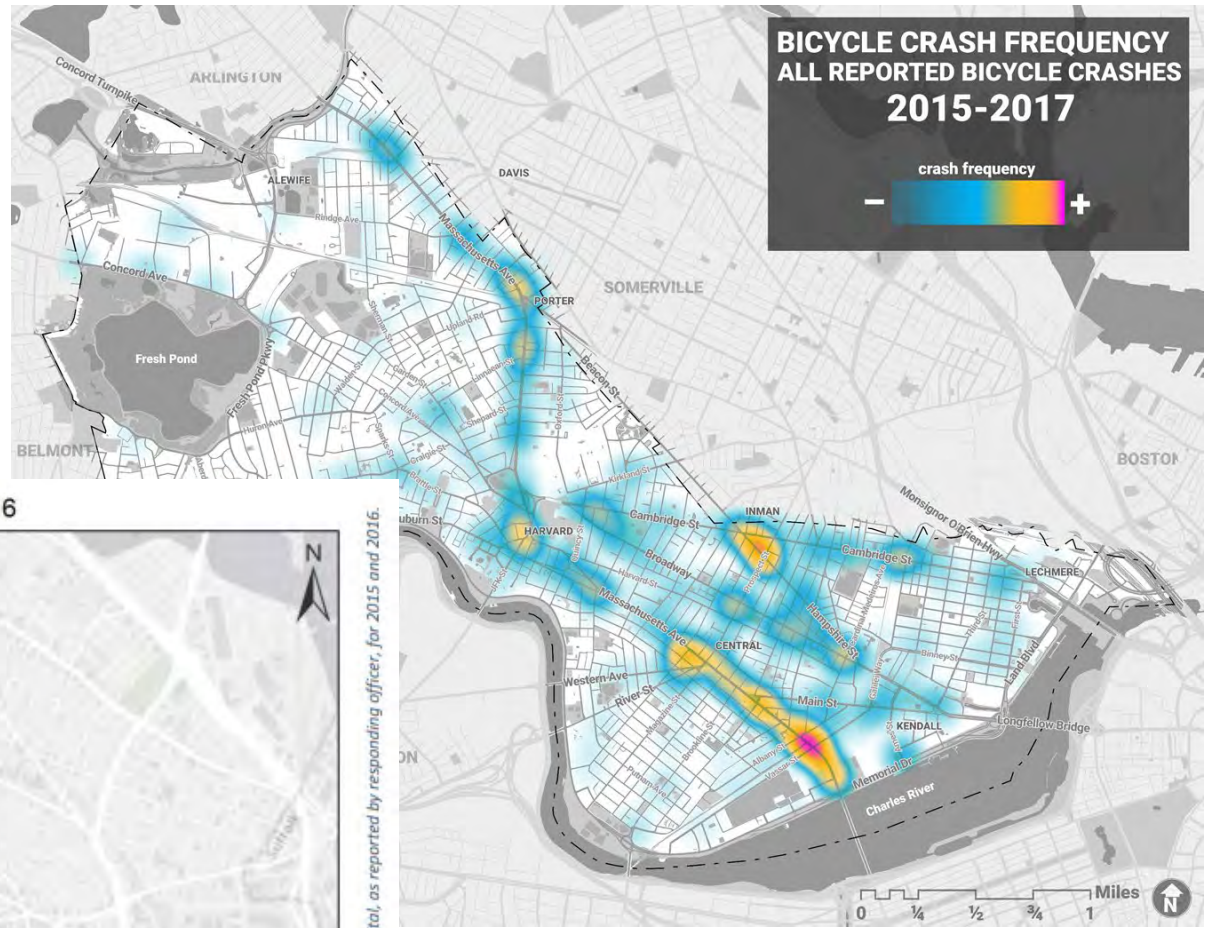
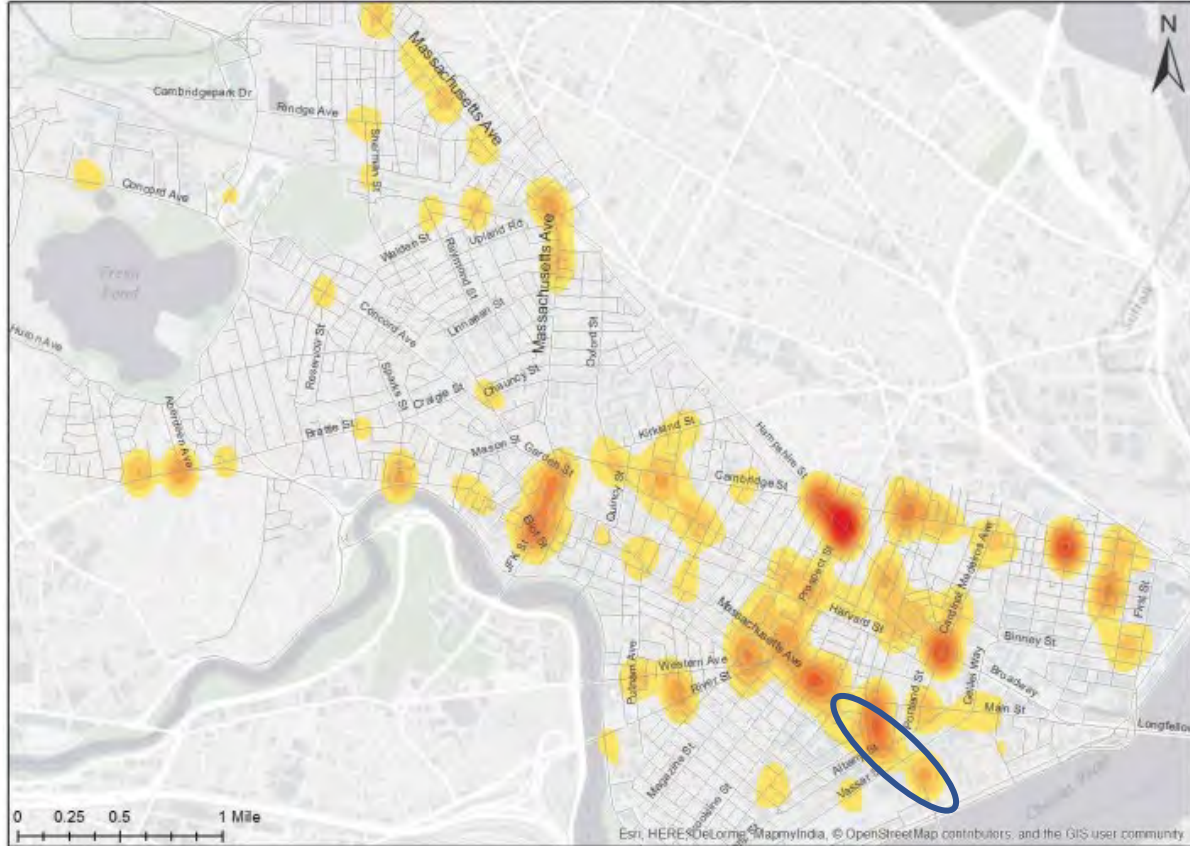


