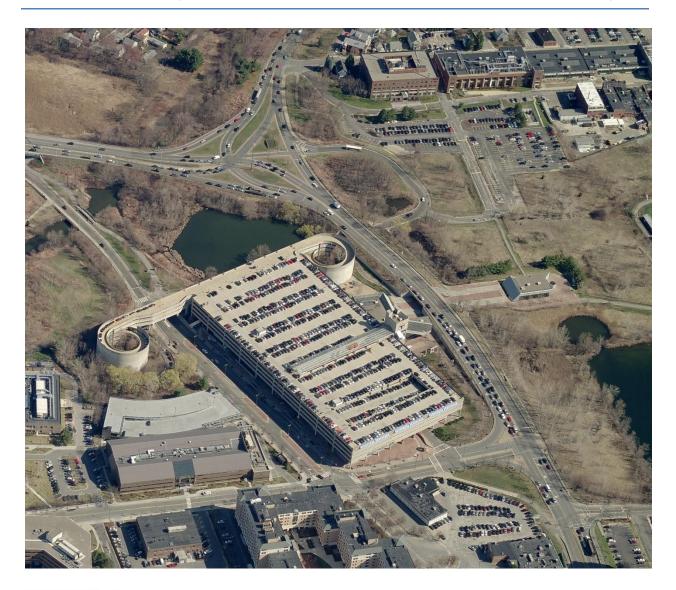
Alewife Bicycle and Pedestrian Access Study







July 2009

Final Report

1. Study Purpose

The Alewife Access Study has been commissioned to provide recommendations for improving pedestrian and bicycle access to Alewife Station. This study identifies current conditions in and around the station, current proposals in planning or design, and recommended short and long term projects and actions.

The study area is focused on the area that is walking distance to the station for pedestrian improvements, and cycling distance to the station for bicycle improvements. The pedestrian study area is bounded roughly by Cedar St to the east in Cambridge, Mass Ave to the northeast, Lake Ave to the northwest, Blanchard Rd to the west and Concord Ave to the south. The bicycle study area is bounded roughly by Cedar St to the east, Arlington center to the north, Belmont center to the west and and Belmont St to the south.

CTPS is concurrently undertaking a companion study to evaluate improving feeder bus routes, and motor vehicle access and egress to the station. Pedestrian and Bicycle counts were conducted at Rindge @ Rt 16 in 2008.

Through the study process, an advisory committee met, consisting of the government stakeholders in the station area. Representatives from the following organizations contributed:

- MBTA
- Department of Conservation and Recreation
- Executive Office of Transportation
- Cambridge
- Arlington
- Belmont
- State Rep. Will Brownsberger

2. Existing Conditions

The Alewife Station serves as the western terminus of the Red line and sits on the border with Cambridge and Arlington. The Belmont border is 2/3 of a mile from the station.

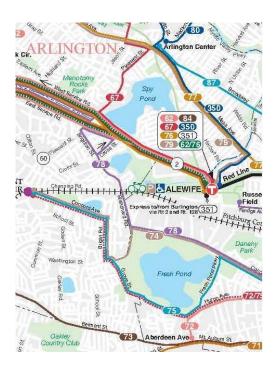


Figure 1 MBTA Routes at Alewife Station

There are currently 2733 vehicle parking spaces in the multilevel parking garage. The garage fills to capacity most weekdays. The parking rate is \$7 per day.

There are racks holding 174 bike parking spaces plus an additional 100 spaces in each of two enclosed bicycle parking cages, for a total of close to 400 spaces. The bike racks often fill to capacity during the peak summer season. Installation of the bike cages has alleviated the undersupply of bike racks.

The following MBTA buses serve the station

- 62 Bedford VA. Hospital
- 76 Hanscom/lincoln Labs
- 67 Turkey Hill
- 79 Arlington Heights
- 84 Arlmont Village
- 350 North Burlington
- 351 Oak Park/bedford Woods

The station area is surrounded a number of pedestrian and bicycle access points, including sidewalks, walking paths, and shared use paths. There are a number of projects that are either funded or proposed, as well as future opportunities, and numerous gaps.

The following list identifies, by agency or community, the existing, planned, and proposed multi-use paths, sidewalks, and walkways within the Alewife station area. Planned projects are those that are under design and or construction. Proposed projects may be projects suggested in planning studies, or other documents, but do not currently have funding.

MBTA

The MBTA has several projects and recent accomplishments at Alewife station.

