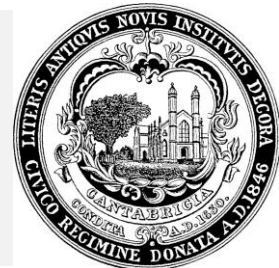


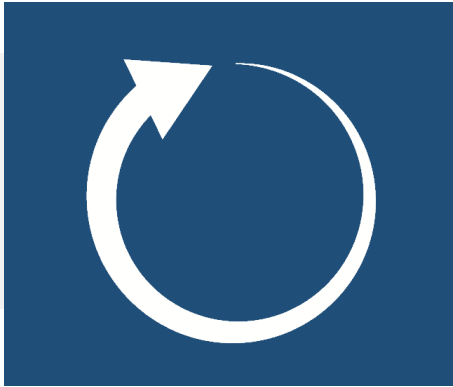
INMAN SQUARE INTERSECTION IMPROVEMENTS PROJECT



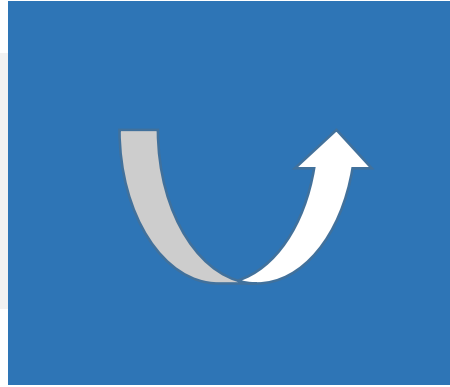
Presentation to Community | January 24, 2017



Agenda



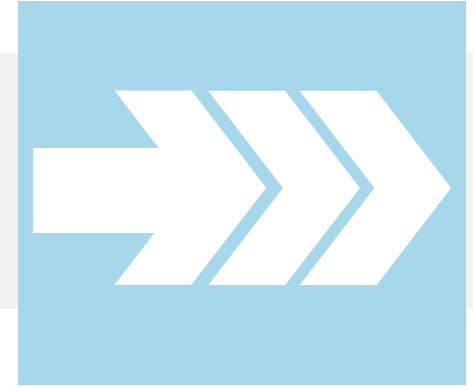
**Project
Background**



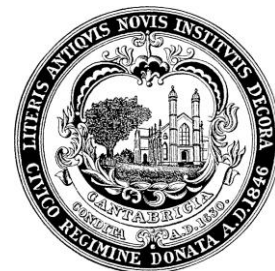
Project Goals



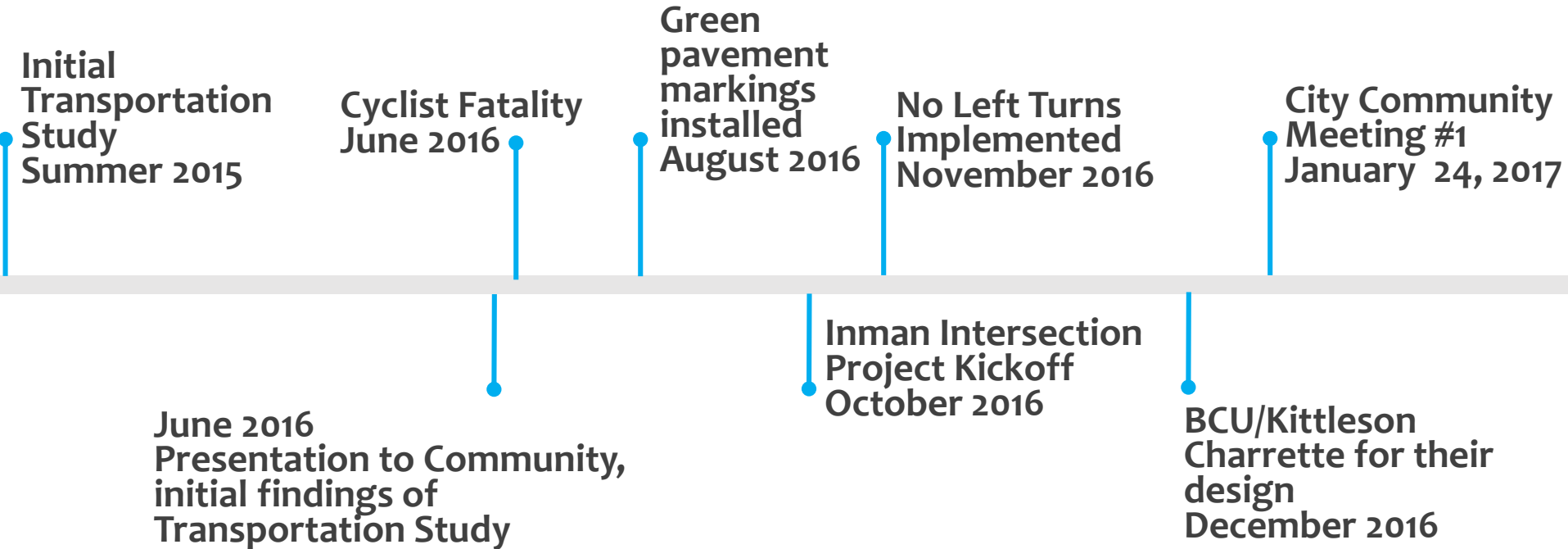
Design Options



**Next Steps &
Workshop**



History Timeline

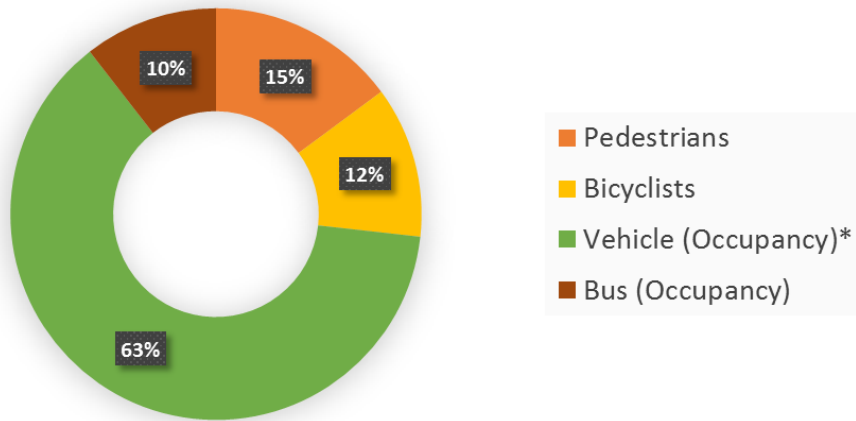


Initial Transportation Study

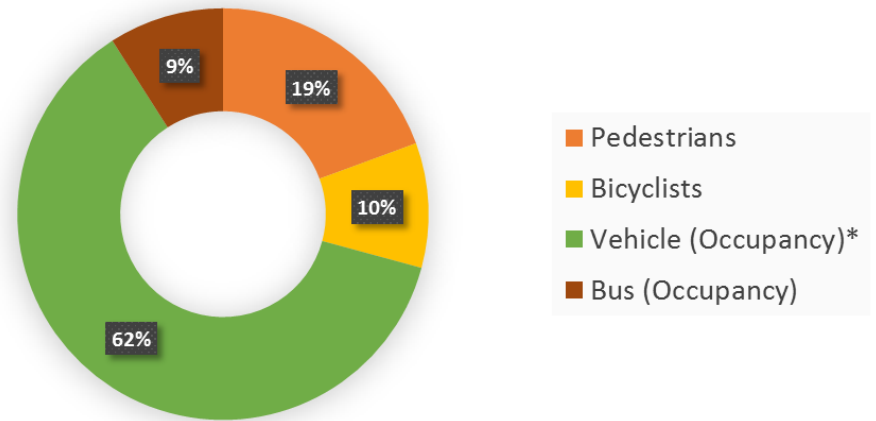
- Complaints of high delay for all modes of transportation
 - Long wait for pedestrians
 - High Volumes of Bicyclists
- Existing Operational Deficiencies
 - Layout of Crosswalks irregular
 - Large intersection for bicyclists and vehicles
- Review of Crash Data 2008-2012
 - 69 total crashes in 5 years (exceeds MassDOT avg Statewide crash rate)
 - Most frequent type of crash type – angle crash
 - 15 bicycle involved crashes, 5 pedestrian involved crashes