# Corridor Safety History



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 Users

## People Biking – Bicycle Level of Comfort Analysis

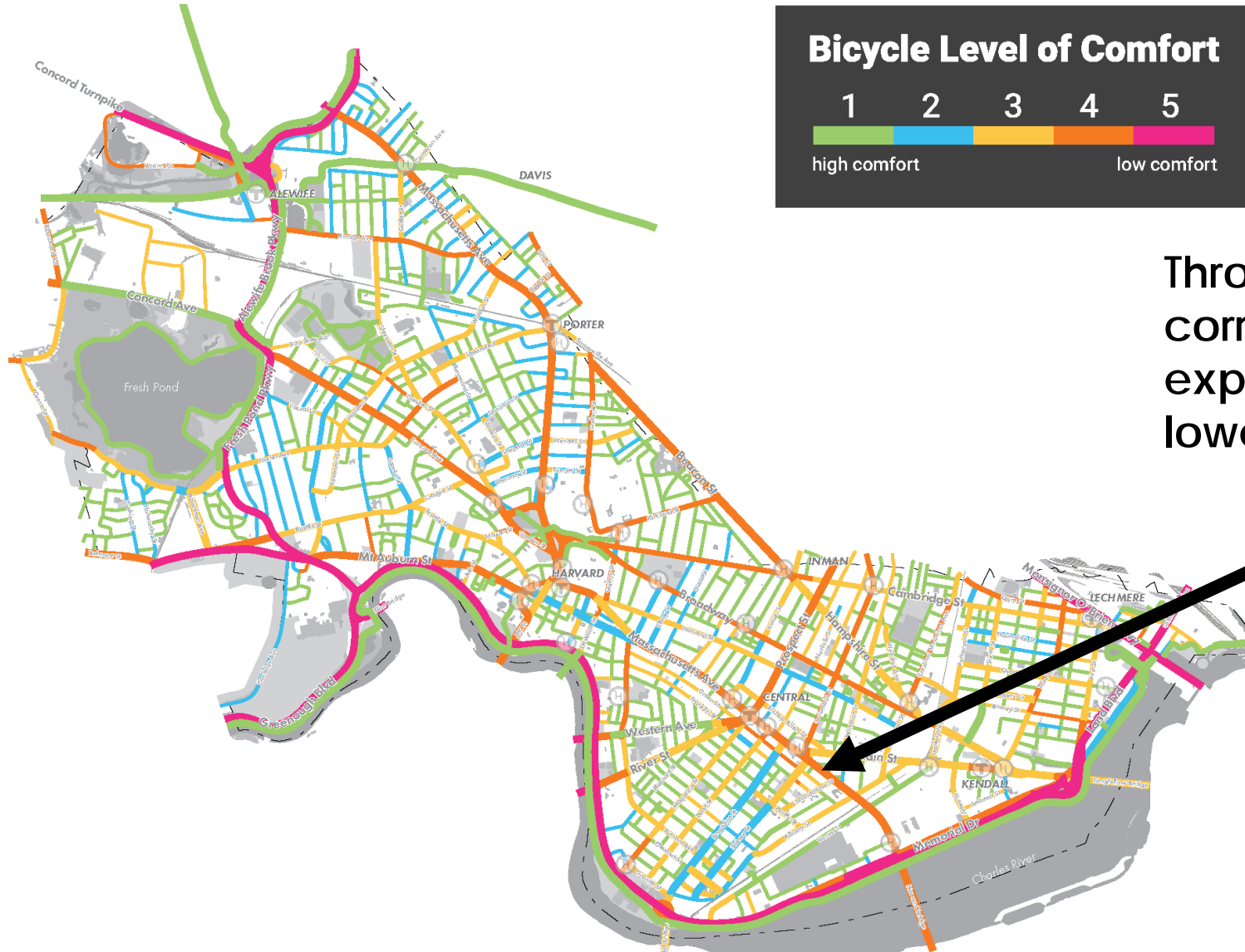
An all-ages and ability network has BLC of 1 or 2



Figure 5.4: Bicycle Level of Comfort Sample User Types

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.