Existing

<u>Bicycle Cages</u> - Two bicycle cages, accessible by a Special Bike Charlie Card were completed and opened in September 2008. Each cage holds approximately 100 bicycles.

CTPS is preparing a bicycle demand study for the MBTA.

Planned

<u>Wayfinding</u> - The MBTA has installed wayfinding signs around the station. The City of Cambridge has installed a wayfinding system of signs from the Alewife T/Minuteman Bikeway to/from Harvard Square and the Charles River.

Proposed

A new commuter rail stop has been proposed at Alewife station by various parties in the past. Planning has not been initiated for this project.

Massachusetts Highway Department

Existing

MHD owns maintains Rt 2, the limited access freeway that terminates adjacent to Alewife Station.

Planned

<u>Belmont-Cambridge-Somerville Path project</u> - MHD has a long standing project to upgrade portions of the shared use path between Belmont and Somerville. Scheduled advertising date for bids is April 2009 with construction commencing in Summer 2009.

The \$5,200,000 project consists of improvements to the shared use paths between Somerville and Belmont. This project will physically and visually connect the proposed work with the existing sections of path improving the continuity of the bike path. The project starts at the Somerville Community Path at Cedar St, continues through Davis Square, and follows Linear Park to Alewife Station in Cambridge where it will connect with Minuteman Path. At Alewife, a new bridge will be constructed over the Alewife Brook and the path will continue to Brighton Road in Belmont.

Upon completion of path construction, land along the borrow pond (cantilever section) to be transferred to DCR. Total path width of 13ft, includes rub rails on both sides and crash guard on access road side. The resulting effective width of the path is 10ft.

The path width in this section will be 10 ft with railings on both sides. There will be no shoulder or clear area. As a result, the path width is substandard per MHD and AASHTO standards for the amount of the traffic expected on the corridor.

DCR

Existing

There is stabilized surface path that connects Cambridge Discovery Park to the Alewife station.

Planned

<u>Minuteman to Mystic River Paths</u> - Two trails are currently at 75% design along the Alewife River between the Minuteman Trail and the Mystic River. On the west side, a 10 ft stabilized surface path is planned. On the east side, a 8-10 ft asphalt shared use path is planned. The path will be less than 8 ft wide in two sections due to physical constraints. The west side paths are designed to be informal nature paths, with a stabilized surface designed for all users.

The west side path will have a gap at the St Pauls Cemetery (with access provided by the east side asphalt sidewalk). Although the Cemetery has encroached into DCR property, there are no plans to reclaim the land. The sidewalk on the east side, adjacent to Rt 16 will be reconstructed as an 8ft wide sidewalk.

Funding from the stimulus (ARRA) program will fund \$3,000,000 for paths on both sides of the river as shown in the enclosed maps.

<u>Watertown Branch Path</u> - The proposed Watertown Branch Trail would eventually run from Danehy Park in Cambridge southwest through Fresh Pond Reservation to School St in Watertown and beyond to the Charles River. The section between School St and Grove St in Watertown has had 100% design documents prepared.

Phase 1 – School St to Arlington St. \$2.1 million in funding is available through MHD, with a \$200,000 match from DCR. The project is expected to go out to bid in the Spring of 2009 with construction commencing in 2009.

Phase 2 – Arlington St to Cottage St. The short section between Grove St and Cottage has not yet been designed. VHB will be preparing plans. Expected cost for this section of trail is approximately \$2 million.

Phase 3 – Cottage St to Fresh Pond Parkway. This section of railroad right-of-way remains in active in use. In May 2005, Guilford Rail systems filed to abandon service (See Surface Transportation Board STB Docket AB 32 (Sub No. 98X) and AB 355 (Sub No. 32X)). The future status of rail service is in doubt, but there is potential for shared trail/rail use.

<u>Mass Central</u> - Described in the MHD project description above. DCR will take over control of the trail between Brighton St and Alewife on completion of reconstruction including the cantilever section north of the parking garage.

<u>Alewife Reservation</u> - An MWRA project to construct a stormwater retention pond is planned for Alewife Reservation. As part of this project, a pedestrian bridge crossing Little River may be provided.

Proposed

None

Cambridge

Existing

Several paths access Alewife station, including the Minuteman Trail from the north, the Linear path from the east, and side paths along Alewife Brook Parkway.

The *Concord-Alewife Plan* was conducted through a public process in 2005. The plan provided recommendations for future pedestrian connections through the shopping centers when redevelopment occurs as well as future pedestrian connections through the industrial area ("Quadrangle") north of Fresh Pond.