User Volumes

Inman Square- Weekday AM



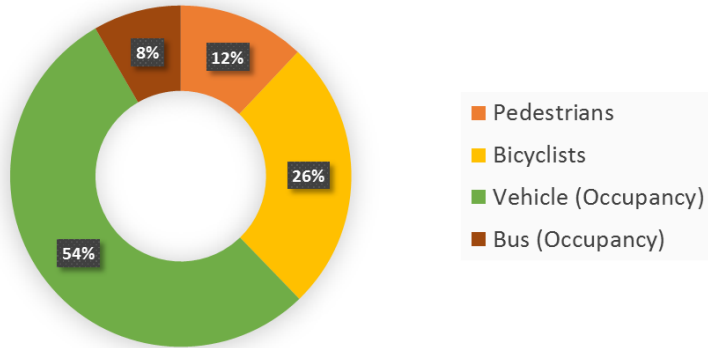
Inman Square- Weekday PM



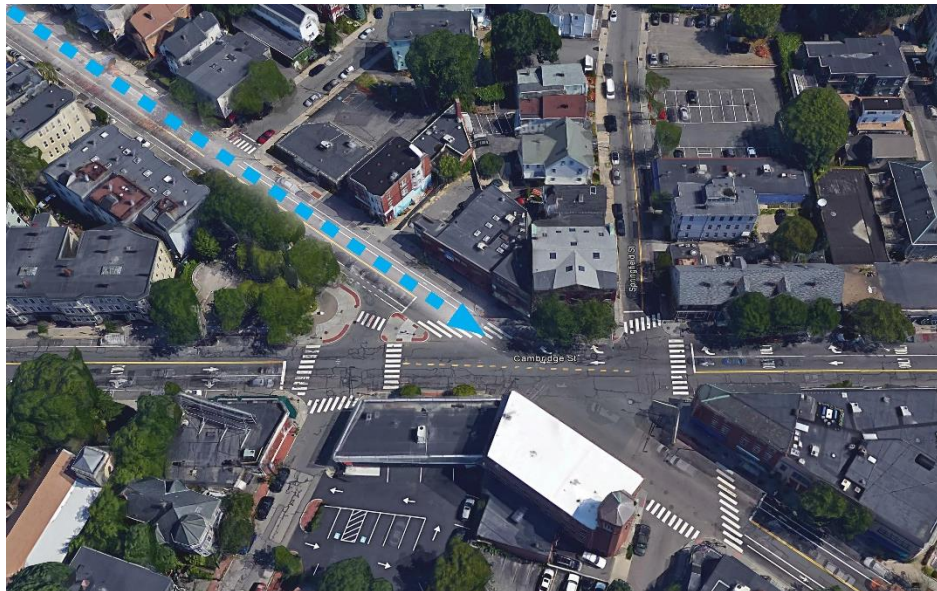
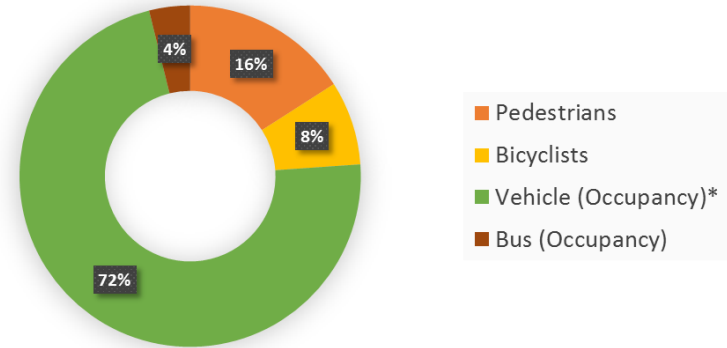
User Volumes

Hampshire Street

Hampshire SB Approach - Weekday AM



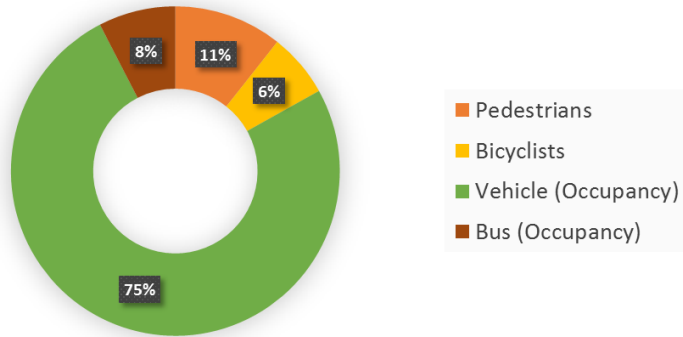
Hampshire SB Approach - Weekday PM



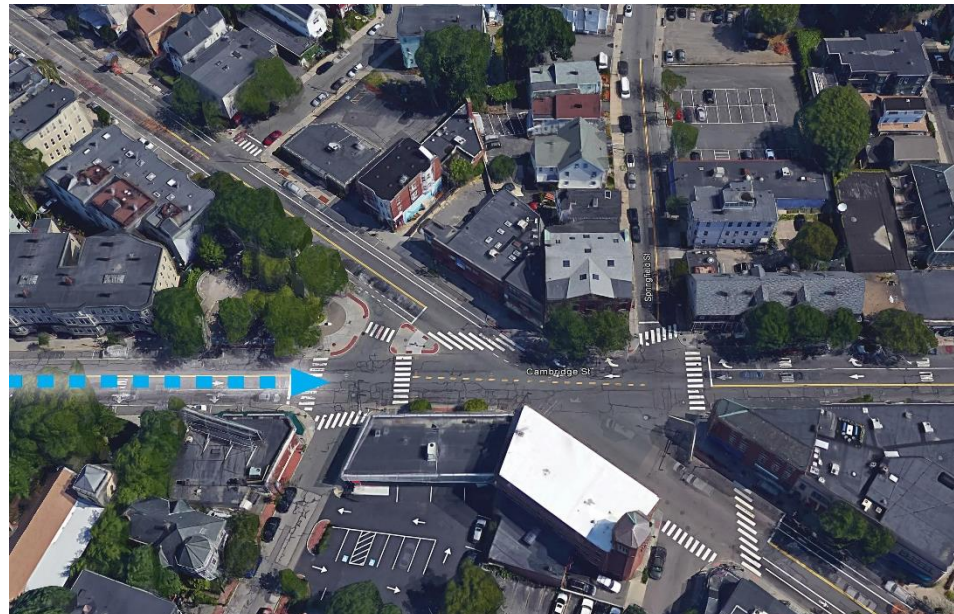
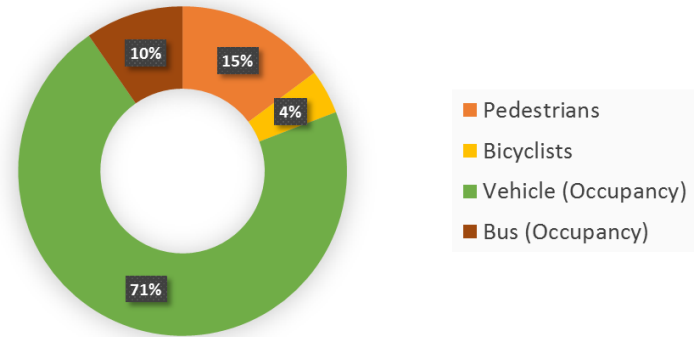
User Volumes

