

Cambridge St

Hampshire St

Springfield St

Cambridge St

Open Space

Fire House

Antrim St

Inman St

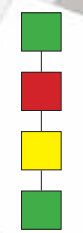
Hampshire St

Vellucci Plaza

Hubway

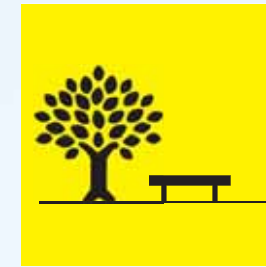
Bend Cambridge

January 24, 2017





- 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



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



- 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



- 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



- 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



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



- 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

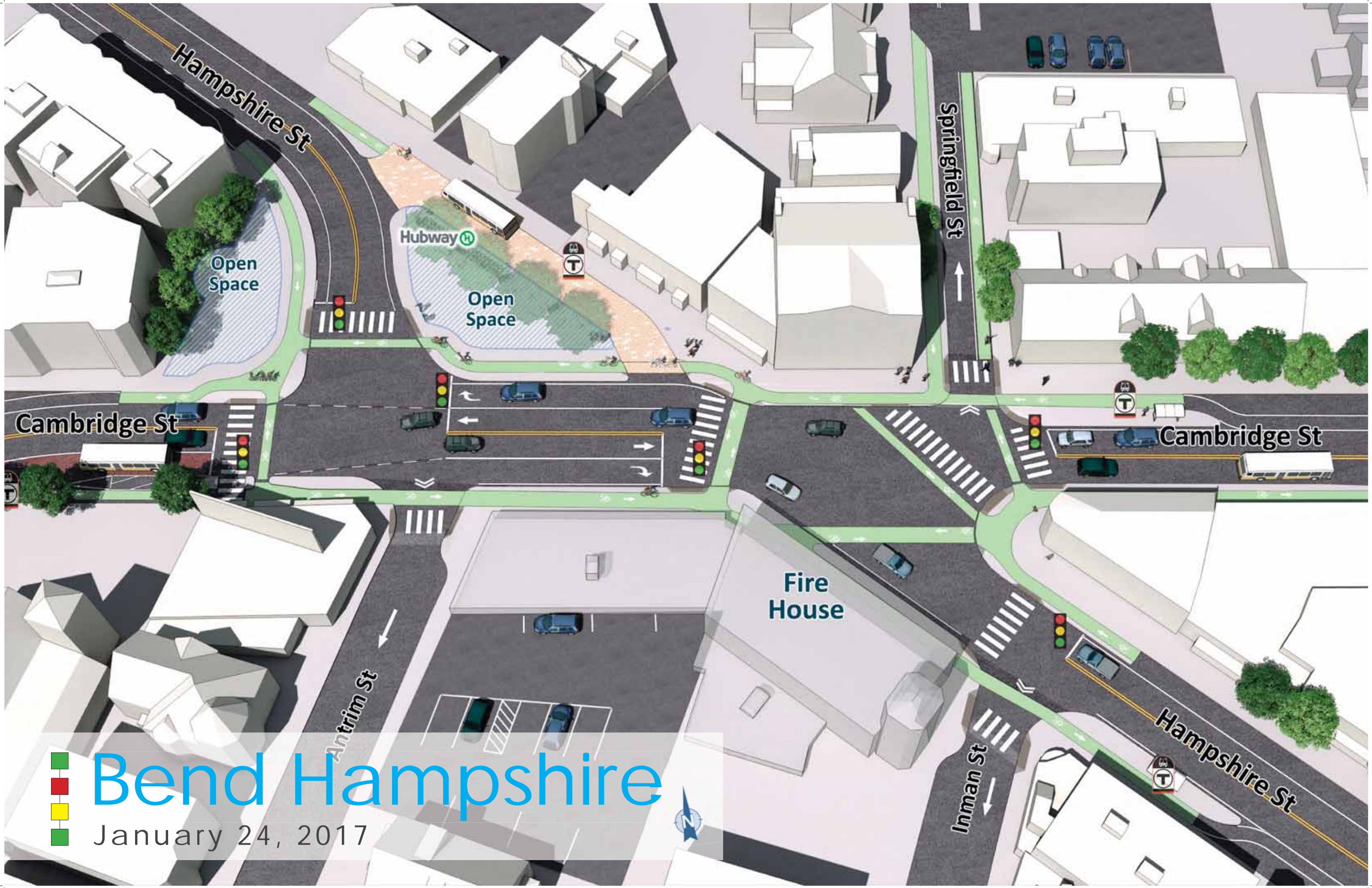


- Signalized intersection allows for fire trucks to have access to cleared intersection
- Crosswalks and pedestrian/bike storage areas not located directly in front of firehouse

Design Details

Bend Cambridge





Hampshire St

Cambridge St

Antrim St

Springfield St

Cambridge St

Hampshire St

Inman St

Hubway

Open Space

Open Space

Fire House

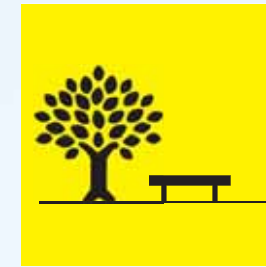
Bend Hampshire

January 24, 2017





- Separated bike lanes improve safety for all intersection movements
- Provides direct, through access on Cambridge Street
- Bicyclists have less delay and exposure at the intersection
- Internal two-way bike crossing in heart of the square
- Separated bike lanes behind the floating bus stops on Hampshire Street's southern end improve safety and reduce bus/bike conflicts
- Provides two-way bicycle connection to Springfield Street
- Indirect path for bicyclists on Hampshire Street due to road curvature



