

Memorandum for the Record
Transportation Planning and Programming Committee of the
Boston Region Metropolitan Planning Organization (MPO)

May 7, 2009 Meeting

10:00 AM –12:20 PM, State Transportation Building, Conference Rooms 2 and 3, 10
Park Plaza, Boston

David Mohler, Chair, representing James Aloisi, Executive Office of Transportation &
Public Works (EOT)

Decisions

The Transportation Planning and Programming Committee voted to take the following
actions:

- accept and release the *Regionwide Suburban Transit Opportunities Study, Phase III*

Meeting Agenda

1. Public Comments

There were none.

2. Chair's Report – David Mohler, EOT

Due to the state's fiscal crisis, EOT and other agencies are laying off staff. The
representatives to this committee from the Massachusetts Turnpike Authority – Shirin
Karanfiloglu and Stephen Hines – were among those laid off. Alan LeBovidge, Executive
Director of the Turnpike Authority, has resigned. Transportation Undersecretary Jeffery
Mullen is now the Acting Executive Director of the Authority.

At a future meeting, there will be a presentation on the bus rapid transit project currently
being proposed by Governor Patrick and the City of Boston that would enhance MBTA
bus route 28 and provide direct service from Dudley to South Station. In response to a
question from Jim Gallagher, Metropolitan Area Planning Council (MAPC), D. Mohler
reported that EOT will bring a presentation on this project to the next meeting. This
project would be a candidate for American Recovery and Reinvestment Act (ARRA)
funding.

**3. Subcommittee Chairs' Reports –Stephen Woelfel, MassHighway, and Jim
Gallagher, MAPC**

A joint meeting of the Administration & Finance Subcommittee and the Unified Planning
Work Program Subcommittee will convene at 1 PM today.

The Suburban Mobility/Transportation Demand Management (TDM) Subcommittee will
meet on May 19.

4. Regional Transportation Advisory Council – *Malek Al-Khatib, Regional Transportation Advisory Council*

The Advisory Council is working on expanding its membership and is interested in receiving more feedback from its members on how to increase participation..

5. Director's Report – *Arnie Soolman, Director, Central Transportation Planning Staff (CTPS)*

On May 4, MPO staff hosted a meeting with professors and students from the University of Beijing who were interested in learning about the MPO process in the United States. MPO staff informed the guests about the MPO processes and the content and development of the certification documents. The Chinese guests informed the MPO staff that strategy for dealing with air quality and congestion issues in China is currently not well coordinated, nor is there an established framework for transportation planning. In the afternoon, staff took the guests on a tour of the Central Artery and the Assembly Square area.

6. Meeting Minutes -- *Pam Wolfe, Manager of Certification Activities, CTPS*

The vote on the minutes of the meeting of April 30 was deferred to the next meeting.

7. Regionwide Suburban Transit Opportunities Study, Phase III – *Karl Quackenbush, Deputy Technical Director, CTPS, and Rob Guptill, MPO Staff*

K. Quackenbush provided background by summarizing the first two phases of the *Regionwide Suburban Transit Opportunities Study*. Phase I, which was completed in 2003, involved research into suburban transit in other areas of the country and best practices that could guide the MPO's Suburban Mobility and TDM Subcommittee. Phase II, completed in 2005, used lessons learned from Phase I and made recommendations for seven fixed route transit services. The MPO approved the work program for Phase III in the fall of 2006. This study has focused on the potential for demand-responsive services in the region, as one of the findings from Phase II was that there might be more potential for these than for fixed-route services in low-density suburban settings.

R. Guptill then provided an overview of Phase III. He began by defining several terms:

- *demand-responsive* – the most flexible form of suburban transit service
- *route deviation* – the transit operator has license to deviate from an established route
- *point deviation* – the operator has license to move stops between certain points along the route
- *feeder services* – services that feed the fixed route system
- *dial-a-ride* – truly demand-responsive service in which customers call for pick-up

For the first task of the study, the MPO defined the criteria that could be used to determine if demand-responsive are appropriate for particular communities. Many of the metrics used were the same as those used for fixed route services. Staff then worked with several communities to analyze the potential for demand-responsive service in those communities. The planning analysis considered geography, the existing transportation infrastructure, and demographics. The regional travel demand model was used to project

trip behavior and transit demand. This work identified possible new services. The report provides the details on the analysis of several communities.