Planned

<u>Linear Path</u> – The MHD project (described above) provides connections into Alewife station from both the east and the west.

<u>Large Scale Developments - There are several large scale residential and commercial projects within</u> walking distance to Alewife station that are going through various stages of review. All of the projects will significantly increase the pedestrian traffic throughout the station area.

- The Faces Nightclub site is proposed for development of a 240 unit apartment complex
- A 260 unit residential complex is permitted along Fawcett St in the Quadrangle area.
- A large commercial office space is permitted along the south side of Cambridge Park Drive

Proposed

- A feasibility study will prepared to evaluate a pedestrian/bicycle bridge over the tracks west of Alewife station to connect developments along Concord Ave with the station
- A second pedestrian bridge over the tracks east of the station connecting the shopping center, and Danehy Park, and the proposed rail trail on the Watertown Branch with residential areas to the north. An easement through Brickworks condominiums to Rindge Ave exists.
- Long term focus on a shared use path on the north side of the tracks between Alewife and Sherman Rd.
- The Concord Alewife Plan recommends a series of connections through the Quadrangle area

Arlington

Existing

The Minuteman Trail provides a major feeder of bicycle and pedestrian traffic directly into Alewife from Arlington Center and beyond.

Planned

Mass Ave between Rt 16 at the Cambridge line and Pond Street will be reconstructed. Reconstructed sidewalks and bike lanes (along with other bicycle accommodations) are being considered. Preliminary design is underway, funded through the 2008 TIP. Estimated construction cost of \$4,500,000.

Belmont

Existing

The Mass Central/Linear path is currently a packed dirt surface and provides access from Brighton St to Alewife station.

Planned

Belmont/Cambridge/Somerville Path project (see MHD)

Proposed

The Belmont Citizens Forum purchased 3560 ft of the Mass Central right-of-way in 2008 adjacent to the Fitchburg line for a path from Belmont Center to Brighton St. The path will connect to the Linear Path as described above at Brighton St. This path corridor is also part of the much longer Mass Central Trail that will eventually connect Boston with Northampton. An empty parcel that comprises the former Mass Central ROW at Brighton St in Belmont is proposed for development. Early indications are that the developer proposes a building that would block trail access between Brighton St and the Citizens Forum property.

3. Priorities and Concerns

The stakeholders were asked to identify key priorities and safety concerns within the station area. The issues ranged from the need for new facilities, better signage, and physical changes to improve safety or reduce conflicts between users.

CTPS

CTPS is evaluating vehicle operations in and around the station¹ as part of their component of the Alewife Access Study. Two key questions related to this study have potential impacts for pedestrians and cyclists in the station area.

- The signal at Rindge and Alewife Brook Pkwy currently has an exclusive pedestrian phase. The Alewife Working Group², aided by CTPS staff, has evaluated alternative geometric and traffic designs, including a concurrent pedestrian phase. This would improve overall LOS but might affect pedestrian safety.
- The evaluation of bus access to the station and overall traffic conditions at the Route 2/Route 16 intersection has led to a recommendation to add a lane westbound on Rt 2 from the Alewife Station Access Road approach (jug-handle) to just past the Minuteman Bike Path overpass. To add this lane, the sidewalk on the north side of the bridge over the Minuteman Trail would have to be removed/relocated. Pedestrian access issues must be addressed in connection to this proposal.

MBTA

The MBTA has stated that additional signage opportunities in and around the station need to be evaluated. Second, the access roads around the station need to have improved channelization.

DCR

The DCR would like to complete the network of paths on both sides of the Alewife River between Alewife station and the junction with the Mystic River. The ARRA (stimulus) package will help fund a large portion of this path network to provide pedestrian access along the river.

The Alewife River Master Plan calls for a network of walking trails throughout the Alewife Reservation that extends largely west from the Station to Brighton Rd in Belmont. Most of the trails would not provide a direct transportation route to the station, however a proposed pedestrian bridge over the Alewife Brook could provide improved transportation connections in the area.

¹ Alewife Station Study: Improvements to Feeder Bus Routes, Bus Access and Egress, and Route 2/Route 16 Intersection, Boston Region MPO, Draft Report, April 2009

² A working group convened by Massachusetts State Senator Stephen Tolman's office in May 2008 to examine traffic operations in the Alewife Station area, including the intersections of Route 16 with Cambridgepark Drive and Rindge Avenue.

Cambridge

The City of Cambridge has a number of concerns and interests around the Alewife station area.