- Reduces area of Vellucci Plaza by 70
- Removes 70 of trees from Vellucci Plaza



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



- Creates a new, pedestrian-oriented open space on the north side of the intersection between Hampshire Street/Cambridge Street and the proposed shared street
- Approximate size of new open space is 8,000 sf (excluding sidewalks, protected bike lanes, and shared street)
- New open space is in a sunny location and is near businesses (located on other side of the shared street)
- Opportunity for larger bike share facilities in new open space



- Slight decrease in overall delay of AM and PM peak hours
- Opportunity to reintroduce Hampshire Street left-turns through protected phasing
- Shared street opportunity to accommodate bicycles, buses, and driveway access
- Internal crossing improves pedestrian access but requires additional signal phase that increases vehicle delay
- Queuing between intersections needs to be managed
- Enforcement challenges to prohibit through traffic on shared street



- Design accommodates up to 50' Wheel Base (WB-50)
- Opportunity for loading zone on the shared street on the north side of the intersection



- MBTA floating bus stops on Hampshire Street and Cambridge Street provide additional space for passenger amenities and separated bike lane around stops
- Bus queue jump lane improves efficiency for MBTA Route 69 east-bound morning peak service
- Straight Cambridge Street provides most efficient MBTA Route 69 routing
- MBTA Route 83 far-side stops improve passenger safety, with out-bound stop in a shared street
- MBTA Route 91 rerouted to Prospect Street