Members asked questions and made comments:

Staff did a good job on the study. Has there been feedback from communities? (David Koses, City of Newton)

All the communities studied have received the report. Acton is moving forward with a demand-responsive proposal in the MPO Suburban Mobility program. Reading considered it but did not have enough funding. (R. Guptill)

Did you look at the six communities individually or was the intention to have unified recommendations across towns? (Marc Draisen, MAPC)

The towns of Carlisle, Bedford, Lexington, Reading, Acton, and Needham were studied. They were considered individually. (R. Guptill)

Did the study results show that there were a lot of good opportunities for demand-responsive services? Would the services be economically feasible? (M. Draisen)

There were opportunities, for example, Acton took the MPO's recommendations and proposed a service, and Reading took interest as well. For Carlisle, the MPO recommended dial-a-ride service, which is the most expensive of demand-responsive services. The town chose not to move forward. (R. Guptill)

As a result of the study, are there any lessons learned that could be generalized for the region? (M. Draisen)

We can draw conclusions from one town and apply it to another with similar population density and development patterns. But, the challenge of demand-responsive service is that for each community the type of service recommended would depend on an analysis of trip generators in that community. (R. Guptill)

From a policy perspective, what should the Boston Region MPO be looking to do moving forward? What can we learn from how demand-responsive service is being used in other parts of the country. (M. Draisen)

Since the Boston region already has a developed public transit system, it has been more difficult to put in flexible services here. There is an opportunity in this region to look at whether there may be applications for demand-responsive services that mix with fixed-route service. (R. Guptill)

Did the study look at MBTA service (such as paratransit) compared to the potential areas for demand-responsive service? (Paul Regan, MBTA Advisory Board)

A lesson that can be learned from paratransit experience, which is like a dial-a-ride service, is that dial-a-ride is more expensive than other demand-responsive services, such as route deviation, point deviation, and feeder services. (R. Guptill)

P. Regan noted that while the initial capital costs for paratransit would be higher than a dial-a-ride service, once the service is running, the only costs are for labor and fuel.

How comfortable was CTPS with using decade old census data? (D. Koses)

Census 2000 data was used as well as up-to-date residential density data from MAPC. The travel demand model was used to project trips to 2010. The most recent data available is the best to use given the changing nature of the suburbs. (R. Guptill)

Mary Pratt, Town of Hopkinton, noted that local census data, which towns compile each year, could be useful.

Richard Reed, Town of Bedford, noted that Bedford restructured its MBTA-funded transit service (which includes some fixed route and demand-responsive service) and tripled ridership.

Did staff calculate the fare levels that the potential services would need to charge to break even? (Steve Olanoff, Advisory Council)

The report gave a general sense of costs that would be incurred from operating the service (generally about \$4-6 per rider), but the report did not get into exact fare levels. That information could be calculated from the data supplied in the report. (R. Guptill)

A motion to accept and release the *Regionwide Suburban Transit Opportunities Study, Phase III* was made by Thomas Kadzis, City of Boston, and seconded by Thomas Bent, City of Somerville. The motion passed unanimously.

8. Regional Equity Community Outreach Update – *Annette Demchur, MPO Staff*
Members were provided with the *2009 Regional Equity Briefing Book*, which provides profiles on environmental justice areas in the region, including demographic information and maps depicting the transportation system and land uses in those areas. Members also received a memorandum, titled “Regional Equity Community Outreach Update”, and a matrix, titled “Regional Equity Matrix of Issues and Follow-up.” (See attached memorandum and matrix.)

Members received their first *Regional Equity Briefing Book* after an outreach effort in 2005. The following year, the Traffic Analysis Zones in the regional model changed and, as a result, what were defined as environmental justice areas changed. The new *2009 Regional Equity Briefing Book* includes environmental justice areas based on the new analysis.

