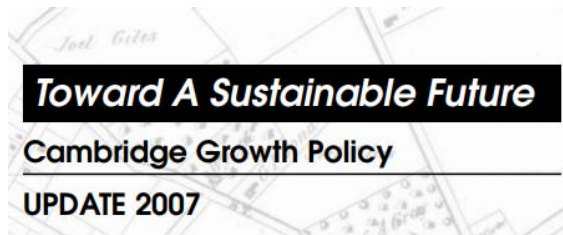
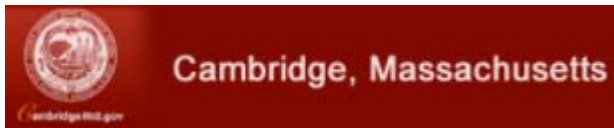
Agenda

Massachusetts Avenue – Sidney Street to Memorial Drive

- Welcome & Introductions
- Project Background
- Corridor Information
- Design Toolbox
- Next Steps
- Breakout Discussion:
Corridor Review



Municipal Policies



Vision Zero calls for the elimination of fatalities and serious injuries resulting from traffic crashes, and emphasizes that they can, and should be prevented (2016).

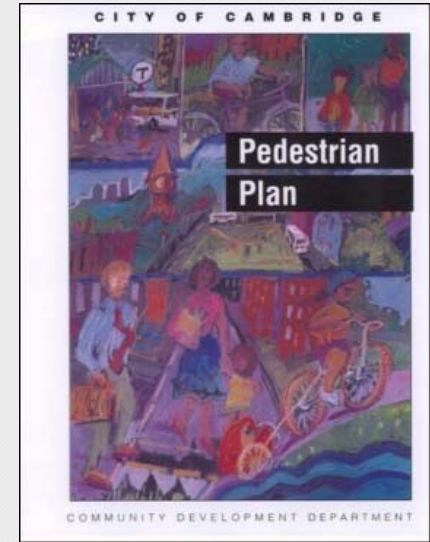
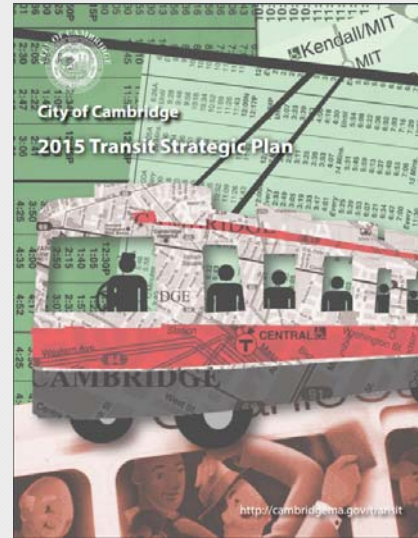
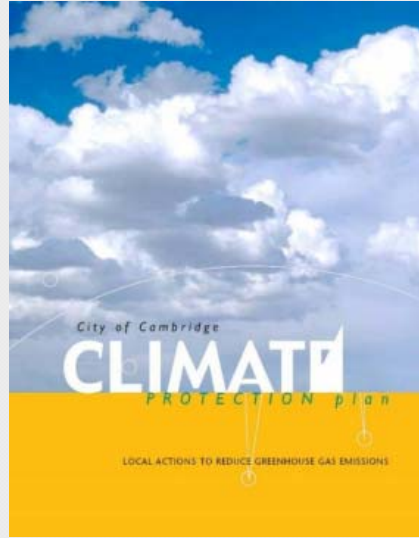
Complete Streets are designed and operated to enable safe access for *all* users – regardless of age, ability, or mode of transportation (2016).

Vehicle Trip Reduction Ordinance established programs to encourage alternatives to single-occupancy vehicle travel (1992).

Cambridge Growth Policy emphasizes sustainable modes of transportation such as walking, biking and using transit and low-emission vehicles, which promote livability and help to improve air quality and reduce greenhouse gas emissions (1993/2007).