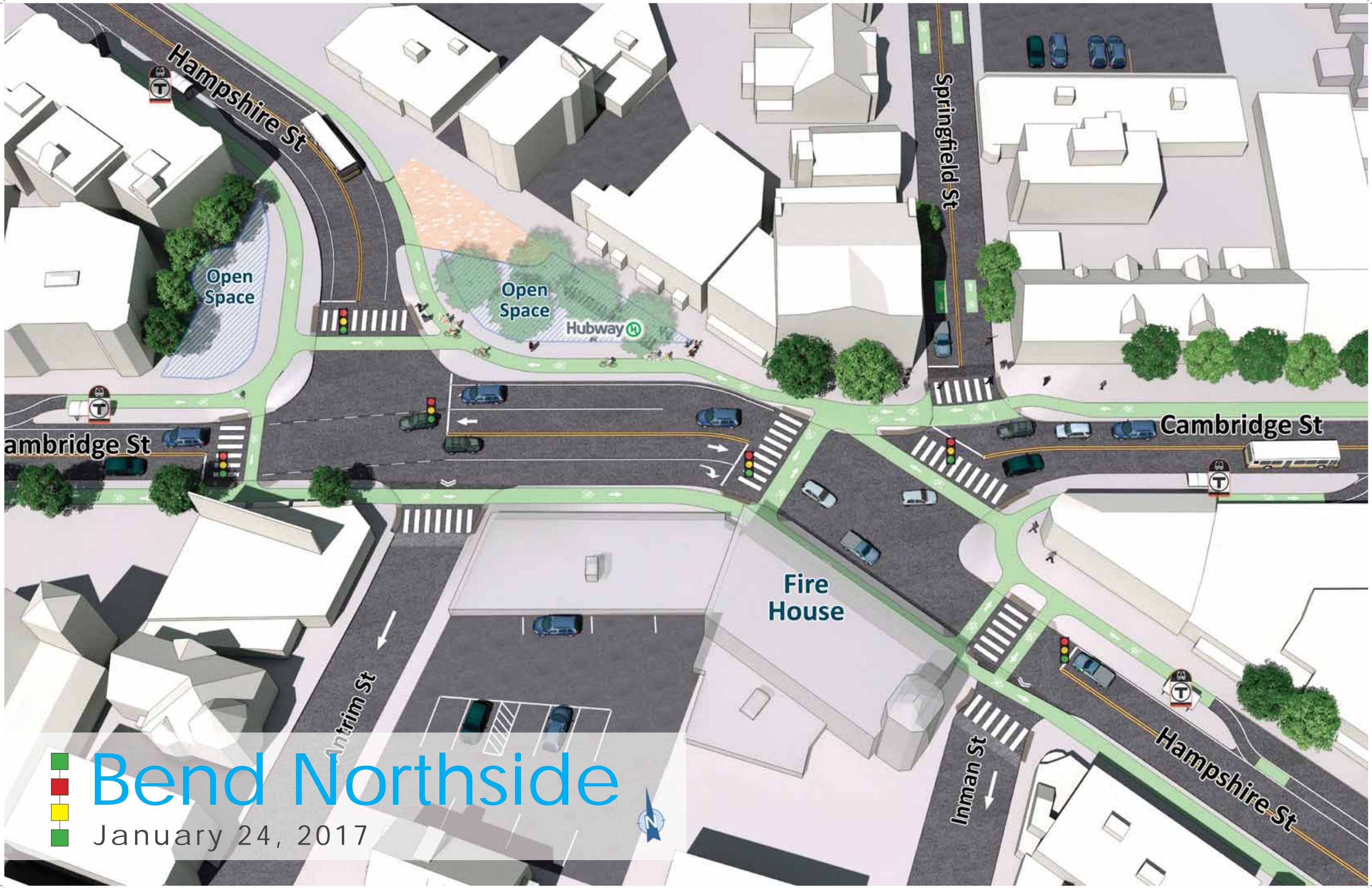


- Signalized intersection provides fire truck access to cleared intersection
- Access is challenging between firehouse and Cambridge Street east of the square due to tight curb radius

Design Details

Bend Hampshire



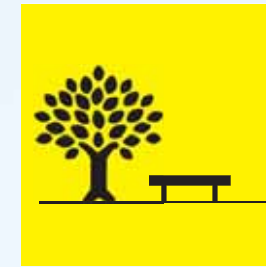


Bend Northside

January 24, 2017



- Separated bike lanes improve safety for all intersection movements
- Internal two-way bike crossing in heart of the square
- Bicyclists have less delay and exposure at the intersection
- Protected intersections for bicyclists
- Floating bus stops provide separated bike lane behind bus stop for improved safety
- Indirect path for bicyclists on both Hampshire Street and Cambridge Street due to road curvatures
- Internal bike crossings may complicate traffic signal operations