Cambridge Street

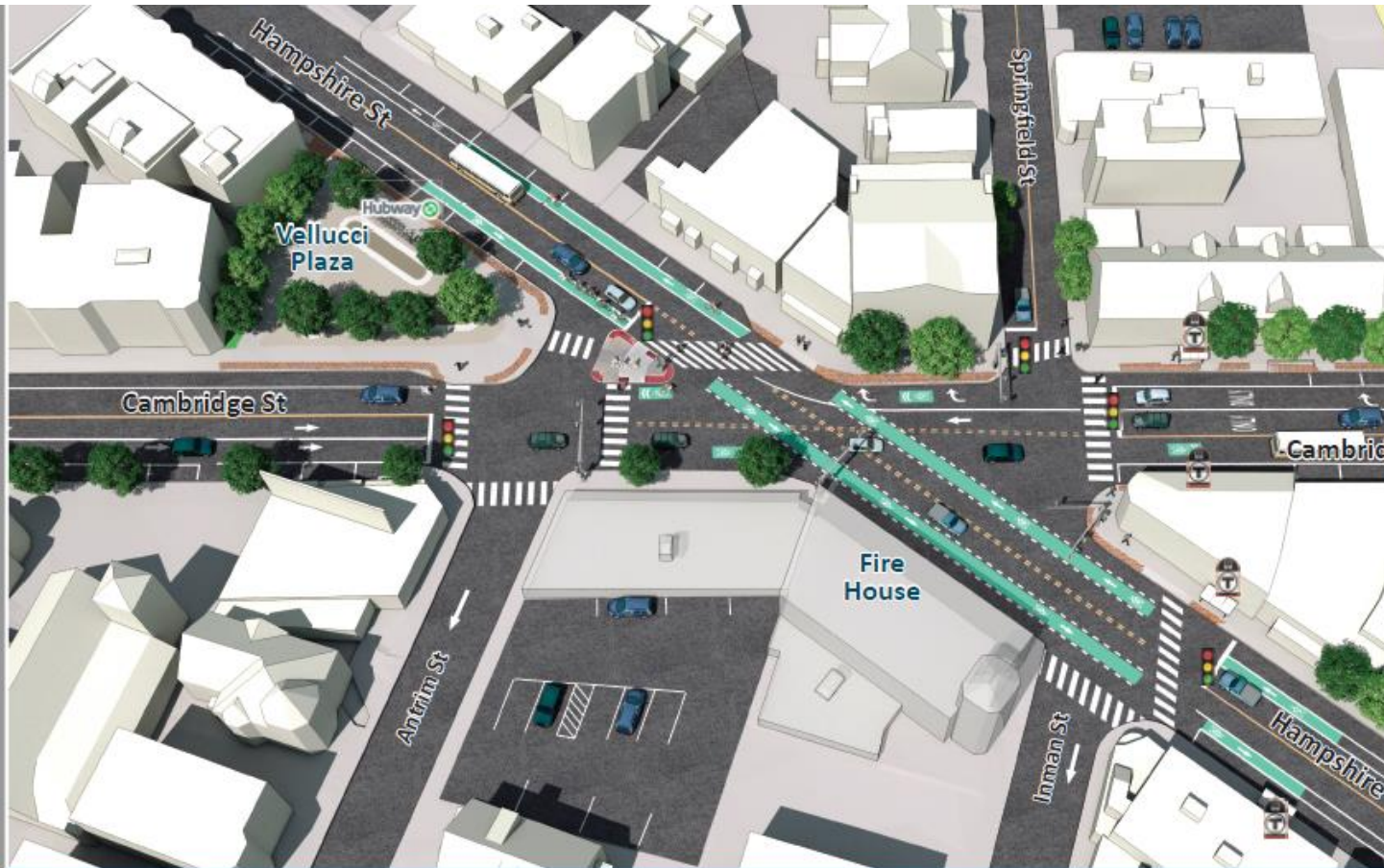
Cambridge EB Approach - Weekday AM



Cambridge EB Approach - Weekday PM



Existing Conditions

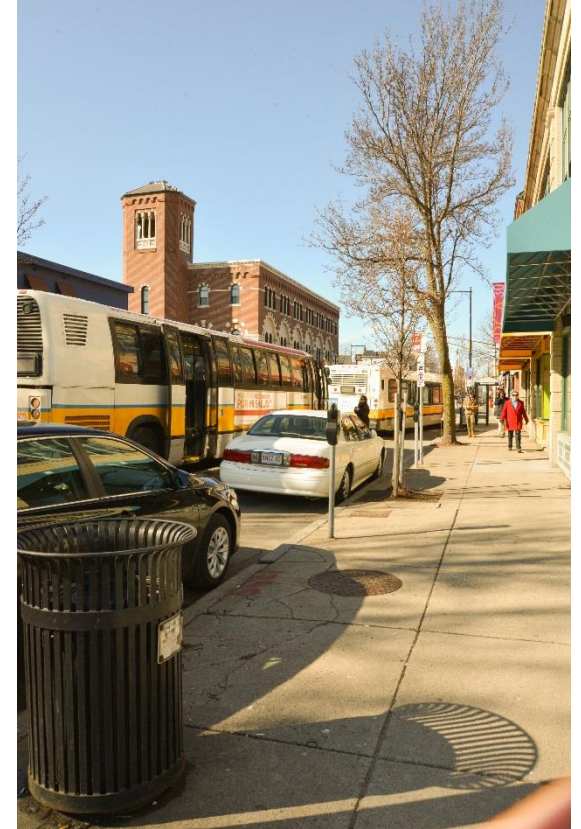


Inman Square Existing Intersection

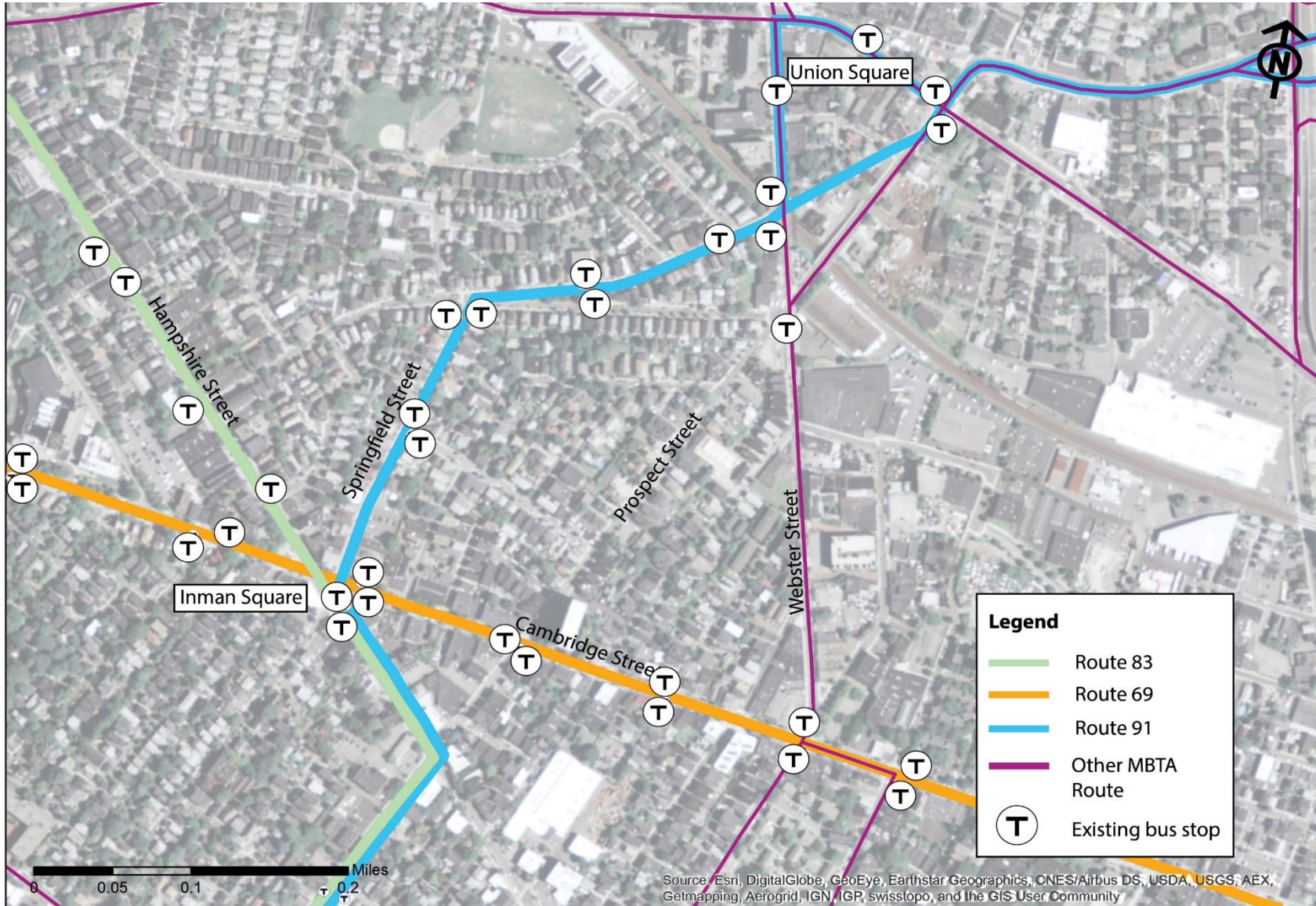
City of Cambridge
January 2017

1. Crosswalks outside of desire lines and some not signal controlled
2. Existing geometry issues create long distance for pedestrians and bikes to travel
3. No signal control for Hampshire Street Southbound turn to Antrim Street
4. Issues with clearance time for all users
5. Unclear lane control on Cambridge Street

Existing Conditions



Existing Conditions Transit



Desired Outcomes



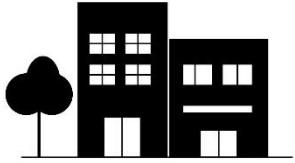
- Reduce exposure through more compact intersection design