For community outreach, environmental justice areas are defined as having a minimum population of 200 minorities, and either median income at or below 60% of the region’s median household income or a population that is 50% or more minority.

Since the last outreach effort in 2005, eleven more communities were added to the roster of environmental justice communities in the region. For the most recent outreach, staff focused on outreach to those communities first.

As summarized in the attached memorandum, the following themes emerged from the outreach:

- Communities that have transit would like to keep it.
- A significant number of residents in environmental justice areas are transit dependent. Service coverage and availability is very important to them.
- Roadway issues raised dealt with roadway condition, safety at intersections, congestion, air quality, and enforcement of traffic and parking regulations.
- Transit service issues included concerns about frequency of service (particularly at off-peak hours, which affects people who work in the evenings), coverage of service (a particular concern for the elderly and for residents of out-lying towns), slow travel times, and system connectivity.
- Transit facility issues included concerns about the conditions of bus shelters (and lack of schedule information there), safety at bus stop locations, the locations of vehicle yards and shops, and construction and development around stations.
- The service reliability of THE RIDE is a major concern.

During a discussion period, M. Draisen raised a question about how staff would follow-up on this work. A. Demchur noted that the information is used in the project selection process for the TIP and Regional Transportation Plan (RTP). M. Draisen stated that the MPO should evaluate the regional equity information and follow-up on the concerns identified since some of the concerns are service-related issues that would not be addressed through TIP or RTP projects. T. Kadzis noted that a challenge for the MPO is to determine how it can help enact operational improvements, given that operations improvements are largely outside of the MPO's purview. Although the MPO can inform implementing agencies of problems, the MPO cannot implement the solutions itself.

J. Gallagher suggested that the MPO redefine the position of Regional Equity Coordinator as an ombudsman position, responsible for a more active follow-up on issues raised and responses to them. P. Wolfe stated that MPO staff could fill that function, if directed.

Ginger Esty, Town of Framingham, suggested that the MPO's role could be to notify municipal public works departments about the concerns of residents of environmental justice areas. A. Demchur noted that staff does send letters to municipalities and implementing agencies summarizing issues raised by residents.

M. Pratt remarked that sidewalk conditions were identified as a major concern when the MPO's former Environmental Justice Committee was operating. She suggested that the City of Boston address the issue through its pavement management program. She also expressed concern about the reliability of THE RIDE and how MBTA service cuts would affect the paratransit service.

Paul Regan, MBTA Advisory Board, asked staff to consider whether any of the responses to the recent MBTA passenger surveys might provide useful information.

9. Alewife Studies: Part 1 – Alewife Study, Phase II: Improvements to Feeder Bus Routes, Bus Access and Egress and the Route 2/Route 16 Intersection – K.
Quackenbush, Seth Asante, and Alicia Wilson, MPO Staff – and Part 2 – Alewife Bicycle and Pedestrian Study – David Loutzenheiser, MAPC

K. Quackenbush introduced the presentation on the second phase of the Alewife Study by recapping the first phase. Phase I was an investigation of the travel patterns near the Alewife Station that used license plate data and bicycle survey data. The results were presented to the MPO in the summer of 2007.

Phase II began in the fall of 2007. It focused on ways to improve bus service and access to the Alewife garage, issues regarding traffic flow at the Route 2/Route 16 intersection, and bicycle and pedestrian access to the station. To address a concern about the use of 2003 data from the Registry of Motor Vehicles (RMV) in Phase I, staff used 2008 RMV data and determined that the conclusions from Phase I remained valid. The Phase II work was done with input from the Alewife Working Group, which was formed in 2008 by public and private officials concerned with traffic issues in the area.

Traffic Operations

S. Asante then gave a PowerPoint presentation on the results of Phase II in terms of traffic operations at the Route 2/Route 16 intersection. (See attached PowerPoint presentation.) Problems identified in the area were traffic congestion on Route 2 and the Alewife Brook Parkway (which affects bus traffic to the MBTA station), insufficient capacity at the intersection, traffic merging due to inconsistent lane configuration, traffic diversion, and bus access and egress problems at the station.