# Transit Service Analysis

## MBTA Bus Route 1\*:

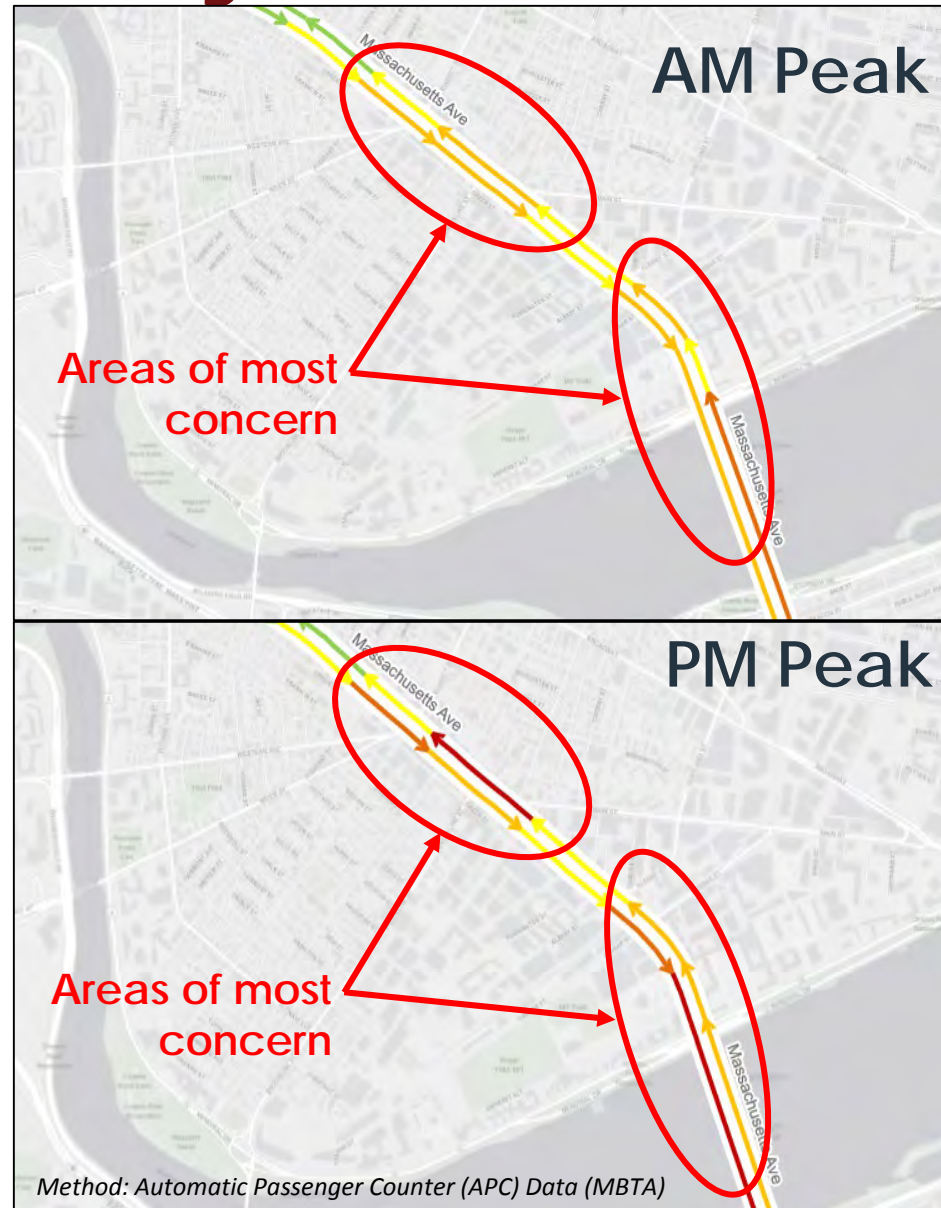
Composite Grade*
Excellent (A)
Good (B)
Satisfactory (C)
Unsatisfactory (D)
Poor (E)
Failing (F)
N/A

\*Route 1 is ranked in top 5 MBTA bus routes for ridership.

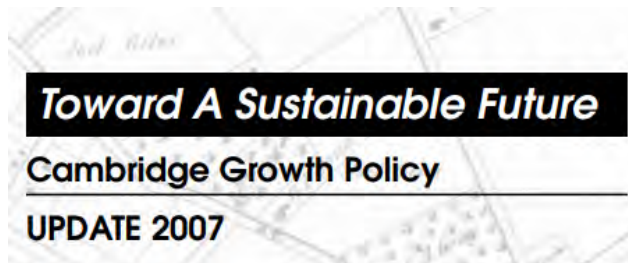
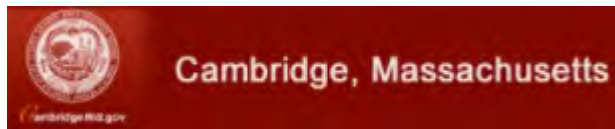
\*Criteria:

Excess vehicle travel time compared to a minimum Passenger time (travel time x riders)

Reliability (how much the travel time varies)



# Municipal Policies



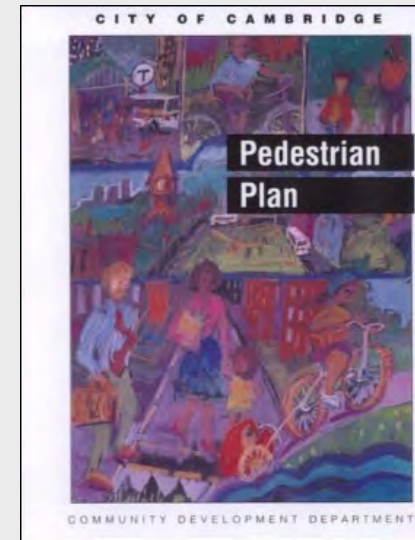
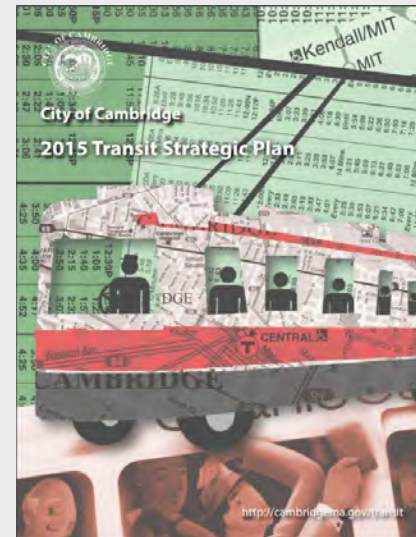
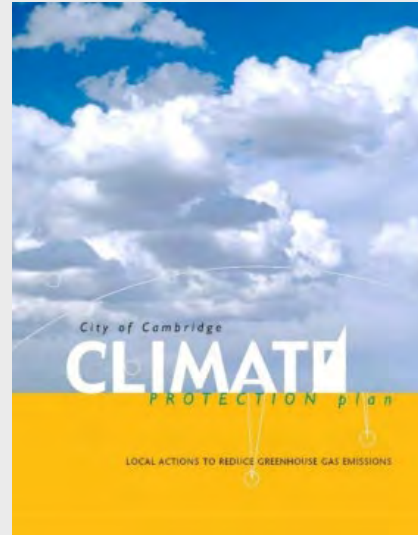
**Vision Zero** calls for the elimination of fatalities and serious injuries resulting from traffic crashes, and emphasizes that they can, and should be prevented (2016).