- Minimize conflicts with turning vehicles
- Provide separation

- Provide improved sidewalks
- Provide improved signalized crossings
- Reduce length of crosswalks

- Reduce unnecessary vehicular delay
- Provide clear guidance and lane controls
- Increase efficiency through more compact intersection design

- Reduce unnecessary bus/transit delay
- Improve location of and access to MBTA bus stops

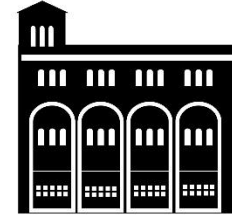
Desired Outcomes (continued)



- Provide pedestrian plaza opportunities adjacent to businesses if feasible



- Maintain truck access through intersection



- Maintain signalized intersection for firehouse access

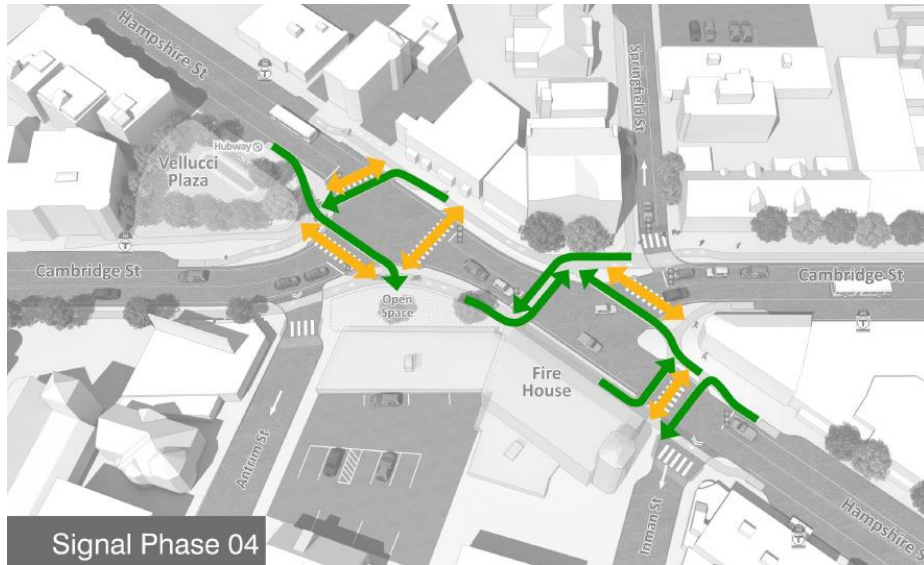
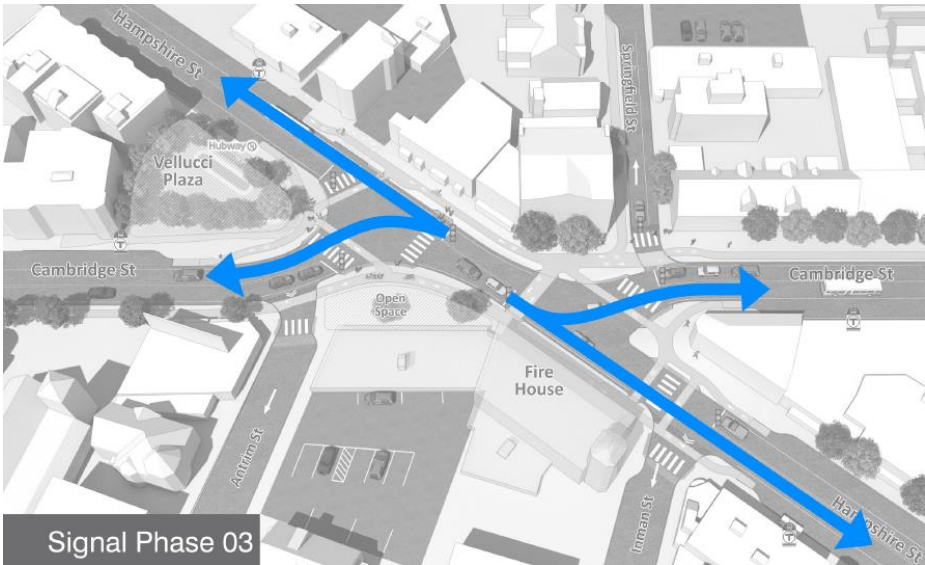
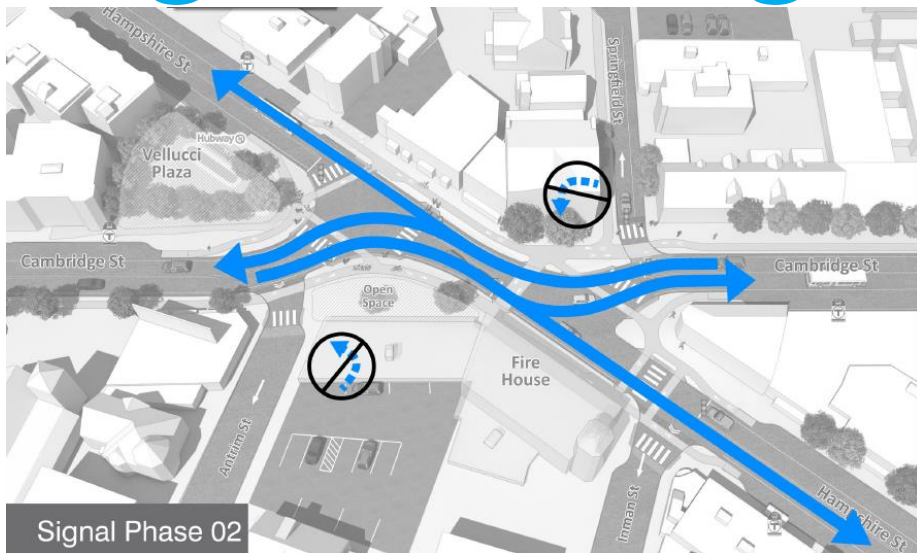
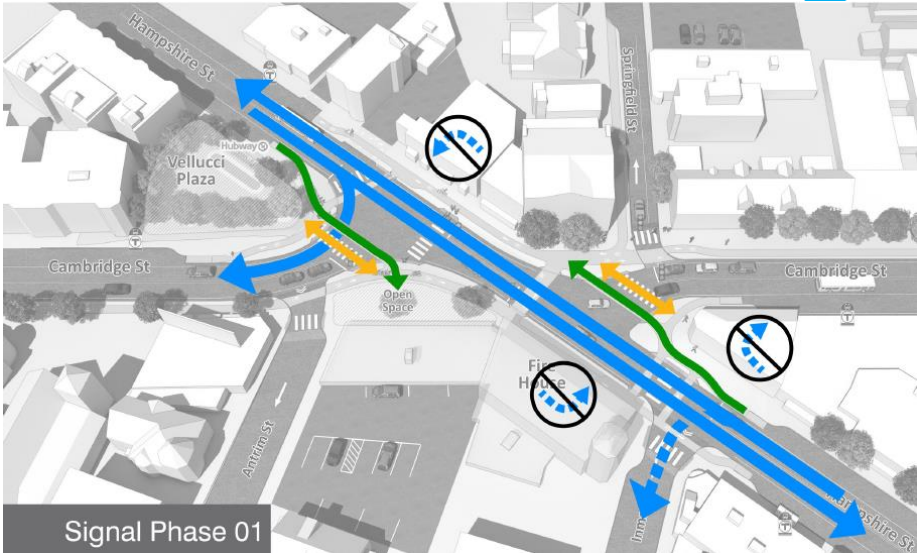