Staff evaluated short- and long-term solutions that included optimizing the signal at the intersection, adding lanes to increase capacity, converting the intersection to a rotary, and building a flyover at the intersection.

Recommendations developed with the working group included:

- adding a third westbound lane for a short distance between the Alewife Station Access Road approach (jug-handle) and the Minuteman Bike Path overpass
- reconstructing the Route 2 eastbound left-turn lane to Route 16 north into a double left-turn lane
- reconstructing the Alewife Station Access Road (jug-handle) into two lanes for as far back as possible.
- upgrading traffic signal design including new equipment for demand-responsive operation and detectors/sensors for bus priority

Members asked questions about this portion of the study:

For the option that adds a third westbound lane, would the lane be expanded onto the existing shoulder? (T. Kadzis)

The westbound lane could be expanded onto an abandoned sidewalk. There is room to expand the jug-handle. (S. Asante)

Are there conservation issues associated with expanding the jug-handle? (M. Pratt)

The expansion would not go into wetlands. MassHighway would review the wetlands issues. (S. Asante)

Is there any pedestrian access in the area now? (M. Pratt)

There is a sidewalk along Route 2 that is not being used, but there is other pedestrian access in the area. (S. Asante)

For the option that adds a third westbound lane, would there be a need to rebuild the bridge? (J. Gallagher)

The bridge does not need to be expanded, according to MassHighway. (S. Asante)

Would the improvements change the intersection from an F rating (level of service)? (M. Al-Khatib)

Some locations would become D rated. The traffic queues would be substantially reduced. (S. Asante)

Do the recommendations address safety problems at the Alewife Brook Parkway merge? (J. Gallagher)

There is not currently a recommendation for that area. (S. Asante)

Doesn't the jug-handle already operate as two lanes? (D. Koses)

It is not stripped as two lanes. The recommendations propose to make the road officially two lanes. (S. Asante)

M. Pratt suggested placing synchronized traffic lights at the intersection near the station and at the Route 2 and Route 16 split to reduce dangerous merging. S. Asante noted that the traffic signal issues would have to be considered during the project design.

Bus Service

The presentation resumed with A. Wilson discussing the bus service portion of the study. She noted that the license plate survey in Phase I study identified a number of vehicles from Lexington and Arlington in the garage. Phase II examined whether there was adequate bus service that commuters from those towns could use to travel to the station. Factors considered in this analysis included population density, auto ownership, income, and commuters to Boston and Cambridge who live near bus routes.

The results showed that Arlington is more densely populated than Lexington (with most areas in Arlington having population density higher than 5,000 people per square mile). There is a high degree of auto ownership in both towns, but less so in Arlington where twenty percent of households had incomes below the MPO median. Of commuters to Boston, 80% in Arlington and 19% in Lexington live within a quarter-mile of a bus route. Staff concluded that MBTA bus service is appropriately routed through those areas.

The following ideas for ways to encourage people to use buses were raised:

- limit the number of bus stops along the routes (this would have to be done through coordination with the MBTA and the towns)
- reinstate MBTA bus route #67 into Lexington (though this could lengthen trip times)
- reroute bus #67 within Arlington (though hilly terrain and narrow roads may make this option not feasible)
- consider a shuttle service to Alewife Station funded by the MPO's Suburban Mobility Program

Members asked questions:

There was a recommendation about an auxiliary lane on Route 2 eastbound. Was there consideration of extending the existing lane further? (J. Gallagher)

The lane could not be limited to buses and there would have to be two access points to the lane, which is not allowed by the federal agencies. There would also be weaving issues. (A. Wilson) Staff will look into it. (K. Quackenbush)

If bus stops were reduced would the distance between them be looked at? (M. Pratt)

The changes would not be done indiscriminately. The MBTA and community would have to work together. Some stops are very close together, but consideration would have to be given to factors such as the location of senior housing. (A. Wilson)

Bicycle and Pedestrian Access

D. Loutzenheiser then discussed the *Alewife Bicycle and Pedestrian Access Study*. (See attached study and maps.) He noted that Alewife Station is well accessed by bicyclists and pedestrians, and that there are close to 400 bicycle parking spaces at the station. Due to traffic congestion in the area, there remains a need to maximize and promote non-vehicular means of access to the station.