**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).

# Guiding Plans



# Flexible Implementation

Based on Policies and Plans and direction of City leadership:

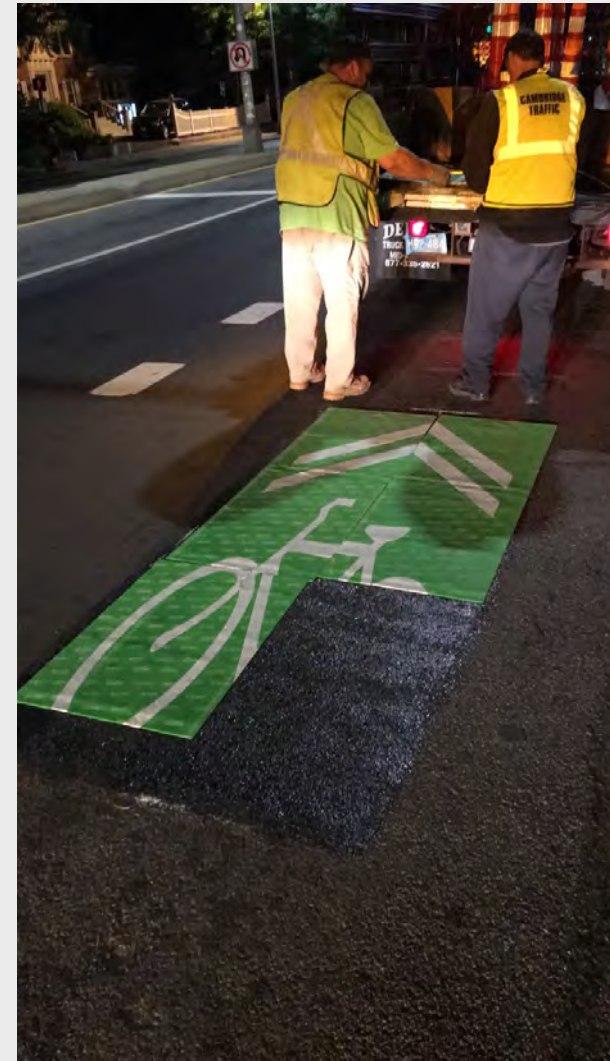
- Evaluate and implement **“quick build” solutions** to enhance the comfort and promote sustainable transportation for people walking, biking, driving and using transit
  - ✓ Designs that are **flexible** after implementation
  - ✓ **Modifications possible** based on evaluation (including feedback)



# Implementation Plan

October 2018

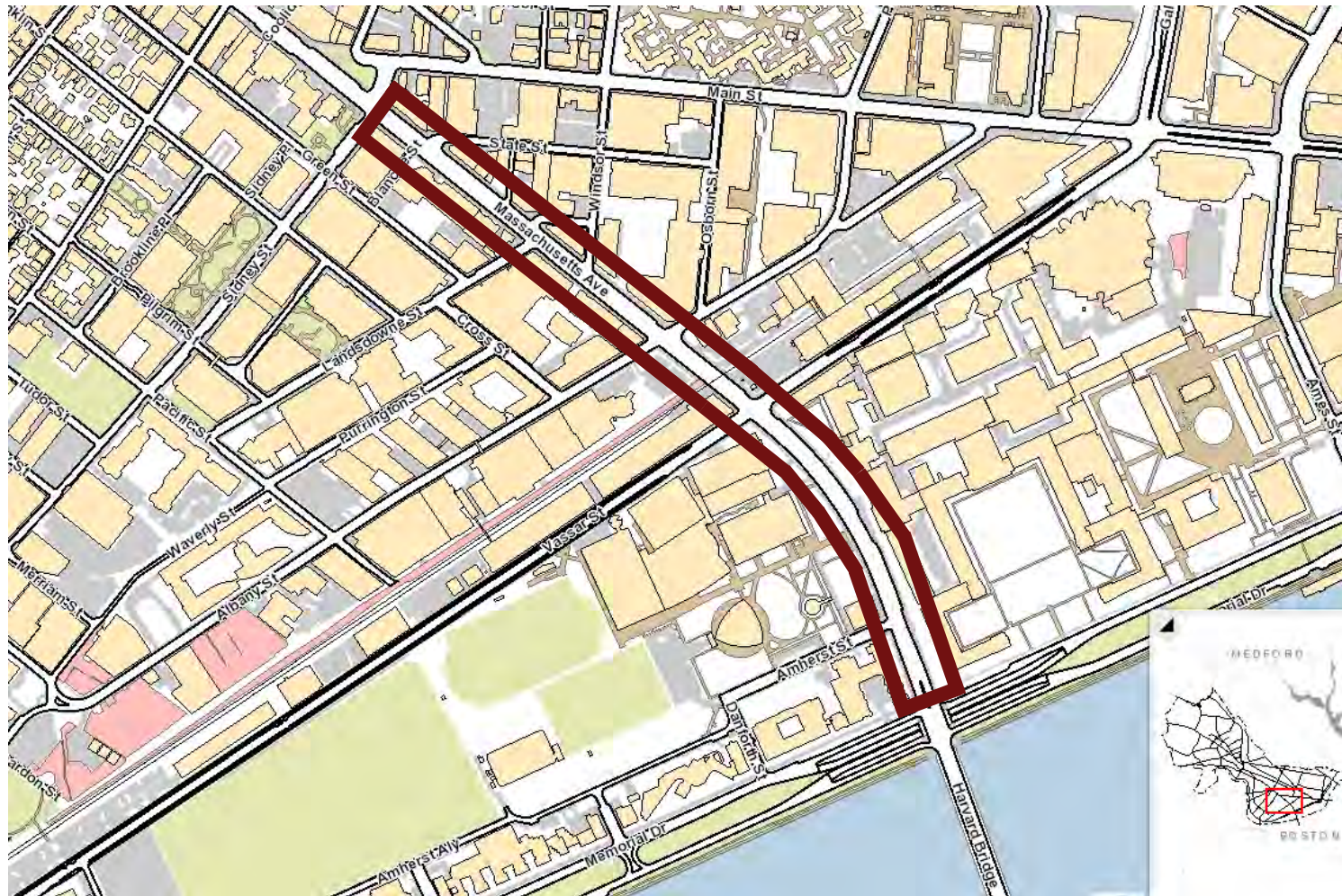
- Week of October 22 – expected start of pavement marking changes (subject to weather and contractor)
- Work will be done at night
- Expected to take a about week for basic configuration. Red bus lane, green markings and flex posts to follow.
- Public information campaign before and during installation including flyering to users and talking to businesses
- Looking at availability and location of variable message boards
- Police will be on site educating and later enforcing new facilities