Inman Square - Bend Cambridge

City of Cambridge
January 2017



Bend Cambridge – Signal Phasing

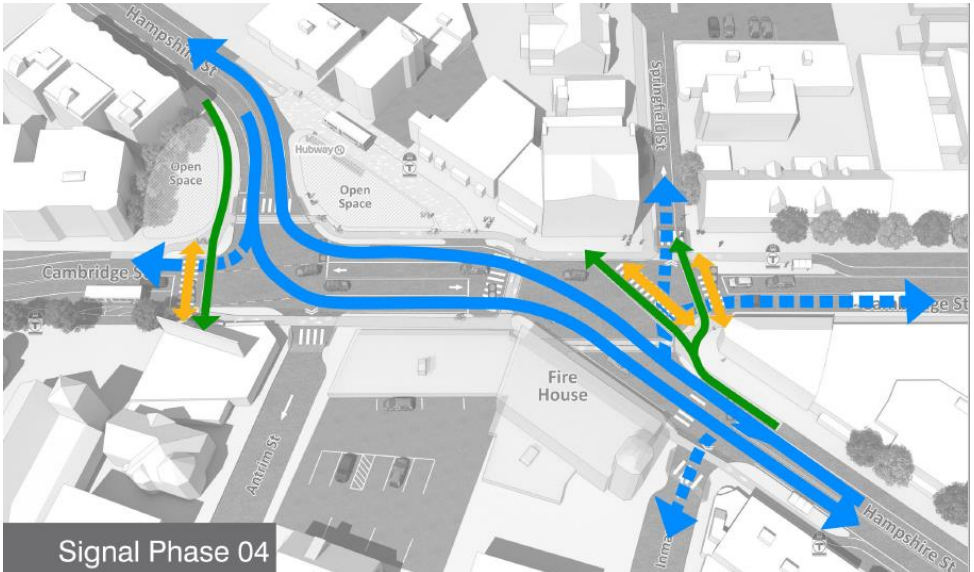
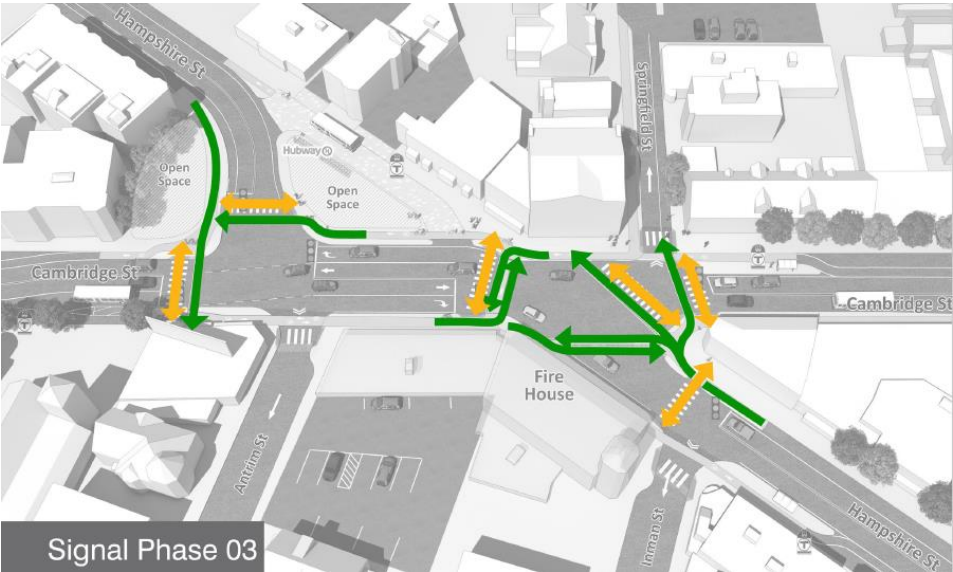
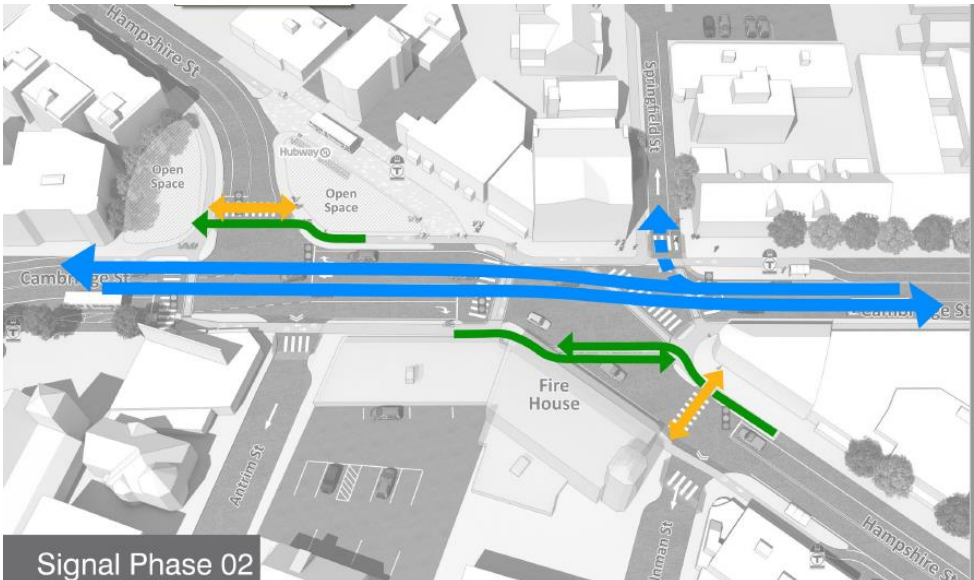
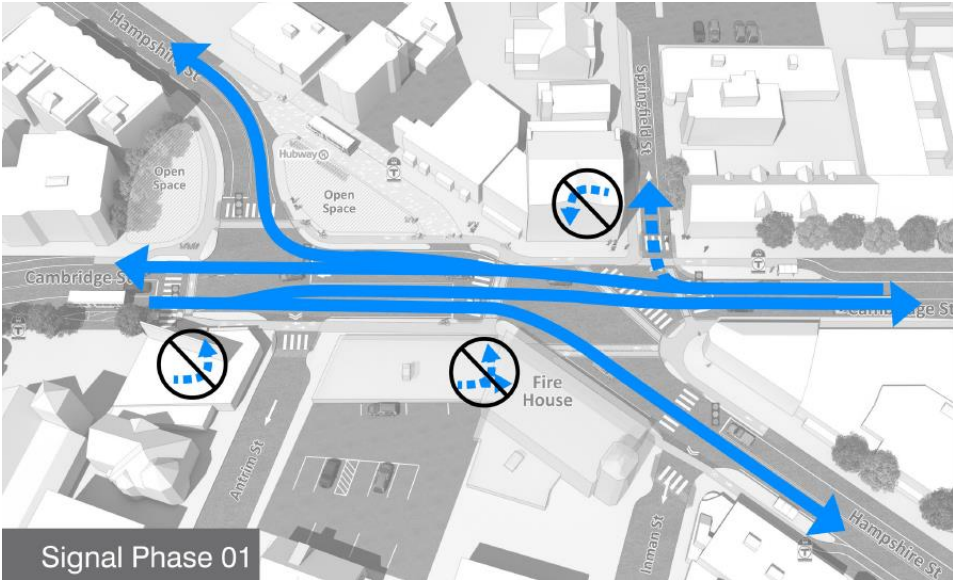