He referenced several maps (attached) depicting existing bicycle and pedestrian facilities in the Alewife area, as well as projects that are in-progress and proposed. Some key facilities include the Linear Path connecting Alewife to Belmont (soon to be under construction), a DCR project to develop paths from Alewife Station along the Alewife River to the junction with the Mystic River (the trails are being designed to pedestrian standards not bicycle standards), and the Watertown Branch Rail Trail.

He drew attention to several areas (marked by the letters A and B on the attached map) where bicycle and pedestrian access could be improved. At one location there is an abandoned sidewalk and areas proposed for new residential and office development. The west side of Alewife Brook Parkway and Cambridge Park Drive are substandard for bicycles.

The study recommendations are listed on page 11 and 12 of the attached *Alewife Bicycle and Pedestrian Access Study* document.

Members asked questions:

Is there a need for a sidewalk [at the locations marked A and B on the map], and is there a need for pedestrian access through the interchange at-grade? (J. Gallagher)

If DCR develops a path there or properties in the area are developed, there may be a need for pedestrian access. The study committee agrees that the sidewalk can be removed, but that there should be an option to provide pedestrian access up to Route 2. The pedestrian connection should not be eliminated. (D. Loutzenheiser)

Is the working group for this study the same as the one on the CTPS portion of the study? (S. Woelfel)

No. This working group included city and town planners. DCR and the MBTA were invited. (D. Loutzenheiser)

What is the follow-up on this study? (J. Gallagher)

There is follow-up on the roadway improvements piece of this study. (K. Quackenbush)

M. Draisen stated that he would like to have this study discussed at the Inner Core Committee to encourage municipalities' involvement in advocating for improvements. He noted that there are recommendations from the study that are critical to achieving MetroFuture goals.

Representative William Brownsberger thanked the CTPS and MAPC for giving their attention to traffic and access issues at Alewife, and he thanked the MPO for its support of the Belmont, Cambridge, Somerville Path. He noted that, in the future, he would advocate for some of the improvements recommended in the study.

M. Al-Khatib suggested that staff provide cost estimates for the proposals. S. Asante noted that MassHighway estimated the short-term traffic improvements at approximately \$400,000. D. Loutzenheiser stated that MAPC was not scoped to determine costs for the bicycle and pedestrian improvements.

10. Work Program: Arterial Traffic Signal Improvements and Coordination – K. Quackenbush, and Mark Abbott, MPO Staff

Members were presented with the work program for *Arterial Traffic Signal Improvements and Coordination*. (See attached.) This work program would examine arterial traffic signal coordination as a strategy for managing roadway congestion. This strategy involves planning to interconnect a series of signals along an arterial so that there is a minimum of delay and breaking of traffic platoons. The aim is to optimize the signal system to give the greatest benefit to the greatest number of travelers.

The objective of the work program is to identify three or four groups of intersections and to develop plans for coordinating the signals. Ten candidate groups would be selected. The locations would be ones that are not currently under study or design, and they would likely be known to the TIP process so as to maximize the potential for implementing improvements. The locations will likely be along major arterials whose signals are owned

by state agencies or large cities. The signal owners (MassHighway, Department of Conservation and Recreation, and cities) are expected to be involved in the process. CTPS will aim to get buy-in from those stakeholders for implementing study recommendations. The results and recommendations will be discussed with the stakeholders.

If the study recommendations are implemented the benefits that could be expected include improvements to vehicular traffic flow, reduction in crashes (possibly), improvements to bus transit travel time reliability (if present), and reduction of vehicle emissions. During the study, staff also will consider issues of bicycle and pedestrian accommodation irrespective of signal coordination.