# Project Limits

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

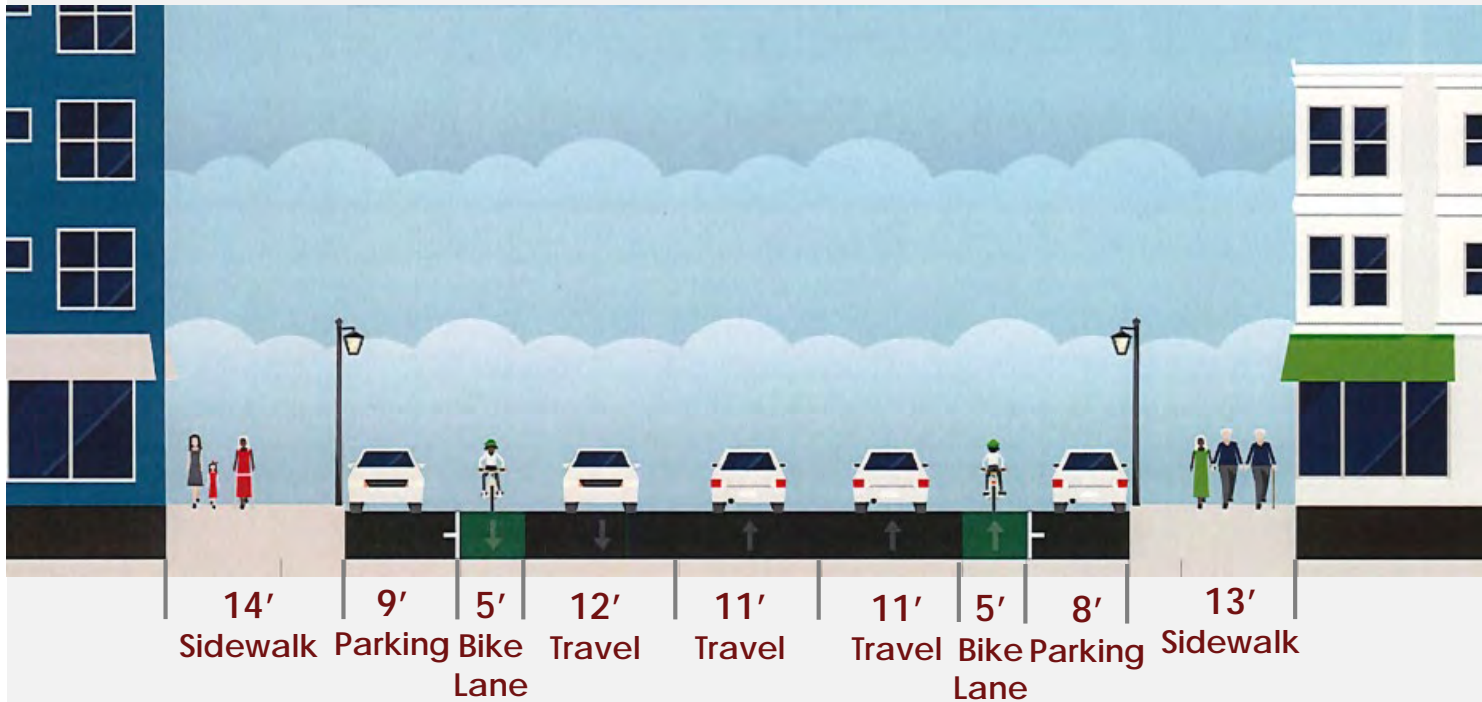
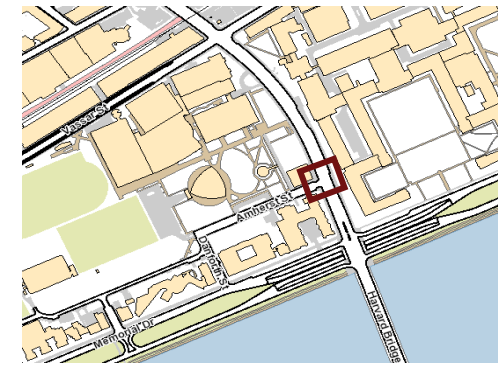