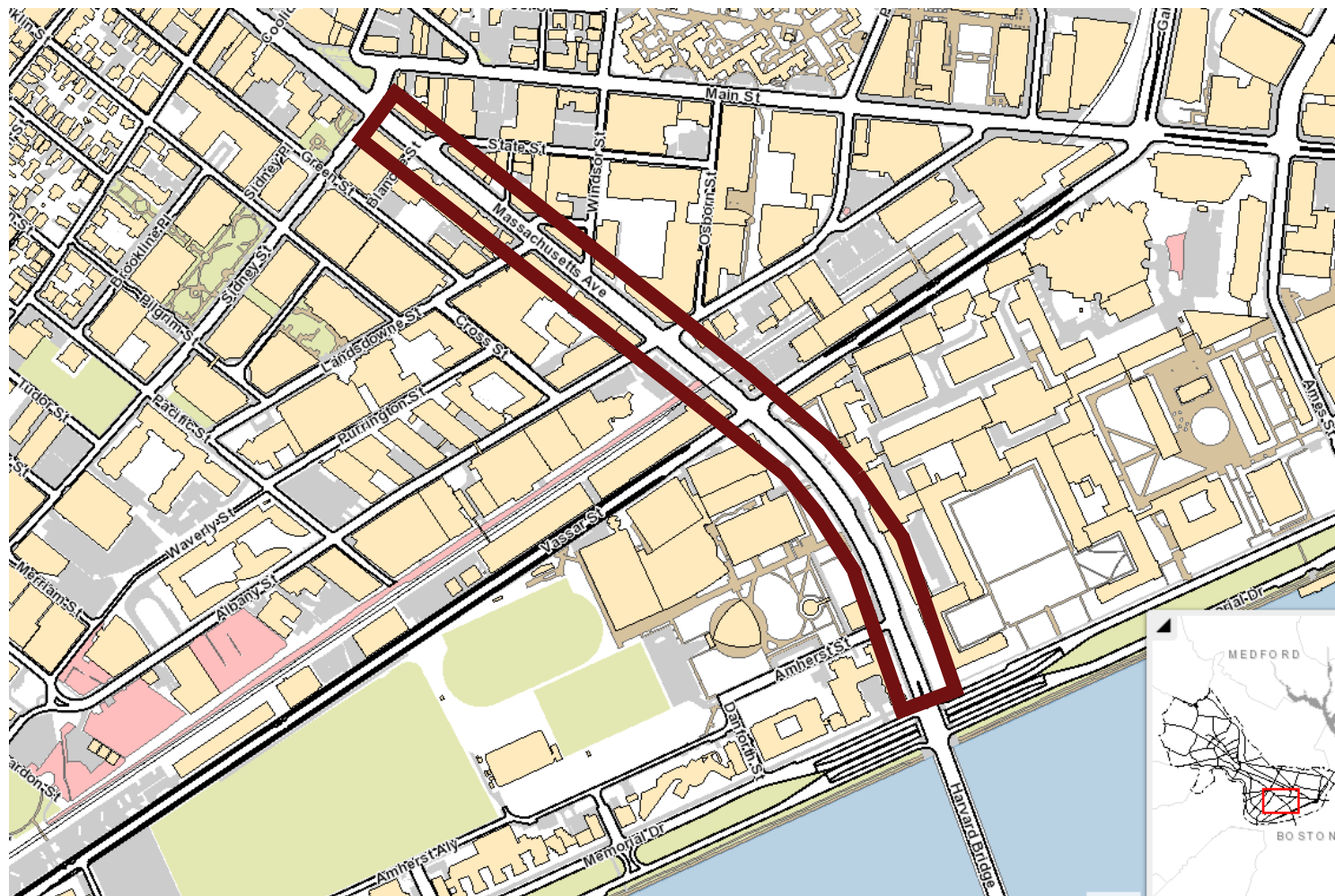
PROJECT BACKGROUND

Guiding Plans



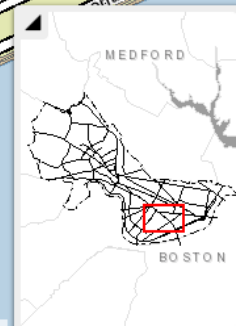
Project Limits

Lafayette Square to the Charles River *from Sidney Street to Memorial Drive*



Legend

 Project Limits



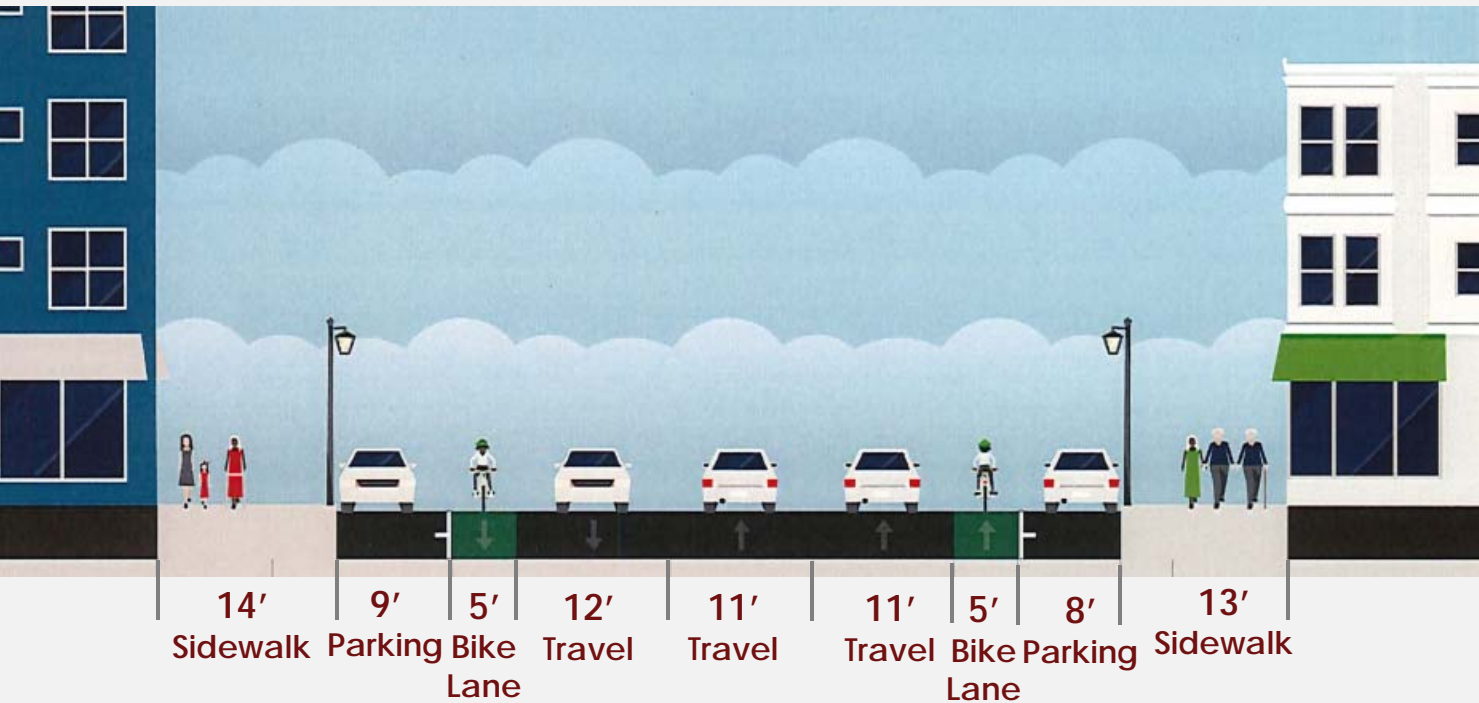
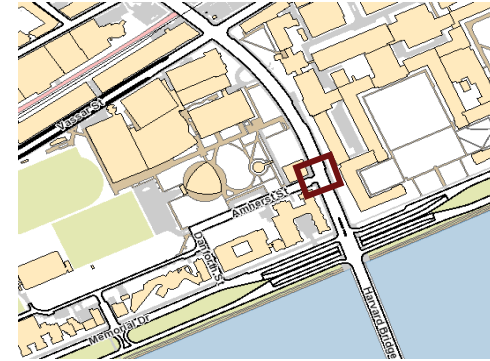
Existing Conditions

Lafayette Square to the Charles River
from Sidney Street to Memorial Drive



Existing Conditions

Mass. Ave. Cross-Section (at Amherst Street)



- ✓ 88' wide
- ✓ On-street bike lane
- ✓ On-street vehicle parking
- ✓ Mix of meters and other parking
- ✓ Bus stops
- ✓ Curb extensions at multiple locations

Existing Users

People Walking

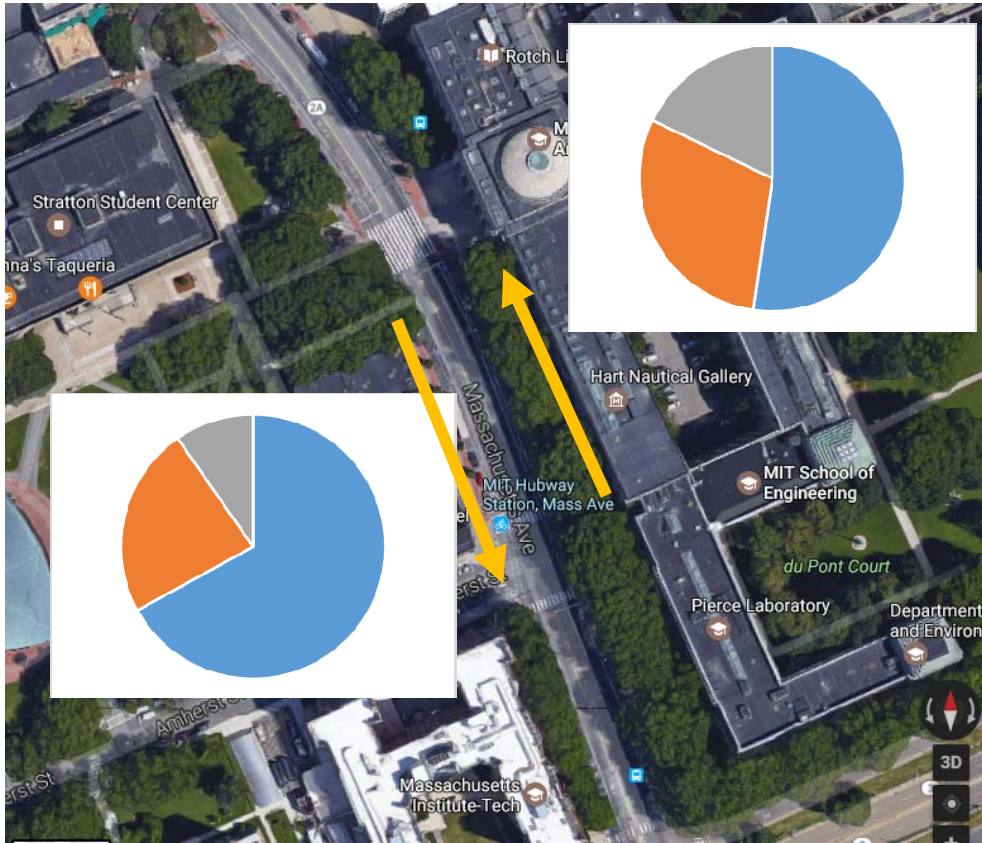


Walking in this corridor:

- ✓ Boston/Cambridge connection
- ✓ Charles River to Central Square
- ✓ MIT intra-campus
- ✓ Local businesses

Users: Transit, Driving, Bicycling

Massachusetts Avenue (North of Amherst at MIT)



People using bus



People biking



Number of motor vehicles

Corridor Users

People Biking – Bicycle Level of Comfort Analysis

- People have varying levels of tolerance for traffic stress created by volume, speed, proximity of adjacent traffic and on-street parking.
- An all-ages and ability network has BLC of 1 or 2
- Facilities with BLC 1 or 2 are generally safest

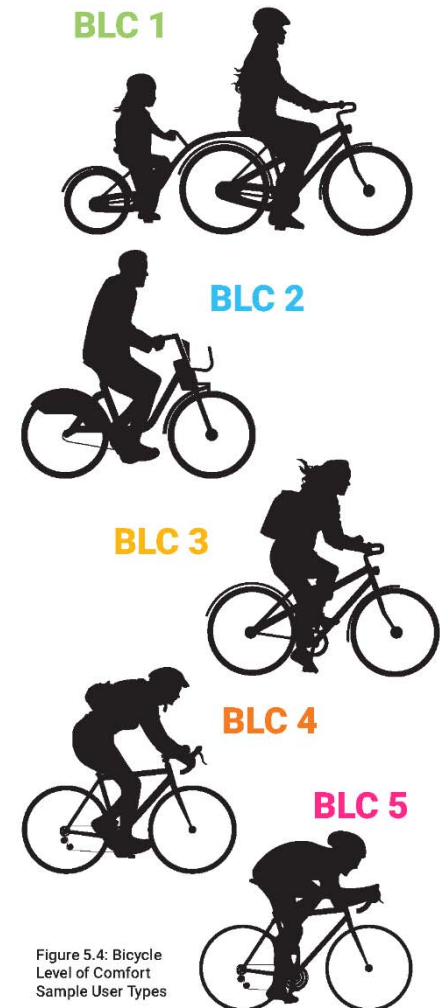


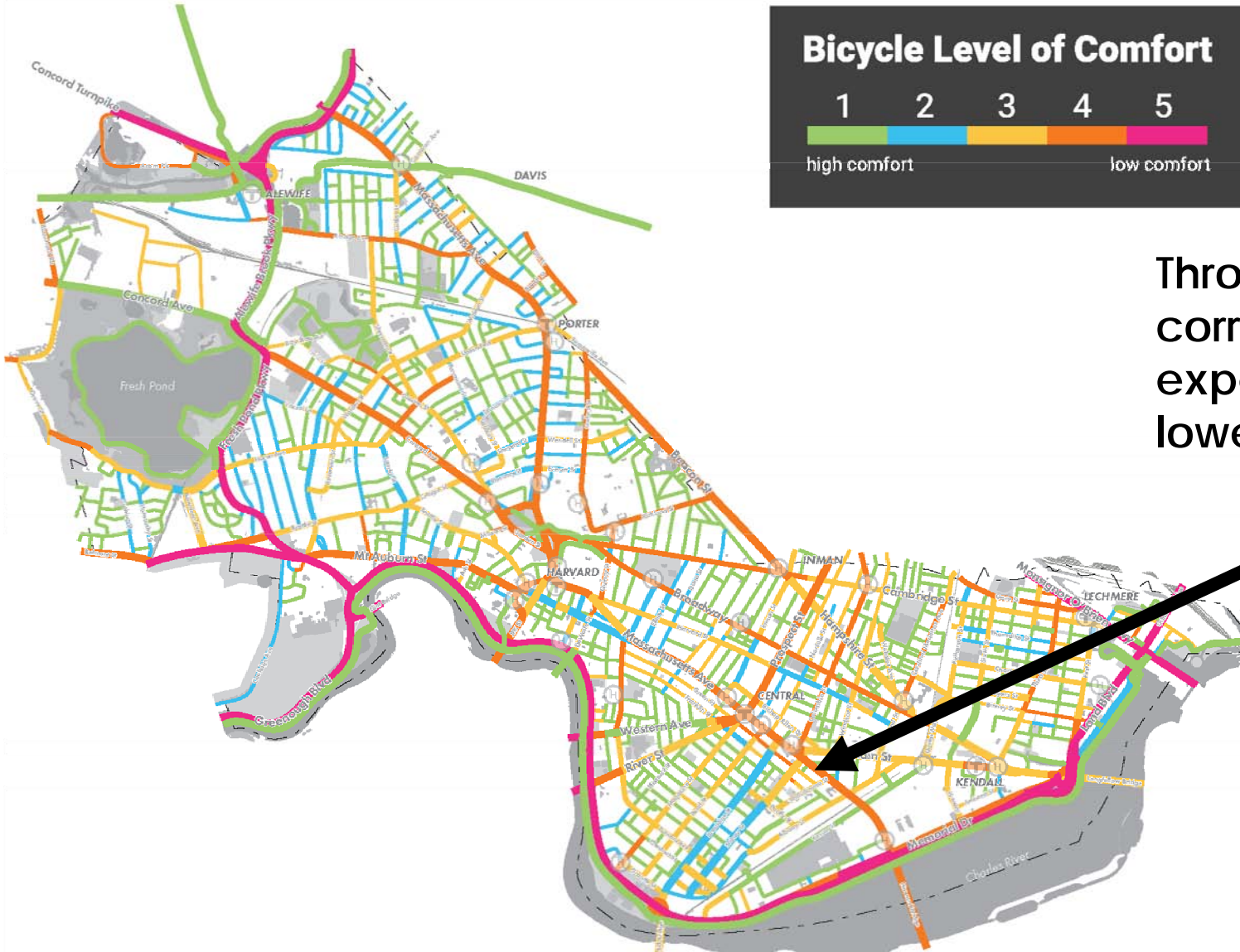
Figure 5.4: Bicycle Level of Comfort Sample User Types