- How can the findings of this study be implemented? What funding will be available?
- Enhance cooperation with the affected agencies and constituencies
- What is the impact on the increase in pedestrian traffic?
- TDM issues
- How will the public be made aware of the implemented improvements? How can we achieve a mode shift away from single occupant vehicles?
- What is happening with the proposal to consider a roundabout at the R2/16 intersection?³
- Not only access the T, but access the area, retail, housing, etc.
- Shared use paths, sidewalks and other pedestrian and bicycle facilities, are firm, stable and meet ADA requirements for accessibility.
- Need to improve Rindge Ave and Rt 16 for pedestrians⁴
- Increased pedestrian access over the commuter rail tracks
- The path along Fresh Pond Parkway fronting the shopping malls needs to be upgraded (wider, better maintenance)
- Coordination and increase level of bicycle and pedestrian counts between CTPS, Cambridge and others
- Need to provide a connection when the greenhouses are developed (between the Linear Path and Whittemore Ave.
- Improved access to new housing around the station area

Arlington

The Minuteman is the major access point to Alewife Station from Arlington. There are ongoing concerns about how to handle the mix of motor vehicle traffic and non-motorized users at the end of the Minuteman Trail.

The town desires a path that is built to accommodate both bicycle and pedestrians along the Mystic and Alewife Rivers to improve access to the station, provide recreational opportunities, and link with the future Green Line station in Somerville.

³ The Alewife Working Group examined roundabout alternatives but they did not prove to be effective. See analysis and recommendations contained in Alewife Station Study: Improvements to Feeder Bus Routes, Bus Access and Egress, and Route 2/Route 16 Intersection, Boston Region MPO, Draft Report, April 2009

⁴ The Alewife Working Group evaluated alternative designs that need further analysis and consideration.

Arlington residents use all of the non-auto modes of access to Alewife: walking, cycling, and bus, with several bus routes from Alewife serving Arlington. Need to consider the impact of pedestrian/ bike improvements on bus access to the station.

Belmont

Belmont is extremely concerned to see the completion of the planned shared use path from Belmont through to Alewife. This pathway will dramatically improve commuting options for many Belmont residents.

4. Recommended Improvements

The following is a list of recommended improvements and projects as developed by the advisory committee in conjunction with MAPC. The recommendations are divided into Programmed Projects, Small Scale Projects and Large Scale Projects

Programmed projects are those projects with funding and are currently under design or close to construction. Small scale projects are primarily sidewalk or path repair or other maintenance issues. Large scale projects are typical new infrastructure such as paths or bridges.

Programmed Projects (in progress)

Belmont - Cambridge Somerville Path (MHD)

Although this project is scheduled to go out to bid in April 2009, there are some remaining outstanding issues that the advisory committee recommends should be addressed.

- Narrow sidewalk shared by bicycles and pedestrians. MHD design for a 10ft path on the north side of Alewife Station with no clear zone does not meet AASHTO standards. (Map C)
 Recommendation Out to bid April 2009. Responsibility MHD
- Difficult crossing at this point. During off-peak hours, high motor vehicle speeds with poor visibility. During the evening peak, motorists are illegally blocking the crosswalk and curb ramp. Need to consider how to provide better egress for buses (#79 and #350). MHD is considering a flashing signal at this intersection (Map D)
 Recommendation Install a sign stating "do not block crosswalk". Construct a wider ramp on the north side and a raised crossing of the intersection. Responsibility MHD

Alewife and Mystic Paths

Current design calls for a soft surface stabilized path on the west side of the Alewife River, and a reconstructed sidewalk on the east side between Alewife Station and the Mystic River intersection. Neither of the designs allow for a continuous paved shared use path along at least one side of the river. With the upcoming extension of the Green Line to Medford at the confluence of the Mystic River, station access, connectivity and park access is are key elements.

<u>Recommendation</u> – DCR should evaluate options for provided a paved all weather shared use path through this corridor. Examine the possibility of dropping a lane on Alewife parkway, particularly opposite the cemetery to provide adequate width for a path. In January 2009, the Somerville Bicycle Committee submitted an alternative route for that path on the east side of the river to run adjacent to the river (as opposed to the current plan along Alewife Parkway). *Responsibility - DCR*

Mass Ave

There is an ongoing public process to rebuild Mass Ave between the Cambridge line and Arlington Center. Bike lanes and improved sidewalks are a part of the current proposal.