- Reduces area of Vellucci Plaza by 70
- Removes 70 of trees from Vellucci Plaza



- Connectivity maintained throughout the square on Cambridge Street
- Shorter pedestrian crossings reduce delay and improve safety
- Internal pedestrian crossing in the heart of the square
- Signalized crossings at all approaches
- Raised crosswalks across Springfield Street, Inman Street, and Antrim Street
- Exclusive pedestrian phase is necessary for some crosswalks



- Creates a new, pedestrian-oriented open space on the north side of the intersection between Hampshire Street and Springfield Street
- Approximate size of new open space is 6,680 sf (excludes sidewalks, protected bike lanes, and driveways)
- New open space is in a sunny location and is directly adjacent to businesses
- Opportunity for larger bike share facilities in new open space



- Decrease in overall delay during AM and PM peak hours
- Opportunity to reintroduce Hampshire Street left-turns through protected phasing
- Retains two-way traffic on Springfield Street through right-in/right-out access
- Adds driveways to businesses on northern end of Hampshire Street
- Internal crossings requires additional signal phase that increases vehicle delay
- Queuing between intersections needs to be managed



- Design accommodates vehicles up to 50' Wheel Base (WB-50)
- Opportunity for loading zone on shared driveway on north side of the intersection



- MBTA floating bus stops at all stops provide additional space for passenger amenities and separated bike lane around stops
- Relocated MBTA Route 69 outbound stop provides opportunity to consolidate with MBTA Route 69 stop opposite Fayette Street
- Less efficient route for MBTA Routes 69 and 83 due to roadway curvatures
- MBTA Route 91 rerouted to Prospect Street



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

Design Details

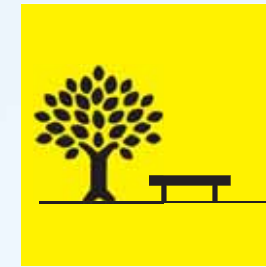
Bend Northside







- Separated bike lanes provided on all approaches and turning movements
- Reduction in vehicle speeds and conflict points at the roundabout provides a safer, more comfortable environment for bicyclists
- Bicyclists have priority, requiring vehicles to yield to bicycle crossings
- Bicyclists will have minimal delay



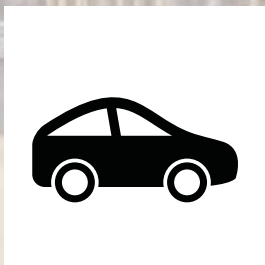
- Roundabout option has minimal impact on Vellucci Plaza as primary pedestrian-oriented open space



- Pedestrians have priority, requiring vehicles to yield to pedestrian crossings
- Reduction in vehicle speeds and conflict points at the roundabout provides a safer, more comfortable environment for pedestrians
- Additional crossing opportunities, including the central crossing, provides greater pedestrian connectivity



- A small amount of additional open space is available on the north side of the roundabout



- Similar delays and queues as existing conditions
- Delays outside of rush hours are anticipated to be less than existing conditions
- Roundabout option eliminates all turning movement restrictions, and allows for -turns



- Semi-trucks entering the intersection from the east on Hampshire Street, or exiting the intersection to the east on Cambridge Street will need to traverse over the mountable central island
- Loading zone space is identified on Springfield Street
- Roundabout option eliminates all turning movement restrictions, and allows for -turns



- Similar delays and queues as existing conditions
- Delays outside of rush hours are anticipated to be less than existing conditions
- Springfield Street MBTA bus service may need to be reconsidered or rerouted



- Fire trucks have direct access to the intersection, and all intersection approaches
- Fire trucks will likely need to use the mountable central island for some turning movements
- Fire trucks will need to utilize flashing lights and sirens to clear the intersection

Design Details

Roundabout