This is a five-month study that will cost \$45,000 in 3C funds.

11. Members Items

J. Gallagher reported that the MPO election is tentatively scheduled for June 9. Election papers are due on May 15.

12. Adjourn

A motion to adjourn was made by P. Regan, and seconded by L. Duncan. The motion passed unanimously.

Transportation Planning and Programming Committee Meeting Attendance
Thursday, May 7, 2009, 10:00 AM

Member Agencies

EOT
City of Boston
City of Newton
City of Salem
City of Somerville
MAPC

MassHighway
MBTA
MBTA Advisory Board
Regional Transportation
Advisory Council
Town of Bedford
Town of Hopkinton
Town of Framingham

Representatives and Alternates

David Mohler
Thomas Kadzis
David Koses
Lynn Duncan
Thomas Bent
Marc Draisen
Jim Gallagher
Stephen Woelfel
Joe Cosgrove
Paul Regan
Malek Al-Khatib
Steve Olanoff
Richard Reed
Mary Pratt
Ginger Esty

MPO Staff/CTPS

Seth Asante
Annette Demchur
Maureen Kelly
Anne McGahan
Elizabeth Moore
Hayes Morrison
Sean Pfalzer
Karl Quackenbush
Arnie Soolman
Alicia Wilson
Pam Wolfe

Other Attendees

William Brownsberger State Representative
Mark Grenard EOT
David Loutzenheiser MAPC



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James A. Aloisi, Jr.
Secretary of Transportation
and MPO Chairman

Arnold J. Soolman
Director, MPO Staff

The Boston Region MPO,
the federally designated
entity responsible for
transportation decision-
making for the 101 cities
and towns in the MPO
region, is composed of
the following:

Executive Office of Transportation
and Public Works

City of Boston

City of Newton

City of Salem

City of Somerville

Town of Bedford

Town of Framingham

Town of Hopkinton

Metropolitan Area Planning Council

Massachusetts Bay Transportation
Authority Advisory Board

Massachusetts Bay Transportation
Authority

Massachusetts Highway Department

Massachusetts Port Authority

Massachusetts Turnpike Authority

Regional Transportation Advisory
Council (nonvoting)

Federal Highway Administration
(nonvoting)

Federal Transit Administration
(nonvoting)

MEMORANDUM

**TO: Transportation Planning and Programming
Committee**

April 16, 2009

FROM: Annette Demchur

RE: Regional Equity Community Outreach Update

The Boston Region MPO's Regional Equity Program is composed of three key elements: community outreach, incorporation of environmental justice into the transportation-planning process, and analysis of the effects of planned transportation projects on environmental-justice populations. This memorandum provides an update on the community outreach component of the Regional Equity Program and includes a summary of the input collected from the community outreach conducted since January 2008. The information will be used in the evaluation of projects for the Metropolitan Transportation Plan, the Transportation Improvement Program, and the Unified Planning Work Program. Relevant information has also been summarized for each agency and municipality about issues that fall under their purview.

BACKGROUND

The Boston Region MPO takes a proactive, grassroots approach to identifying environmental-justice issues in the region. The primary method the MPO utilizes to obtain community input concerning the transportation needs and issues facing low-income and minority residents in the MPO region is to interview representatives from community and social-service organizations in MPO-defined environmental-justice areas.

The MPO has identified 28 environmental-justice areas, based on the following definition:

An environmental-justice area includes one or more transportation analysis zones (TAZs) that both (1) have a total minority (non-white or Hispanic) population of over 200 residents, and (2) meet one or both of the following criteria:

- *Low Income:* A median household income at or below 60 percent of the 2000 MPO-region median household

income (60 percent of the region's median household income of \$55,800 is \$33,480).

- *Minority*: A population that is more than 50 percent minority (non-white or Hispanic).

The 28 areas that encompass one or more TAZs with environmental-justice populations are in the neighborhoods or municipalities listed below.