<u>Recommendation</u> – Ensure that quality bicycle and pedestrian accommodation are provided as part of the project. *Responsibility – Arlington/MHD*

Small Scale Project Recommendations

• The sidewalk on the north side of Rt 2 extends from opposite Whittemore Ave on the eastern end to just short of the pedestrian bridge over Rt 2 at the west end. (Map A)

<u>Recommendation</u> – A pedestrian corridor needs to be maintained on the north side of Rt 2 between the bus stop at the pedestrian overpass, and the future Alewife River paths along Route 16. Removal of the sidewalk along the north side of Rt 2 to accommodate capacity improvements has been proposed. Any such change shall also include relocating the sidewalk to provide an equivalent connection between the pedestrian overpass and Whittemore Ave. *Responsibility – DCR, MHD*

• Sidewalk on the north side of the Route 2/16 intersection terminates opposite Whittemore Ave. It's practically impossible to cross Rt 16 due to lack of a controlled crossing and high traffic volumes and speeds. (Map B)

<u>Recommendation</u> – DCR calls for a pedestrian bridge crossing the Alewife river at this location. When this is constructed, a signalized crossing at Whittemore should be installed. The signalization also allows for elimination of police detail at that intersection during rush hour periods. *Responsibility* – DCR

• Cut-through traffic through WR Grace parking lot to avoid queuing from Rt 2 EB to Rt 16 EB. The increases congestion and conflicts along the route. (Map F)

<u>Recommendation</u> – Consider prohibiting left turns at point P of which also eliminates such conflicts for the Minuteman Trail to Alewife traffic. Identify local O-D's for the traffic that uses this shortcut. <u>Responsibility</u> – <u>Cambridge</u>

Plaza at east head house is in poor condition with tree grates that are not flush, and numerous
vertical pavement changes. The MHD project is making partial improvements to the surface in this
area to delineate the shared use path. (Map G)

<u>Recommendation</u> – Improve landscaping and surface conditions. Consider a public private partnership to maintain landscaping. *Responsibility – MBTA*

Pathway from Alewife Parkway to the pedestrian underpass is dark and narrow about 6 ft wide.
 (Map H)

<u>Recommendation</u> – Evaluate feasibility to widen the path to 10 ft. *Responsibility – DCR?*

- Multi-use path on east side of Alewife Brook Parkway missing curb ramps, deteriorated concrete.
 No signs directing to the station. No crosswalk to Cambridge Park Drive. (Map I)

 Recommendation Eliminate curb cut and rebuild the sidewalk to provide a continuous walkway connecting to H above. Responsibility DCR
- Exclusive pedestrian phase results in long wait times for the pedestrian to cross Alewife Pkwy. Long wait times for pedestrians. (Map J)

<u>Recommendation</u> - Evaluate what improvements could be made to the system to enhance and support pedestrian access and crossings. In the evaluation, consider options such as concurrent walk phases (with Leading Pedestrian Intervals) and additional crossing opportunities. *Responsibility – DCR*

• Path along the west side of Alewife Pkwy is substandard in width for shared use paths. Dirty/slushy snow from the parkway lands on the path when plowed. (Map K)

<u>Recommendation</u> – Look for the opportunity to widen the path leading to the bridge through development on adjacent parcels. Evaluate striping a bike lane on the bridge and approaches. An adequate shoulder current exists to mark a bike lane. *Responsibility – DCR*

• Northbound motorists on Cambridge Park West illegally form two lanes, blocking the marked bike lane during evening peak. (Map O)

<u>Recommendation</u> – See N above for roadway changes. Consider allowing buses only on the right bike lane section to allow jumping of the queues. *Responsibility – Cambridge*

• Traffic turning from two directions onto the Rt 2 access road causes conflicts with the high volume of users approaching to/from the Minuteman Trail. There is no obvious sign announcing the trail start. (Map P)

<u>Recommendation</u> – Put up a sign (perhaps a banner similar to Arlington center). Consider formalizing the second lane as a bus only lane. Bus circulation in general should be part of a larger discussion with the MBTA. *Responsibility – Cambridge*

- Sometimes poor coordination between MBTA, Cambridge, Arlington and DCR on snow removal. The Minuteman is rarely plowed south of the Rt 2 underpass. The parallel sidewalk is usually plowed though there have been some inconsistencies. Minuteman Trail is poorly lit in the vicinity of the bridge. Excessive headlight glare for pedestrians walking westbound along the sidewalk. The bollards located on the bridge over Alewife Brook present a hazard for trail users. (Map Q)
 Recommendation resolve plowing and lighting issues in this section. Remove bollards on the bridge over Alewife Brook to allow a small vehicle with a plow. Check MHD plans to identify the load capacity of the bridge. Responsibility DCR, Cambridge, Arlington
- Path to Acorn Park Drive is muddy when wet. Surface does not allow for plowing. There is no lighting. (Map R)