Corridor Users

People Biking – Bicycle Level of Comfort Analysis

BICYCLE LEVEL OF COMFORT	TYPICAL CRITERIA	EXAMPLES		
1	Protected/Separated or Shared with ADT <2K or Shared with Speed <30 mph	 Pemberton Street	 Community Path	 Vassar Street
2	Wide/Buffered Bike Lane or Bike Lane w/out Parking adjacent or Shared with ADT 2-4K or Shared with Speed <30 mph	 Richdale Avenue	 Broadway	
3	Bike Lane adjacent to Parking or Shared with Speed 30 mph or Shared with ADT 4-6K or Narrow Operating Space	 Magazine Street	 Main Street	
4	Shared with Speed 30+ mph or Shared with ADT 6-15K or High Frequency Bus Route	 Massachusetts Avenue	 Broadway	
5	Shared with Speed 35+ mph or Shared with ADT 15+K and No Parking and 2+ Travel Lanes per direction	 Land Boulevard	 O'Brien Highway /Route 28	

Corridor Users: People Bicycling

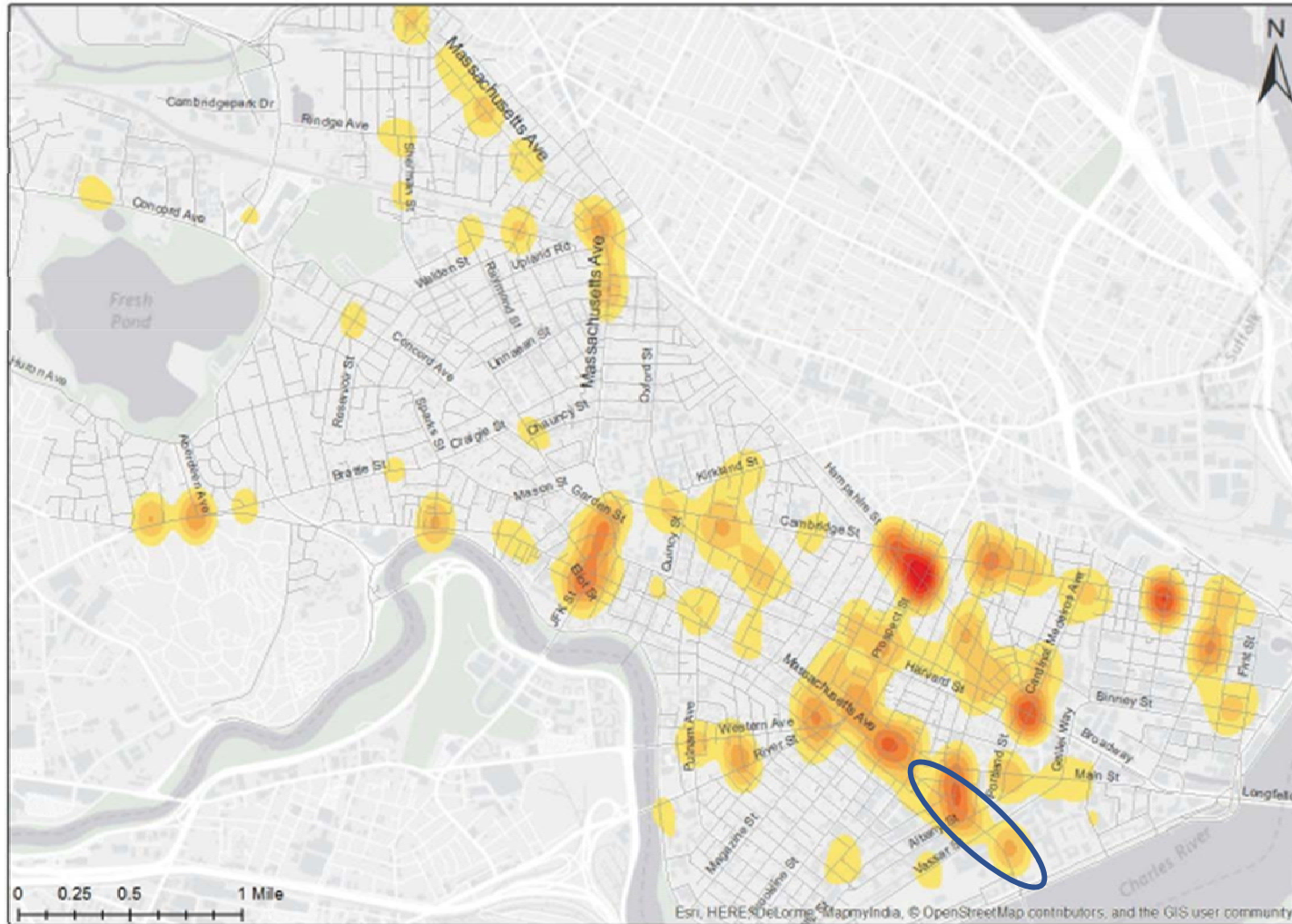


Throughout the entire corridor length, users experience the second lowest level of comfort.

Corridor Safety History

Reported Crashes Requiring EMS Transport, 2015-2016

Crashes Requiring EMS Transports 2015-2016



Density Map of Crashes Requiring EMS Transport to the Hospital, as reported by responding officer, for 2015 and 2016.

Corridor Safety History

Reported Bicycle Crashes, 2015-2016



Transit Service Analysis

MBTA Bus Route 1*: AM Peak



*Criteria:

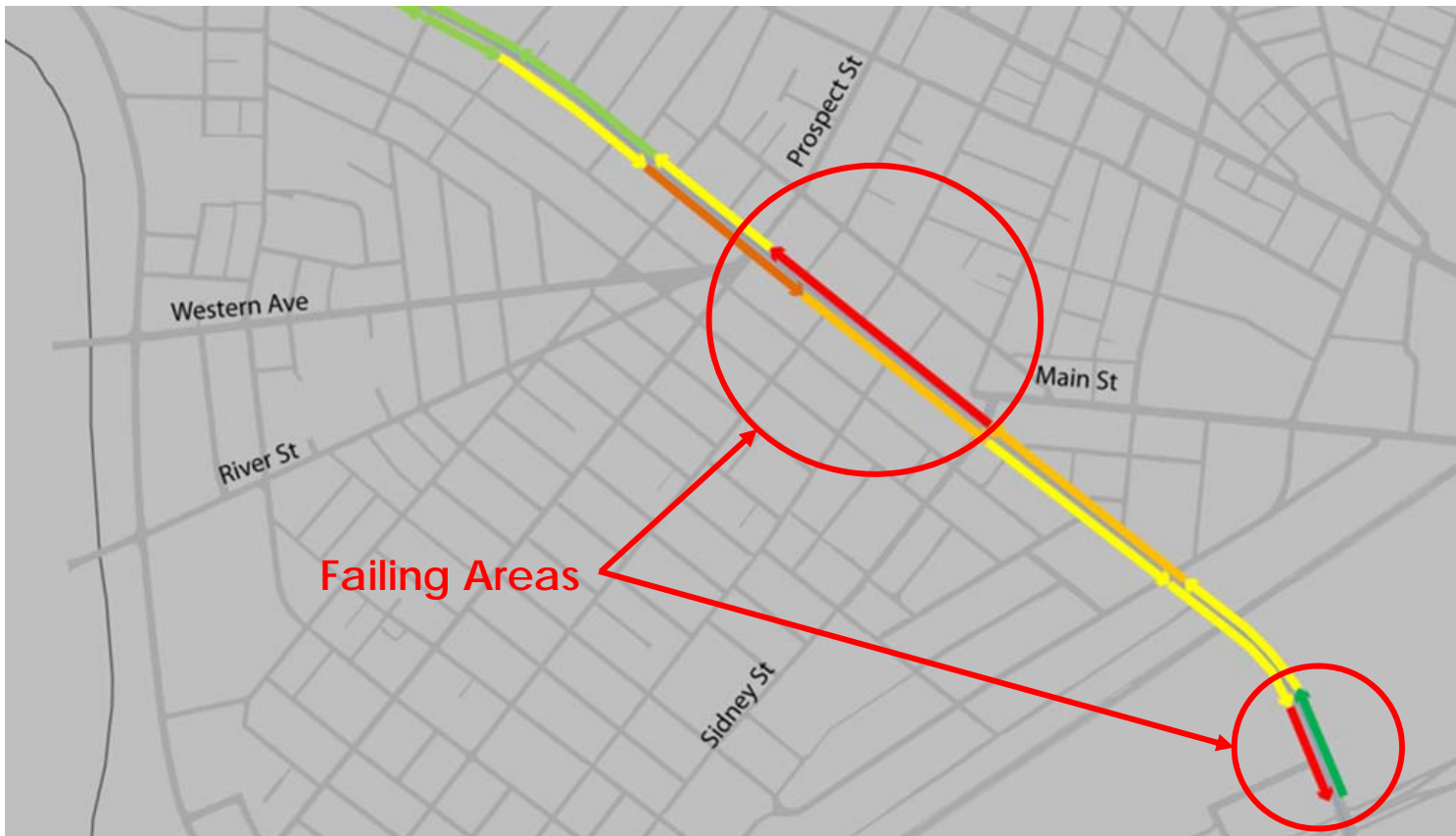
Excess vehicle travel time compared to a minimum