The Boston neighborhoods of:

- Allston-Brighton
- Charlestown
- Chinatown
- Dorchester
- East Boston
- Fenway
- Hyde Park
- Jamaica Plain
- Mattapan
- Roslindale
- Roxbury
- South Boston
- South End

The municipalities of:

- Cambridge
- Chelsea
- Everett
- Framingham
- Lynn
- Malden
- Medford
- Milford
- Peabody
- Quincy
- Randolph
- Revere
- Salem
- Somerville
- Waltham

REGIONAL EQUITY PROGRAM OUTREACH, JANUARY 2008–MARCH 2009

Since January 2008, MPO staff have interviewed representatives of 21 organizations that serve low-income and minority residents in Charlestown, East Boston, Everett, Hyde Park, Jamaica Plain/Mission Hill, Lynn, Malden, Medford, Milford, Peabody, Randolph, Revere, the South End, and Waltham. MPO staff contacted representatives of two organizations in each of these neighborhoods: South Boston, Fenway, and Roslindale; no input has been received from these organizations to date. Staff also obtained input during the MPO's two planning forums on coordinated human services transportation.

The issues identified by community participants in these meetings are summarized below, and details concerning the source of the comments and organization contacted for follow-up are presented in the attached table. Staff will continue to contact representatives of organizations in the remaining environmental-justice areas and will include new input from those organizations in the next regional-equity community outreach update.

Staff also attended a Move Massachusetts meeting concerning environmental justice, entitled *Greater Boston's Transportation Inequities: Environmental Justice in the Geographic Distribution of the Benefits and Burdens of Transportation Systems and*

Facilities, presented by Eugene Benson, who is the legal counsel at Alternatives for Community & Environment (ACE) and counsel to its core committee, the T Riders Union; and also counsel to On the Move: The Greater Boston Transportation Justice Coalition. Issues identified by the participants of that meeting are included in the attached summary.

SUMMARY OF INPUT, JANUARY 2008–MARCH 2009

Commendations

Representatives of communities with good transit coverage commented on the importance of transit in providing mobility. In addition, the following specific commendations were expressed.

- Some of the residents of the South End’s Villa Victoria Housing Complex are pleased with the Silver Line service.
- The South End environmental-justice community will benefit from the South Bay Harbor Trail.
- Improvements made in the MBTA’s systemwide accessibility have led to increased mobility, and the MBTA should continue to make accessibility improvements.
- Waltham is well served by the MBTA.
- Most of the transportation needs of the residents of the two Randolph Housing Authority sites are met by the MBTA’s bus service or the Council on Aging vans.

Roadway Issues

Concerns were raised about the condition and safety of some roadways and bridges, for both pedestrians and vehicles; the impact of traffic congestion and concomitant air quality issues in communities; and the need to enforce traffic and parking regulations. Advocates for elderly people expressed concern about pedestrian safety and facilities.

- Elderly residents of Villa Victoria, in the South End, need more “handicapped parking” next to their buildings, and a simplified procedure for obtaining a disability placard or plate.
- Some street crossings are dangerous, particularly for elderly people. More marked street crossings would be beneficial, along with better signage, enforcement of speed limits, and lighting. West Dedham Street, Albany Street, and Massachusetts Avenue (all in the South End) were specifically mentioned.
- Improvements on Massachusetts Avenue are needed (lighting, better signage, and improved safety of pedestrian crossings), and any improvements in safety and traffic flow will benefit residents. The segment between Tremont Street and Albany Street is always congested.
- Albany Street is in poor condition and is dangerous to cross.

- The Chelsea Street bridge replacement project is needed, but will burden the community during construction.
- The Fairmount Avenue bridge is dangerous.
- East Boston is burdened with traffic congestion and air pollution from airport-generated traffic. Construction of a truck route on the railroad bed under Bennington Street, improvements at the intersection of Bennington Street and Saratoga Street, and a grade-separated interchange for traffic traveling between Route 1A and Boardman Street could help to reduce the burden.
- People placed by the Department of Transitional Assistance in the Townline Inn on Broadway in Malden have to walk where there are no sidewalks.