Recommendation – Pave the path with an all weather surface and add lighting. Responsibility – DCR

 Between Discovery Park and Lake St there is a narrow sidewalk behind the guard rail, in poor condition. What are plans by Belmont to improve this area? (Map S)

<u>Recommendation</u> – long term narrow the roadway to accommodate a wider sidewalk. *Responsibility-Belmont, DCR?*

• Southern terminus of path at Russell Field at Rindge – An easement exists through Brickworks Condominiums on the opposite side of Rindge Ave of which would then connect across the tracks via a future bridge to Danehy Park, and the future rail-trail to Watertown. (Map T)

<u>Recommendation</u> – monitor developments and feasibility studies to ensure this corridor is maintained and a bridge is eventually realized. *Responsibility-Cambridge*

Large Scale Project Recommendations

The following lists of priorities are development of shared use paths along river and railroad rights-ofway. They are in varying stages of development.

Minuteman South Extension to Porter Square

Future multi-use trail extensions meet at a proposed crossing of the MBTA tracks between Danehy Park and the Brickworks Condominiums. The Minuteman extension would connect Alewife with Sherman St on the north side of the MBTA tracks, and perhaps beyond to Porter Square.

<u>Recommendation</u> – Continue to monitor opportunities to develop the trail through development and projects. *Responsibility – Cambridge*

Watertown Branch – Grove St to Danehy Park

This railroad is current still active in this section. However continued disrepair with the track and minimal use suggests that it could become abandoned in the near future.

<u>Recommendation</u> – Continue to monitor potential abandonment, acquisition of right-of-way opportunities and other opportunities to develop a trail. *Responsibility – Cambridge/Watertown*

Fresh Pond to Spy Pond Trail

MAPC proposed multi-use trail provides a connection between Fresh Pond and Spy Pond, and more importantly provides a feeder from areas expecting large development in the next few years to the Mass Central Corridor and into Alewife. The trail is really a connection of individual projects tied together in a cohesive corridor. The components of this corridor from south to north are as follows:

- Railroad ROW between Concord Ave and Fawcett St (Cambridge)
- Pedestrian/bicycle bridge over the commuter rail tracks. Feasibility study will be prepared shortly (Cambridge)
- Access required through private land to Cambridge Park Drive (Cambridge)
- Alewife reservation, and proposed pedestrian bridge across the Alewife Brook (DCR)
- Access required through private land between Acorn Park and the Faces nightclub site to the sidewalk along Rt 2. (Cambridge)
- Sidewalk along Alewife Reservation and Little Pond to Lake St (DCR)

<u>Recommendation</u> – Each community works together on their respective sections to ensure that a cohesive corridor is formed. *Responsibility – Cambridge, Arlington, Belmont, DCR*

Cambridgepark Drive and Cambridgepark West Reconstruction

Traffic flow in and out of the Alewife station garage is not operating as originally designed or built. Later additions of bike lanes as well as the Minuteman Trail have improved access by non motor vehicle modes. However it was clear that conflicts are continuous

- During the PM peak on Cambridge Park Drive, EB vehicles illegally occupy the bike lane.
 <u>Recommendation</u> Narrow the pavement width to eliminate the possibility of two vehicles side by side at this intersection.
 <u>Recommendation</u> The proposed development at 150-180 Cambridge Park Drive will be required by the city to mitigate the project by reconstructing portions of roadway at the intersection with Cambridgepark West. *Responsibility Cambridge*
- Evaluate roadway operations including turning movements, pedestrian conflicts and bicycle access to bicycle parking along Cambridgepark West.
 Recommendation Evaluate moving curbs inward to channelize traffic and prevent occupying the bike lane. Larger problem with vehicular access to Alewife station as well as egress to Rt 2 will likely require a much larger comprehensive re-evaluation and reconstruction of the entire street. Responsibility Cambridge

5. Next Steps

Implementation of each recommendation should be lead by the responsible agency or community as identified above. That includes presenting the proposals to the MPO as appropriate for funding through the various funding sources, and gathering the appropriate public feedback.

MAPC will convene periodic working group meetings to coordinate progress in implementing the recommendations, and assisting with efforts to obtain funding.

MAPC Report Authors

David Loutzenheiser – Transportation Planner

Susan Brunton – GIS Analyst