Passenger time (travel time x riders)

Reliability (how much the travel time varies)

Transit Service

MBTA Bus Route 1: PM Peak



Composite Grade
Excellent (A)
Good (B)
Satisfactory (C)
Unsatisfactory (D)
Poor (E)
Failing (F)
N/A

Method: Automatic Passenger Counter (APC) Data (MBTA)

Corridor Users: People Driving

2016 Massachusetts Avenue/Main Street Traffic Volume Study

Weekday Motor Vehicle Volumes

- Eastbound = 6,713 vehicles/day
- Westbound = 6,166 vehicles/day

Cambridge average vehicle occupancy = 1.1, therefore:

- Eastbound = 7,385 people/day
- Westbound = 6,783 people/day



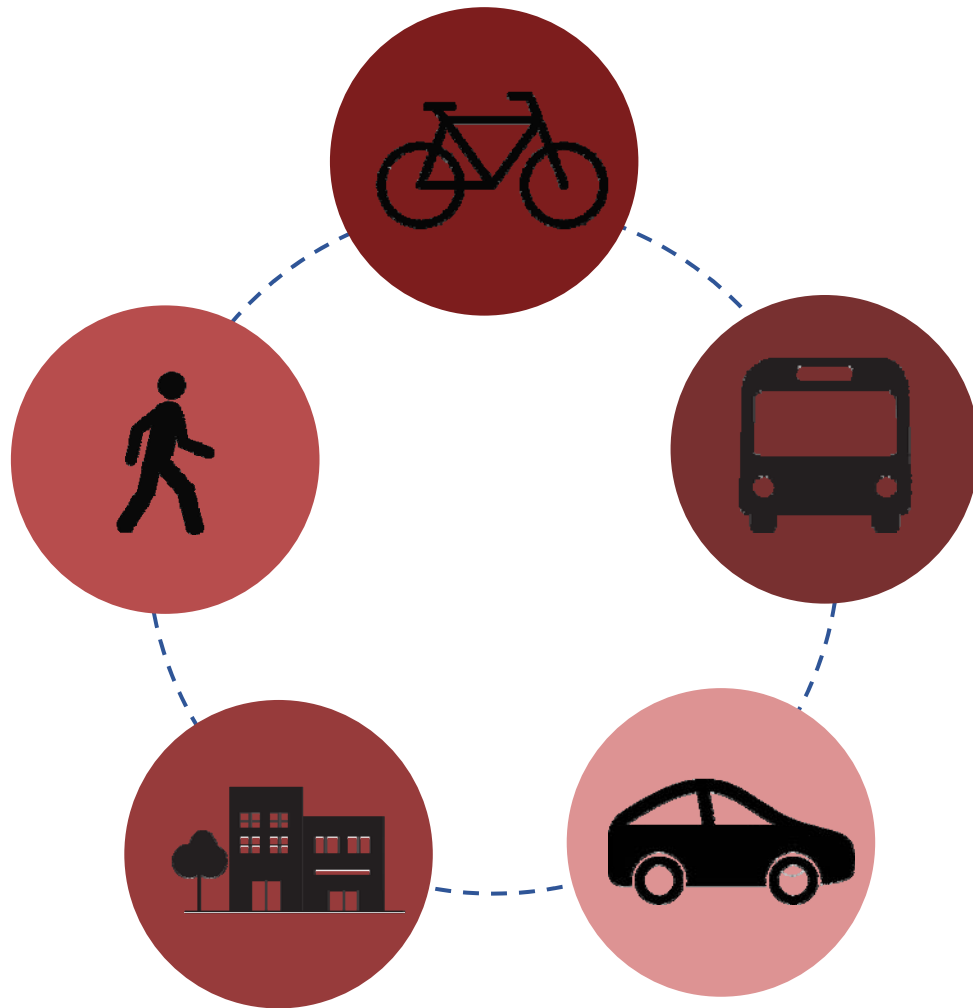
Based on 2016 VHB study conducted on Massachusetts Avenue west of Sidney Street on a Tuesday and Wednesday in mid-May.

Project Goals



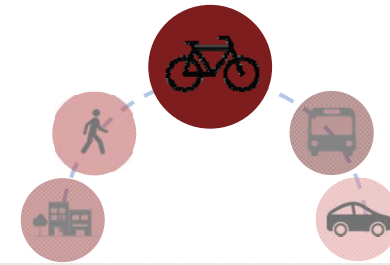
- ✓ Address safety issues and reduce crashes - Vision Zero
- ✓ Reduce transit delays
- ✓ Enable/encourage people of all ages and abilities to choose sustainable transportation

Design Considerations



- ✓ Bicyclist safety & comfort
- ✓ Pedestrian safety & comfort
- ✓ MBTA Bus stops
- ✓ MBTA Bus reliability
- ✓ Tour Bus pick-up/drop-off
- ✓ Accessible parking
- ✓ Loading & deliveries
- ✓ Street maintenance
- ✓ On-street parking