Inman Square - Bend Hampshire



Bend Hampshire – Signal Phasing



Bend Hampshire

Shared Streets Design Opportunity

- Textured or pervious pavements flush with the curb
- Accessible to trucks – increased pedestrian space while allowing for loading/unloading
- Accessible to buses and provides safe bus stop environment
- Street furniture (bollards, benches, planters, street lights, sculptures, tress, bike share).



NOTE: This Opportunity also applies to Bend Northside (Next Option)

DESIGN OPTIONS

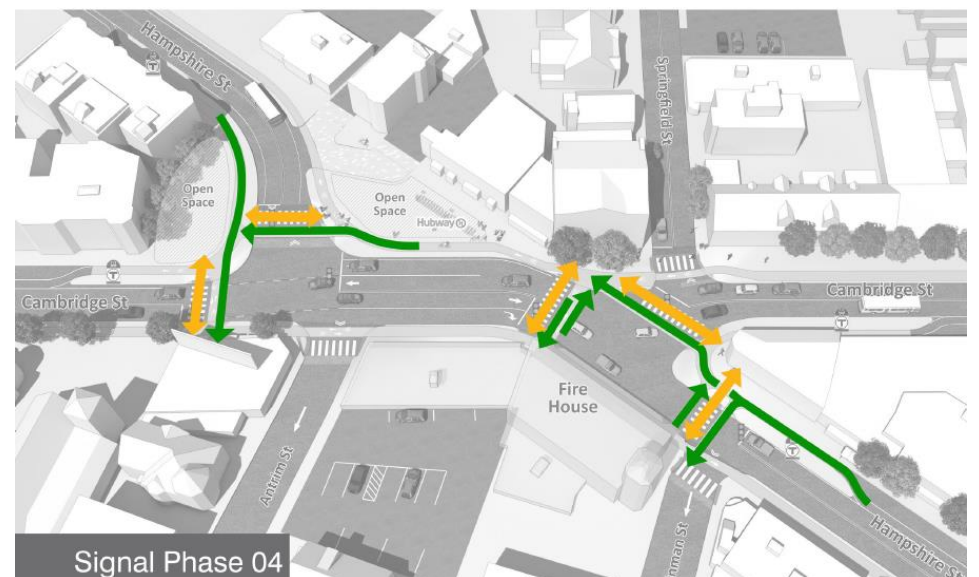
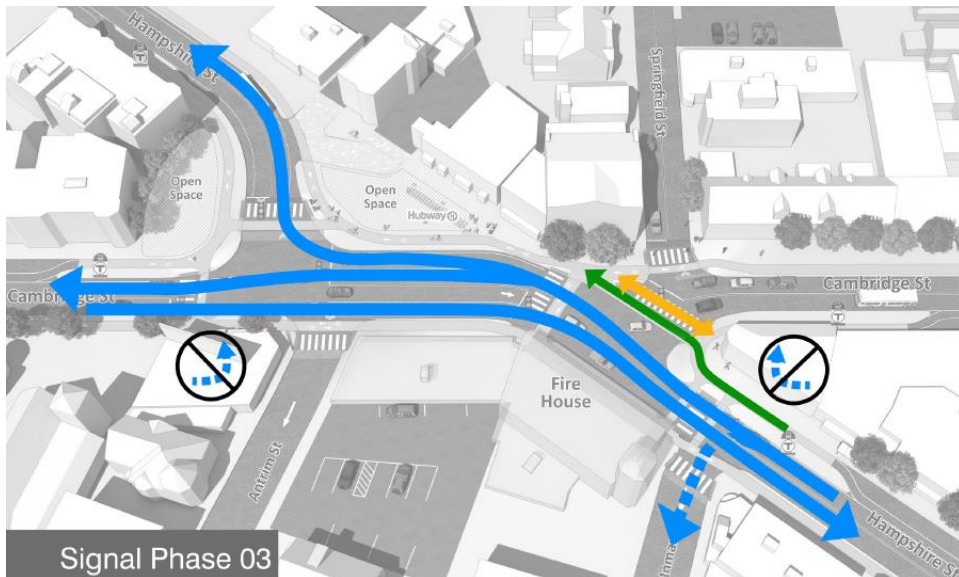
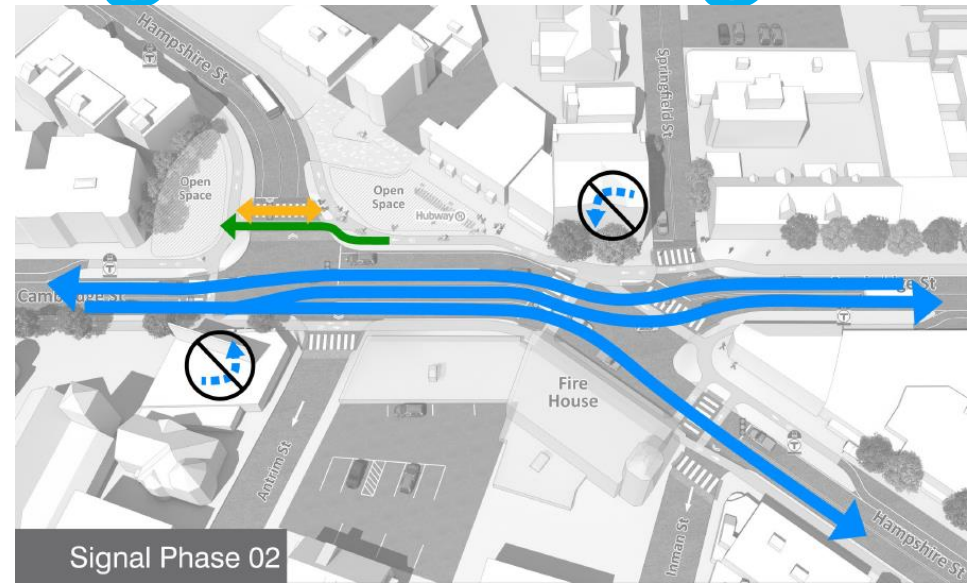
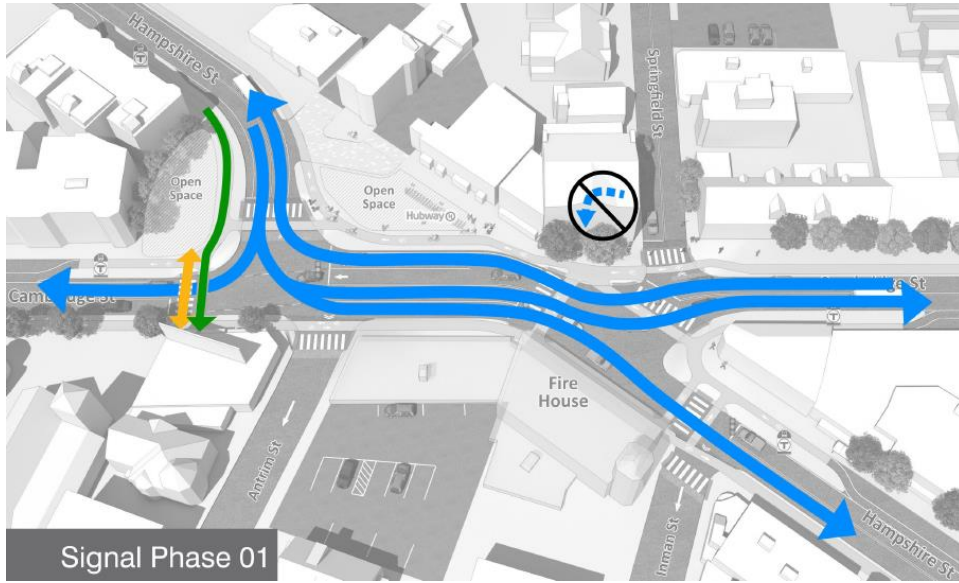
Bend Hampshire