**Legend**

 Project Limits

# Existing Conditions

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



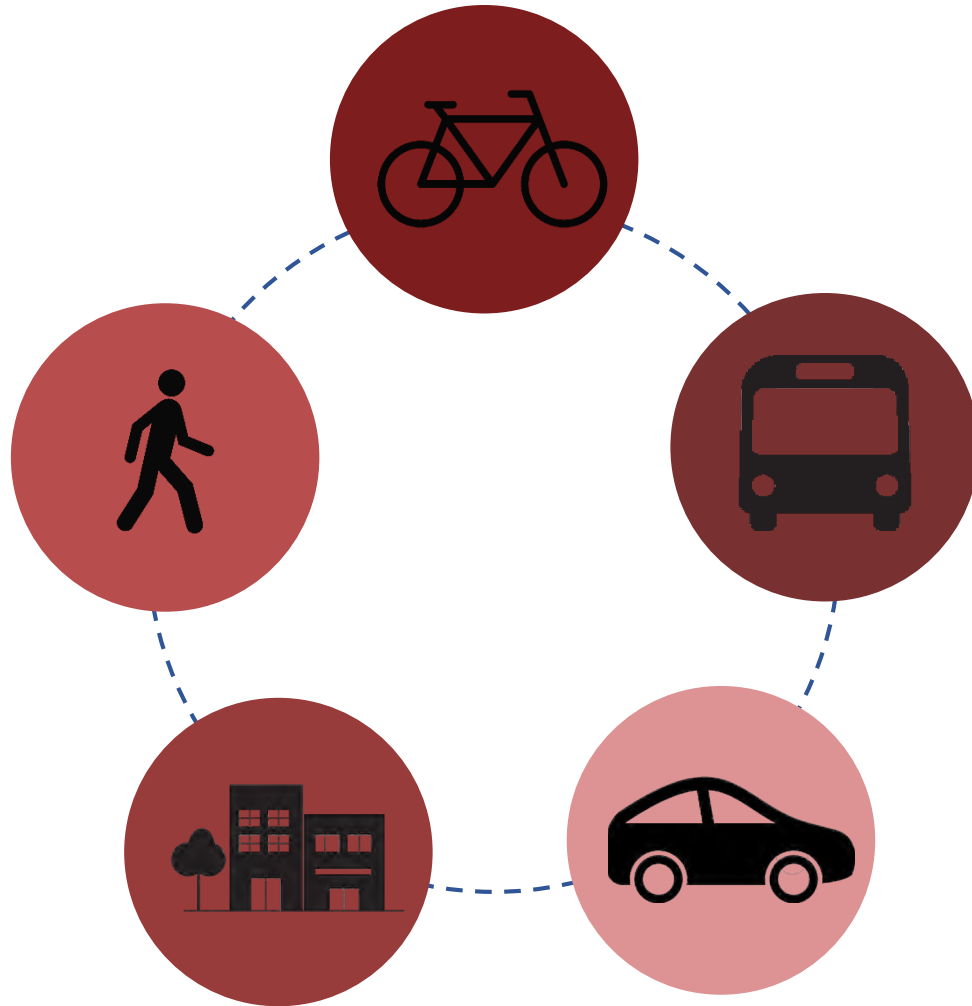
- ✓ 88' wide
- ✓ On-street bike lane
- ✓ On-street vehicle parking
- ✓ Mix of meters and other parking
- ✓ Bus stops
- ✓ Curb extensions at multiple locations

# Project Goals



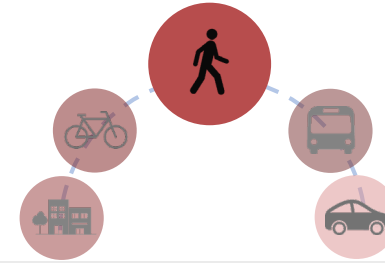
- ✓ Address safety issues and reduce crashes - Vision Zero
- ✓ Reduce transit delays
- ✓ Enable/encourage people of all ages and abilities to choose sustainable transportation

# Design Considerations



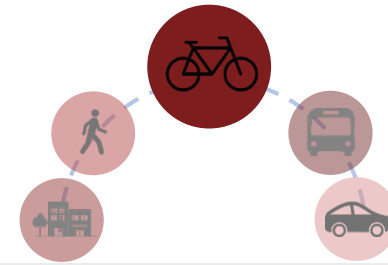
- ✓ Bicyclist safety & comfort
- ✓ Pedestrian safety & comfort
- ✓ MBTA Bus stops
- ✓ MBTA Bus reliability
- ✓ Tour Bus pick-up/drop-off
- ✓ Accessible parking
- ✓ Loading & deliveries
- ✓ Street maintenance
- ✓ On-street parking

# Design Benefits



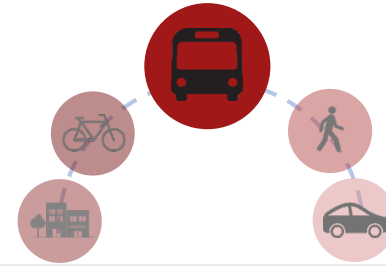
- ✓ Pedestrian safety improved through modifications to signalized intersections
  - ✓ Turn Lanes
  - ✓ Unconflicted crossings
- ✓ Additional Crosswalk in corridor
- ✓ RRFB Indicator Added

# Design Benefits



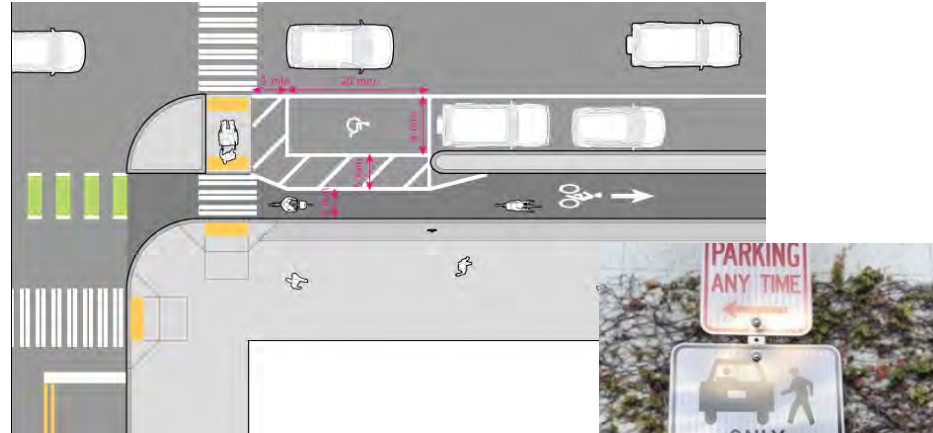
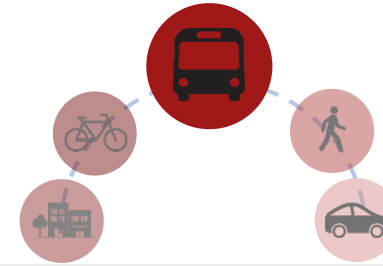
- ✓ Bicyclist safety improved
  - ✓ Separated lanes
  - ✓ Separated turning movements
  - ✓ Bicycle Signals
- ✓ Level of comfort increased
  - ✓ Supports all ages and abilities
  - goal