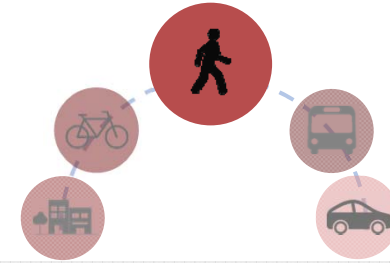
Design Considerations



✓ Bicyclist safety and comfort



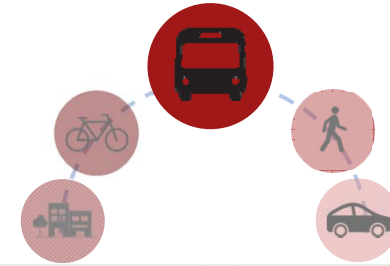
Design Considerations



✓ Pedestrian safety & comfort:
Crosswalks and sidewalks



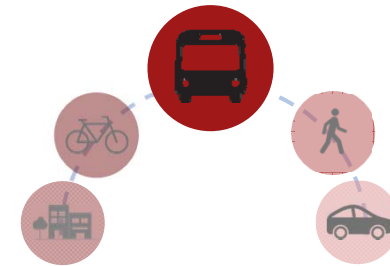
Design Considerations



- ✓ Bus stops
- ✓ Reliability: Queue jumps, signal priority



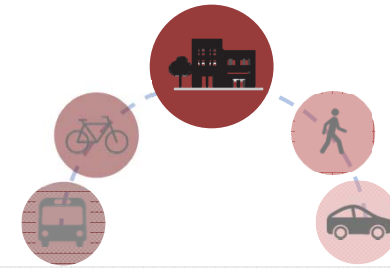
Design Considerations



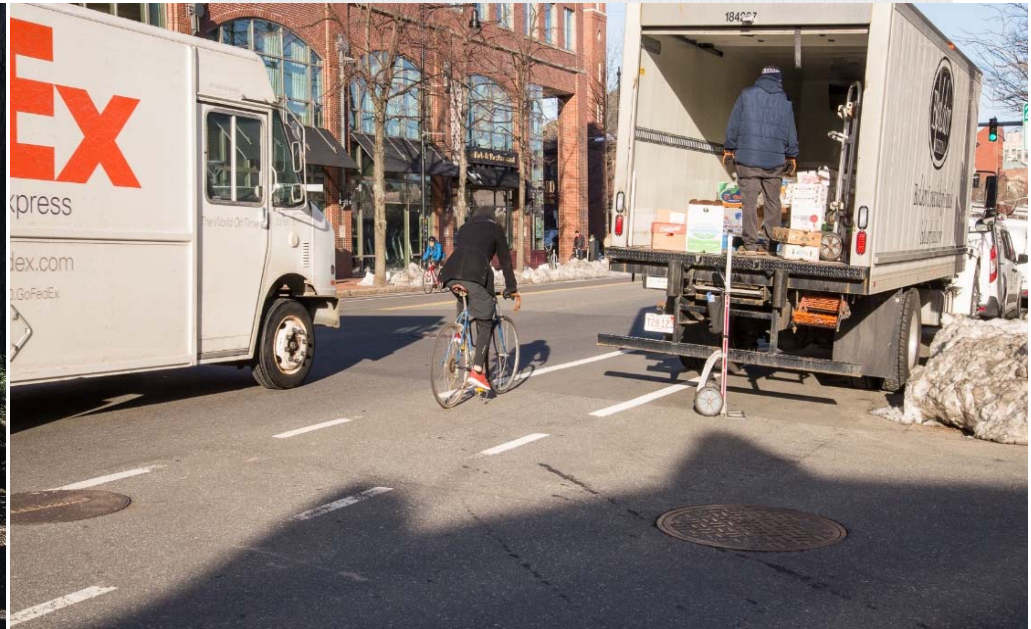
- ✓ Private shuttles, tour bus & other pick-up and drop-off
- ✓ Food truck locations