Shared Street Examples





Bend Northside – Signal Phasing



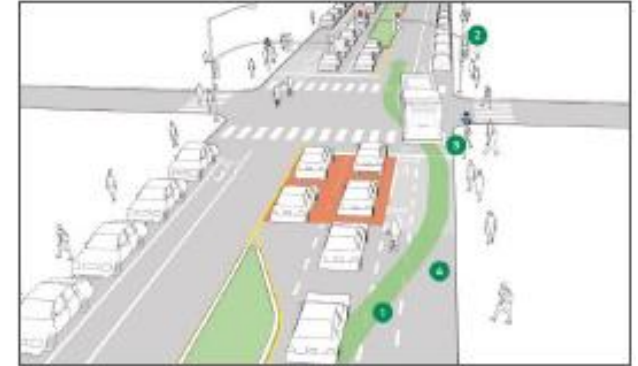


Toolbox Design Elements

Bus Stops



Floating bus stop with separated bike lane



Bus stop inside bike lane



Curbside pull out stop in parking lane



Bus queue jump lane

Toolbox Design Elements

Bike Lanes



Protected intersections



Separated bicycle lanes



Contraflow bicycle lanes



Signalized bicycle crossings



Bicycle route wayfinding



Colored pavement markings

Toolbox Design Elements

Open Space/Pedestrian



Street trees



Raised crosswalks



Streetscapes

Desired Routes of Travel

Existing Conditions



Desired Routes of Travel

Bend Cambridge



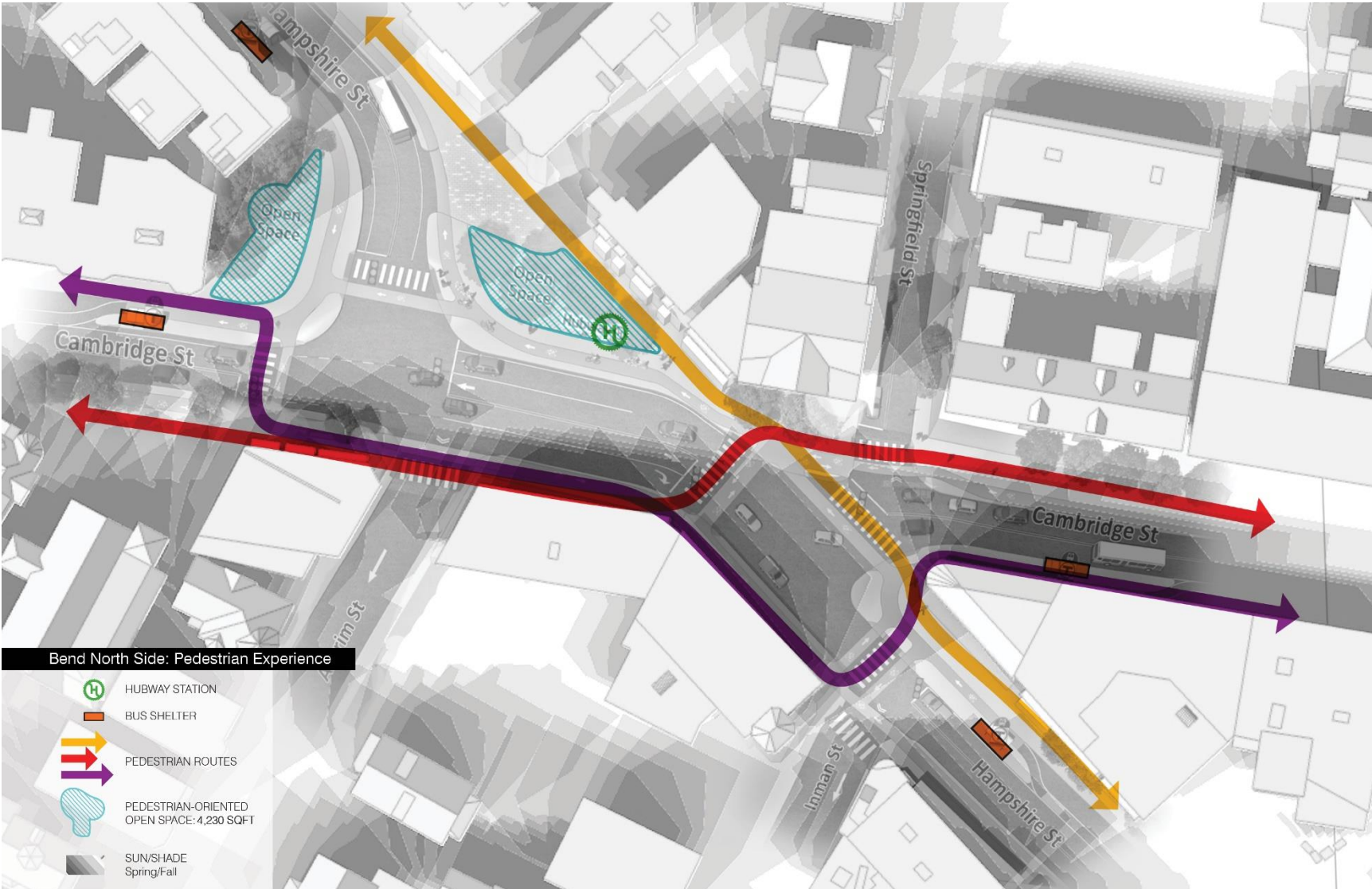
Desired Routes of Travel

Bend Hampshire



Desired Routes of Travel

Bend Northside



Desired Routes of Travel

Roundabout



Design Option Summary



INMAN SQUARE INTERSECTION IMPROVEMENTS PROJECT

Design Option Summary

Legend:
■ Improves
■ Minimally changes
■ Negatively impacts

DESIGN OPTION	Improve bicyclist safety	Improve pedestrian safety	Reduce vehicular delay	MBTA bus route efficiency	Impacts on Vellucci Plaza as open space	Impacts on other open space	Impacts to truck access	Signalized intersection for firehouse access
Bend Cambridge								
Bend Hampshire								
Bend Northside								
Roundabout			 <small>(More analysis needed)</small>	 <small>(More analysis needed)</small>				