# Design Benefits



- ✓ Bus priority lane in key stretches
- ✓ Serves all bus transit, including shuttle services

# Design Benefits



- ✓ Accessible parking spaces improved
- ✓ On-street parking maintained in retail sections
- ✓ Food truck location maintained
- ✓ Additional and clear loading zones
- ✓ Create drop-off/pick-up locations
- ✓ Create new tour bus location



# ➡ Data Collection



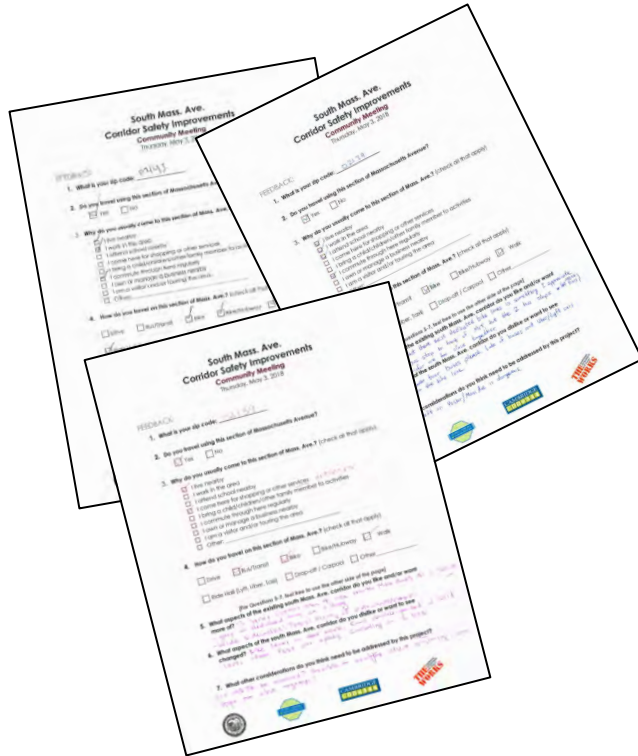
- ✓ Motor Vehicle Parking Study
  - Inventory existing on-street parking
  - Inventory public streets only
  - Conduct occupancy study
- ✓ Bicycle & Pedestrian counts
- ✓ Bus travel time/delay analysis
- ✓ Conduct traffic counts at key intersections

# Public Process



- ✓ Advisory Committee
- ✓ Wikimap online
- ✓ Survey online and at public meetings
- ✓ Outreach to Businesses
  - ✓ Direct meetings with local businesses
  - ✓ Coordination with CSBA
- ✓ Individual Stakeholder meetings
- ✓ Meetings with Seniors
- ✓ Public "Tabling" at multiple events
- ✓ Transit/Ped/Bike Committees
- ✓ Communitywide Meetings
- ✓ Posted and electronic announcements

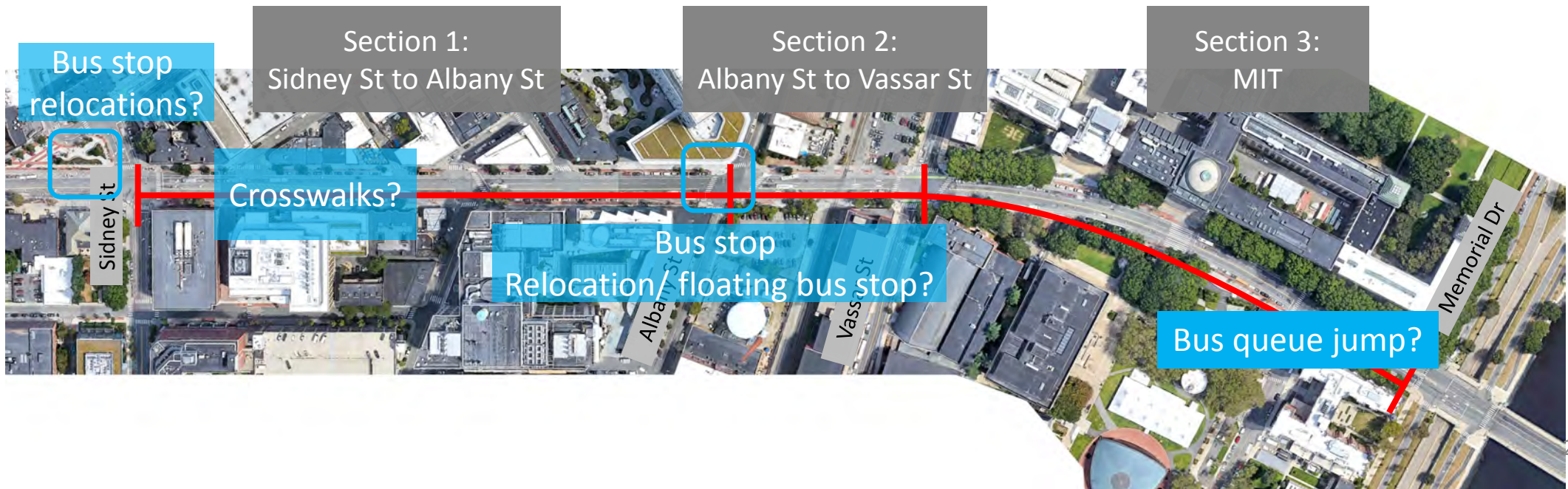
# Public Feedback



- ✓ Need for safer conditions for bicyclists
  - ✓ Motorists and delivery vehicles block bike lanes
  - ✓ Desire for greater separation from moving vehicles
- ✓ Need for additional crosswalks traversing Mass Ave
- ✓ Desire to improve transit operations
- ✓ Concerns about unpredictable ridesharing, tour bus, food truck, commercial loading & pick-up/drop-off activity
- ✓ Relocate MIT-related tour buses loading/unloading
- ✓ Concerns about long vehicle queues, traffic at Vassar Street
- ✓ Minimize conflicts,
  - ✓ bus/bike conflicts and
  - ✓ bike/ped conflicts at 77 Mass Ave.
- ✓