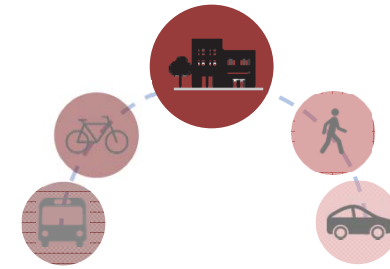
Design Considerations



- ✓ Accessible parking
- ✓ Loading and deliveries



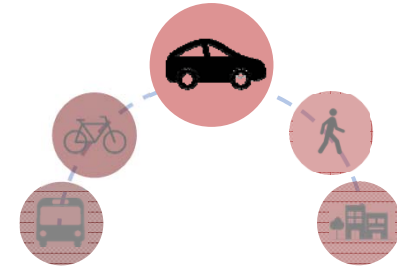
Design Considerations



✓ Street maintenance



Design Considerations



✓ On-street parking



Potential Project Toolbox

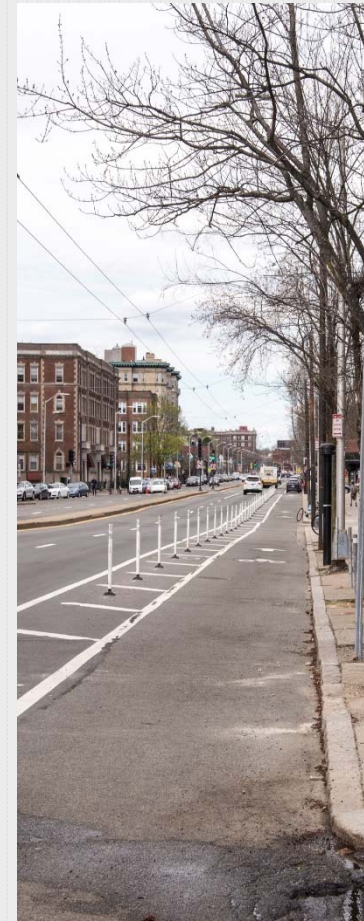
✓ Signage



✓ Pavement Markings



✓ Flexible Delineator Posts



Potential Project Toolbox

✓ Turn Lanes



✓ Bus Queue Jump/Priority Lane



✓ Additional Crosswalks



✓ Signal Phasing and Timing



NEXT STEPS

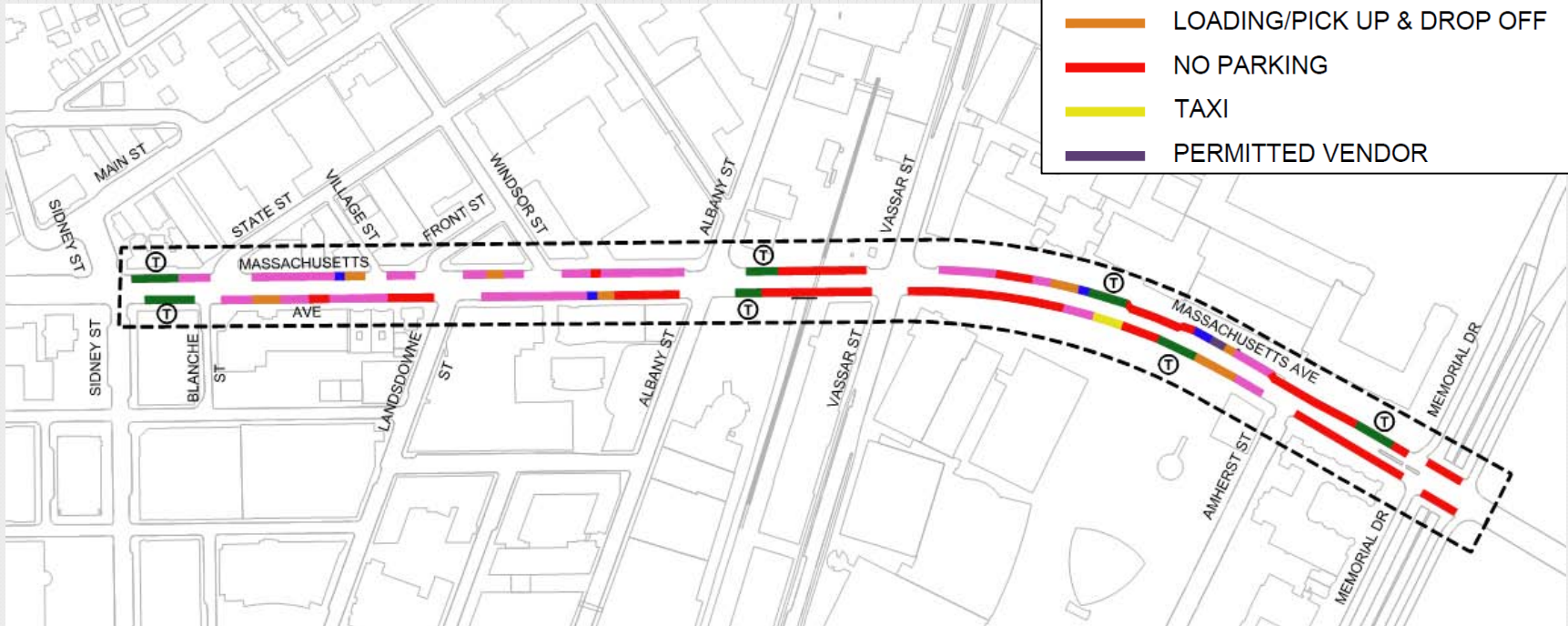
Data Collection



- ✓ Motor Vehicle Parking Study
 - Inventory existing on-street parking
 - Inventory public streets only
 - Conduct occupancy study
- ✓ Bicycle & Pedestrian counts
- ✓ Bus travel time/delay analysis
- ✓ Conduct traffic counts at key intersections

Data Collection

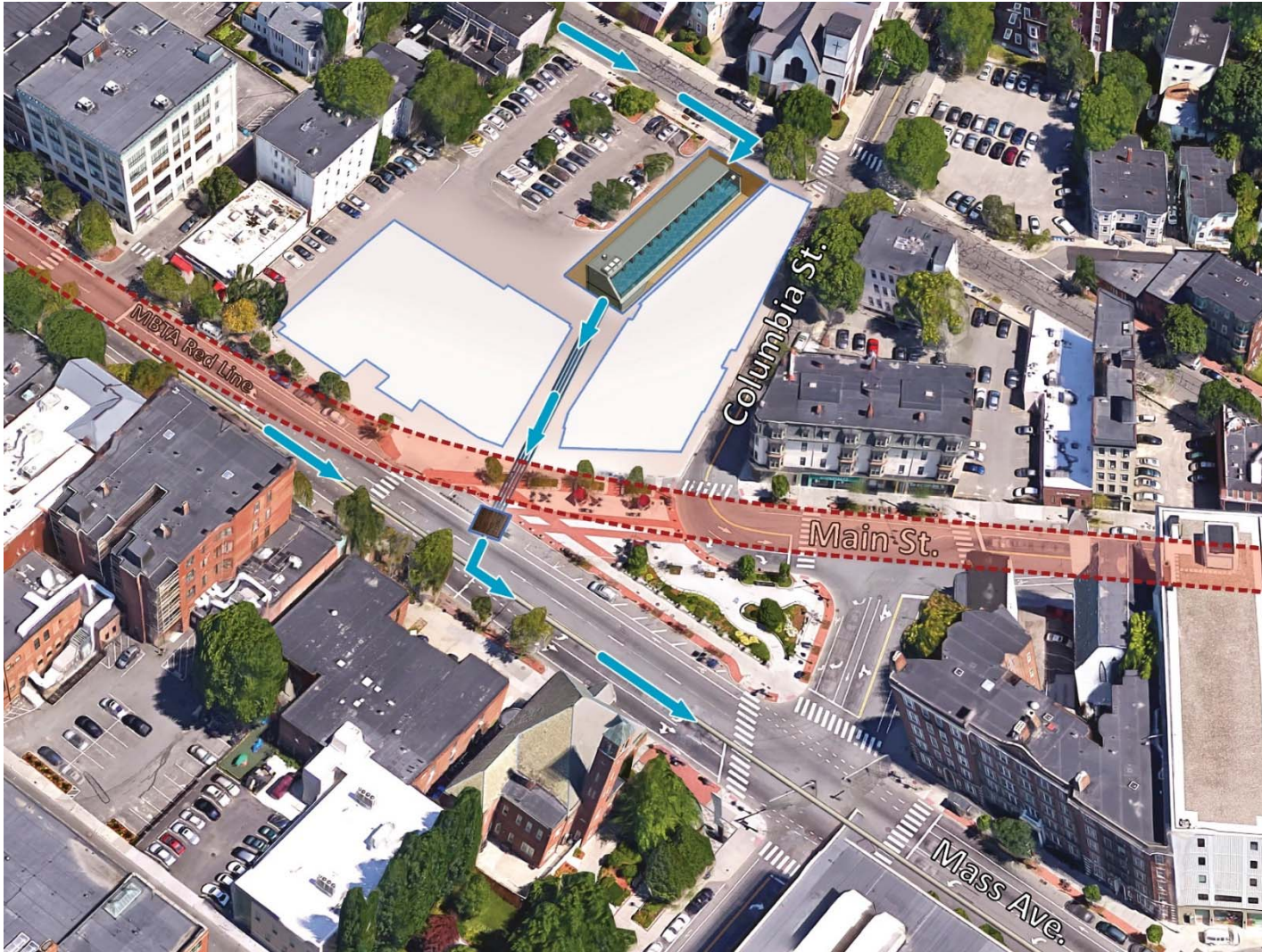
✓ Parking Inventory Study



NEXT STEPS

Adjacent Utility Work

Pipe Jacking Beneath Red Line Tunnel

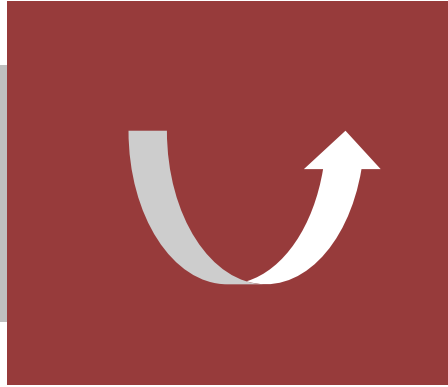


Implementation Steps



PLANNING

- Identify measures of effectiveness
- Develop detailed plan
- Community engagement
- Develop mitigation measures



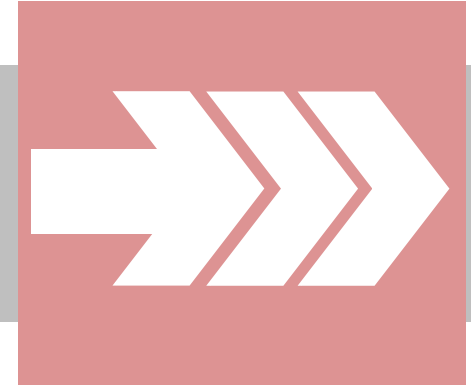
IMPLEMENTATION

- Procure materials
- Issue regulations
- Remove / reinstall pavement markings
- Installation of new elements