* Please note that all categories are not weighted equally

Notes: _____

Design Details Boards



- Separated bike lanes improve safety for all intersection movements
- Provides direct, through access on Hampshire Street
- Internal two-way bicycle crossing in heart of the square
- Bicyclists have less delay and exposure at protected intersections
- Provides two-way bicycle connection to Springfield Street
- Provides bicycle crossing to Inman Street
- Indirect path on Cambridge Street due to road curvature
- Refine design to reduce potential conflicts between buses and bicyclists at bus pullouts



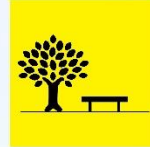
- Connectivity maintained on Hampshire Street
- Shorter pedestrian crossings reduce delay and improve safety
- Internal pedestrian crossing across Hampshire Street to increase connectivity
- Signalized crossings at all approaches
- Raised crosswalks across Springfield Street, Inman Street, and Antrim Street
- Exclusive pedestrian phase is necessary for some crosswalks



- Decrease in overall delay during AM and PM peak hours
- Two lane internal cross-section
- One-way, northbound only access to Springfield Street with potential right in/right out access possible
- Prohibits left turns from Cambridge Street onto Hampshire Street and from Hampshire Street onto Cambridge Street



- MBTA Route 69 outbound stop relocated to improve safety
- Opportunity to consolidate MBTA Route 69 stops opposite Fayette Street
- MBTA Route 83 far side stops on Hampshire Street improve passenger safety
- New configuration of Cambridge Street creates tight turns for MBTA Route 69
- MBTA Route 91 rerouted to Prospect Street
- All four MBTA bus stops located in the parking lane



- Minimal impact on Vellucci Plaza as the primary, pedestrian-oriented open space



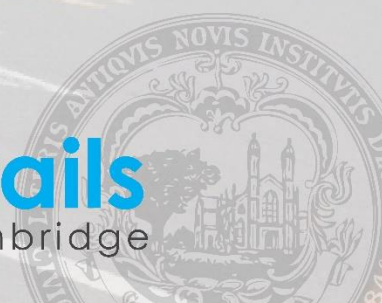
- Creates a new, pedestrian-oriented open space on the south side of the intersection
- Approximate size of new open space is 1,175 sf (excluding sidewalks and protected bike lanes)
- New open space is in a shaded area and is not adjacent to businesses



- Design accommodates vehicles up to 50' Wheel Base (WB-50)
- No potential changes to loading zones



- Signalized intersection allows for fire trucks to have access to cleared intersection
- Crosswalks and pedestrian/bike storage areas not located directly in front of firehouse







Survey/Community Feedback



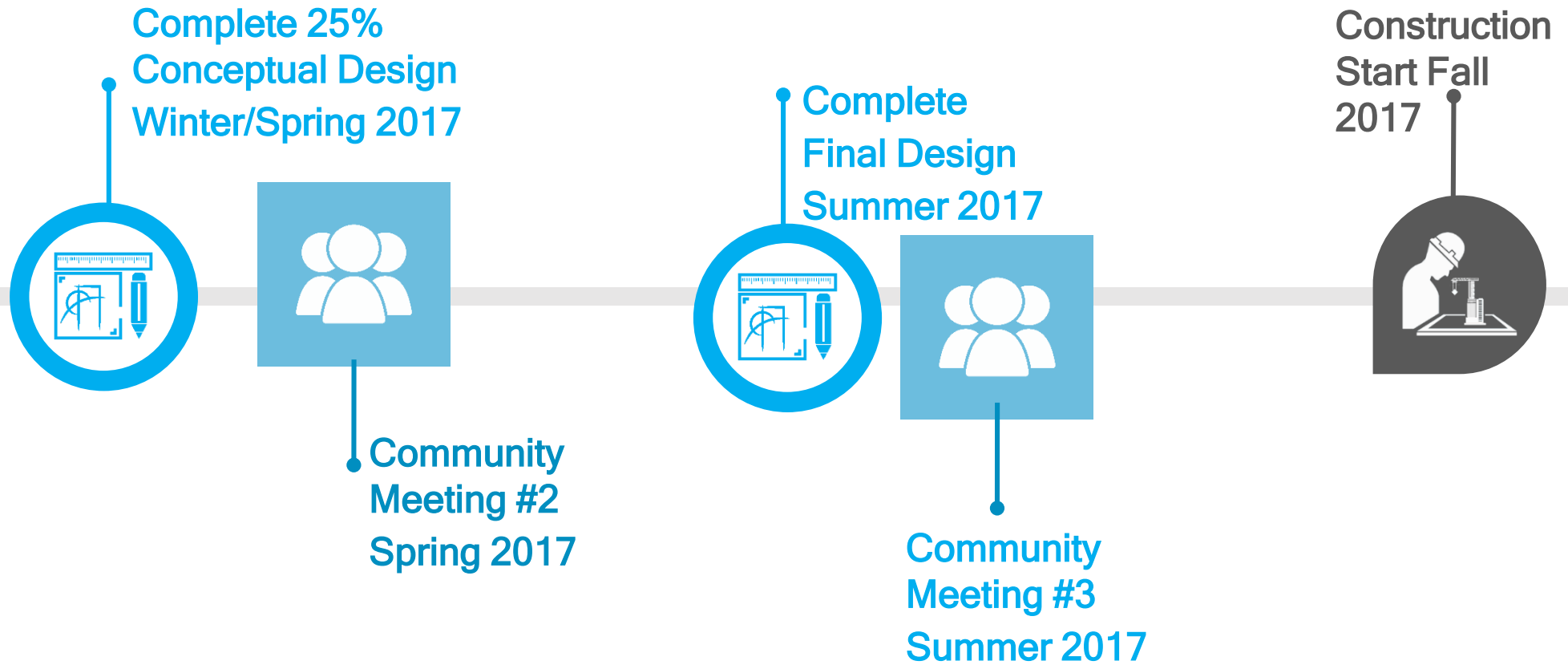
INMAN SQUARE INTERSECTION IMPROVEMENTS PROJECT

Design Option Survey

1. Are you a(n):									
<input type="checkbox"/>	Cambridge Resident								
<input type="checkbox"/>	Somerville Resident								
<input type="checkbox"/>	Inman Neighborhood Resident								
<input type="checkbox"/>	Business Owner (in the Inman area)								
2. Do you commute through the Inman area?	Y	N							
3. Do you work in the Inman area?	Y	N							
4. Do you spend time in Inman, apart from commuting?	Y	N							
5. Do you think Vellucci Plaza should stay the way it is today?	Y	N							
6. Do you think there should be additional pedestrian-oriented space in the Inman area?	Y	N							
7. Which modes of transportation do you use in/through Inman?									
<input type="checkbox"/>	Drive	<input type="checkbox"/>	Bus/Transit	<input type="checkbox"/>	Bike	<input type="checkbox"/>	Walk	<input type="checkbox"/>	Other_____
8. Which design do you prefer?									
9. What elements of your preferred design made you make that choice?									
									
									

NEXT STEPS

Next Steps



COMMENTS & QUESTIONS