# Possible Future Additions To Be Evaluated

- ? Further reconfiguration between Albany and Vassar streets
- ? Work with state DCR and MassDOT on changes at Memorial Dr. and bridge
- ? Additional crosswalk/RRFB in Section 1
- ? Move bus stops to the far side of intersections (for better operations)
- ? Construct modular (or permanent) floating bus stops
- ? Remove/modify curb extensions to allow better bicyclist protection





# Project Evaluation Questions & Data Collection

- User Feedback
  - On-line survey; hard copies available
  - Wikimap
  - Intercept surveys
- Technical Data
  - Counts: motor vehicles, pedestrian, cyclists
  - Speeds
  - Travel times along corridor
    - Transit vehicles
    - Motor vehicles
- Safety Data
  - Crash analysis (requires 3 years for statistical validity, but will monitor for issues and trends)

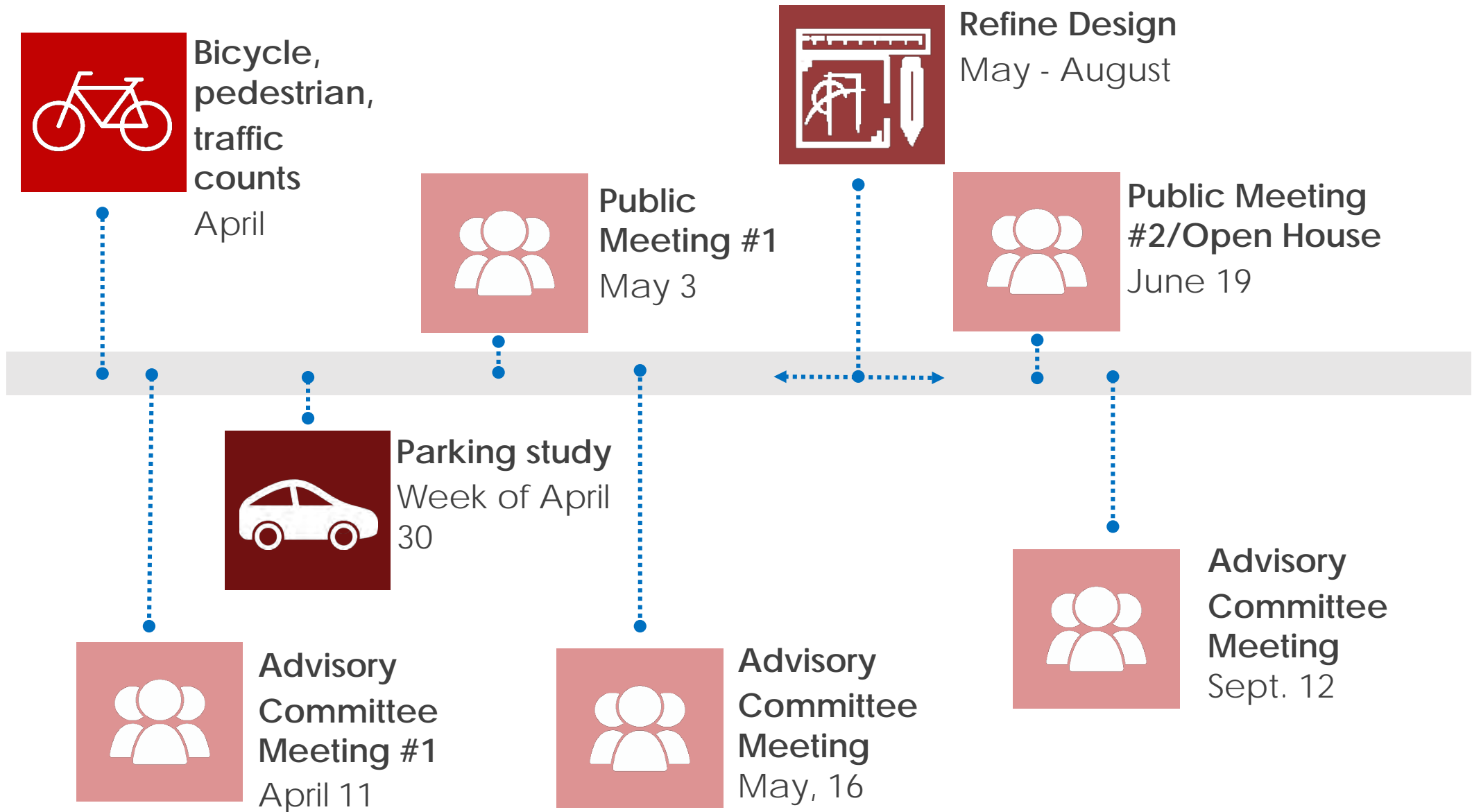


# Project Evaluation Questions & Data Collection

- Signal intersections
  - Vehicle queues
  - LOS for Pedestrians
  - Conflicts
- New Pedestrian Crossing
  - Counts: number of users
  - Yield study (based on standard protocols)
- Parking/Loading/Ride Hail
  - Parking study
  - Delivery vehicles
  - Observations: where are ride hail vehicles stopping?

NEXT STEPS

# Schedule - 2018

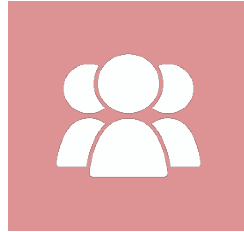


NEXT STEPS

# Schedule - 2018



Refine Design  
September



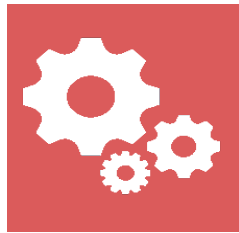
Public Open House  
September 27th



Evaluation



Additional Traffic Counts  
September



Implementation  
2<sup>nd</sup> half Oct 2018