OPERATION

- Street cleaning
- Snow clearance
- Enforcement
- Communications strategy

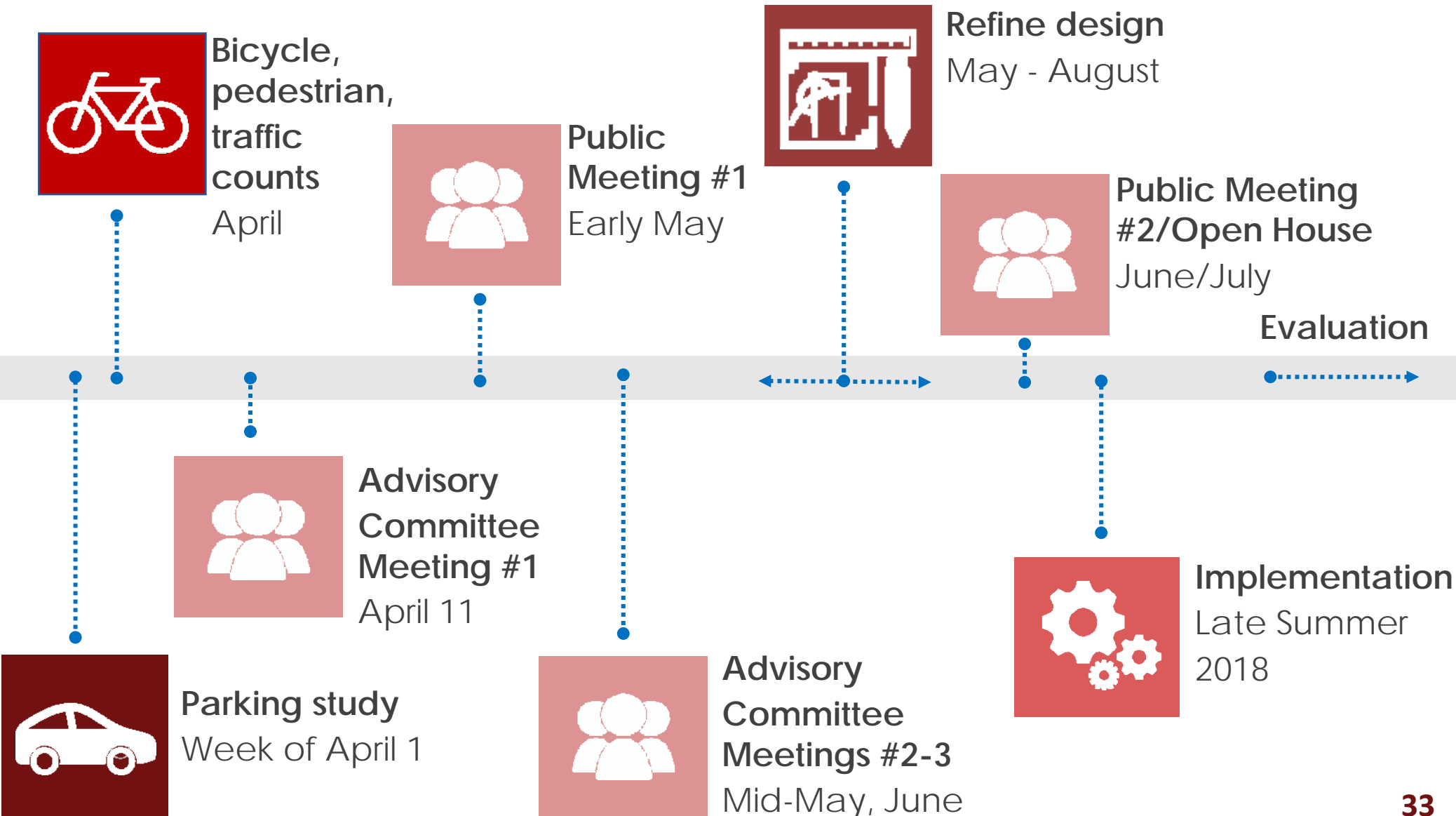


EVALUATION

- After data collection and analysis
- Community engagement
- Decisions on next steps

NEXT STEPS

Schedule



NEXT STEPS

Community Engagement

Feedback from Stakeholders and the Public

- Wikimap: map and web link coming soon
- Up to 3 stakeholder meetings
- 2-3 public workshops
- Additional community engagement
- Post-implementation feedback and evaluation

More Information and Contact

Project Website: **coming soon**

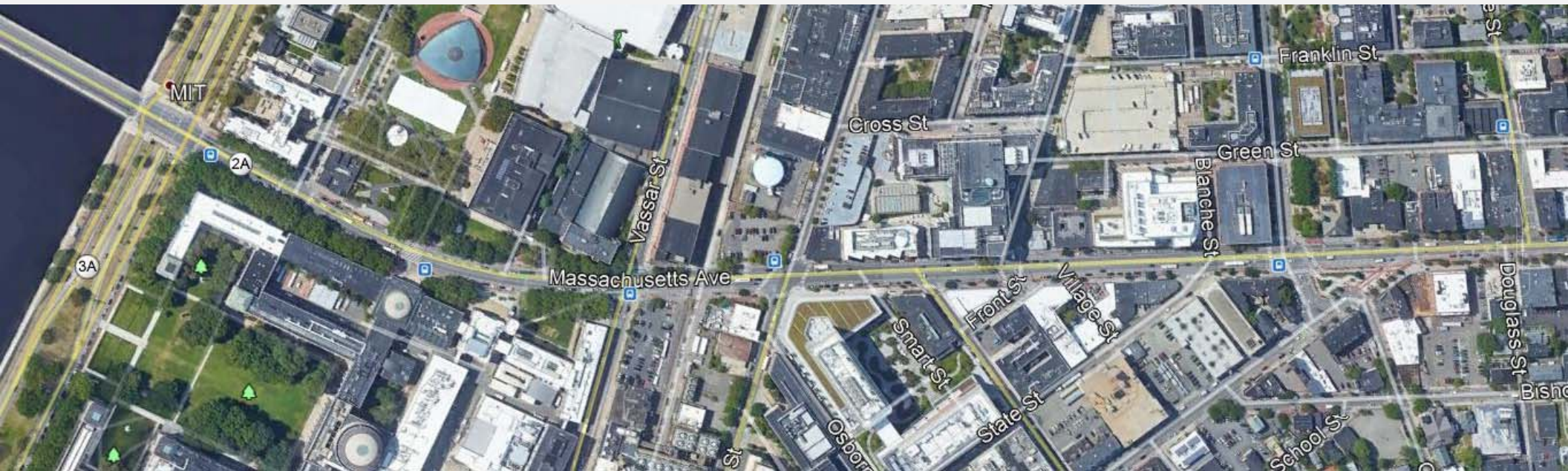
Contact: **Bill Deignan**, Community Development, wdeignan@cambridgema.gov

Chris Balerna, Kleinfelder Project Manager, Community.Cambridge@kleinfelder.com

NEXT STEPS

Breakout Discussion

South Mass. Ave. Corridor



- ✓ 88' wide
- ✓ On-street existing bike lane
- ✓ Parking on both sides
- ✓ Mix of meters and other parking
- ✓ Bus stops and bus pullouts
- ✓ Curb extensions at multiple locations