Transit Service Issues

The issues raised about transit service included concerns about service frequency (especially during off-peak periods), service coverage, travel times, and system connectivity. Two populations were regularly cited as having their mobility limited by the inadequacy of the existing transit service: elderly people and transit-dependent people who work nontraditional hours. Concerns about fare equity, the condition of vehicles and facilities, and system access were also expressed.

- Service on the Fairmount Line is inadequate. More frequent service is needed during evenings and weekends and to Readville (for access to industrial jobs), more stops are needed, and on-time performance needs to be improved.
- Some MBTA bus drivers are not able to inform passengers about which stop to use for their destinations. MBTA drivers should be trained to know which stops to use for common destinations on their route.
- MBTA Route 10 and Route 43 buses are slow.
- Transit service from the South End to South Bay Mall is limited.
- Some areas have little or no transit service, which is a burden to people who are transit dependent.
- Intermodal connections are often difficult.
- Clients of the Department of Transitional Assistance do not have the transportation they need to meet program requirements.
- Public transit for elderly people is limited. Elderly people find using the MBTA bus system cumbersome. More shelters are needed, and schedule information should be posted at all stops. Safety improvements are needed at some stops, including location, access (crossings), and proper snow removal.
- Some bus stop locations are difficult to access, especially for elderly people and people with disabilities. Crossings at bus stops should be safe. Near-side stops are better for passengers.

- Existing transit service in some low-income areas and in some minority areas does not meet the needs of residents of low-income and senior housing.
- Existing transit service does not meet all of the needs of some businesses (either service is too far or the schedule is inappropriate). Access to jobs at retail centers is limited.
- It is difficult to use the transit system during periods when the headways are long. Long off-peak headways make it difficult for people who work nontraditional hours to use transit to commute to work.
- Fares to Fairmount Station seem overpriced.
- Most trips to locations other than downtown Boston require residents to travel first into Boston and then out to their destination. Circumferential transit service is needed in order to connect the rail corridors so that people can travel between corridors without going first into downtown Boston and then back out.
- Some members of the community have difficulty reading and understanding the bus schedules.
- Vehicle cleanliness is important to riders.
- The Red Line–Blue Line Connector and extension of the Blue Line to Lynn would benefit environmental-justice populations by reducing the number of transfers required to make trips to employment in Cambridge. It would also allow for direct access to both employment opportunities and health care at Massachusetts General Hospital.
- Parked cars or piles of snow frequently block the Silver Line dedicated bus lanes.

Transit Facility Issues

Comments were made about the need to improve the condition of some transit facilities, the burden of some transit facilities on communities, and the disruptive impact of construction and related development.

- Some transit facilities (including bus stops) need both physical and safety improvements. More bus shelters are needed, and the existing ones need to be better maintained.
- The Arborway Yard is a burden to the community, and any development that takes place must be environmentally safe for community use. Trains idling at Readville Yard are an environmental burden.
- Residents of West Medford will be burdened by the construction of the Green Line extension and consequent development that will disrupt the [low-income and/or minority] community and displace some of its residents (due to both the construction and gentrification).
- Communities are interested in transit-oriented development, but are concerned about keeping housing affordable.

THE RIDE

Most of the comments concerning THE RIDE pertained to service reliability and potential improvements in efficiency.

- Not all people are aware of the accessibility of the MBTA, the range of services provided, or even the existence of THE RIDE.
- The communications and scheduling systems of THE RIDE need to be improved, and THE RIDE is often late and sometimes does not show up to pick up a passenger. THE RIDE service is limited both geographically and temporally. Reliability and customer relations of THE RIDE, the MBTA, and other transit services across the state are not consistent. Sometimes the vehicle providing the service is not appropriate (e.g., an accessible van is used when a standard vehicle would suffice).
- Improvements could be made for both the providers and the riders of the various forms of human-services transportation through coordination. Service efficiency could be improved and redundant trips eliminated by changing eligibility requirements (e.g., changing the eligibility requirements of disability-based services to include elderly people). Riders who currently have to make several calls to the various providers would benefit greatly from a coordinated call center and coordinated service provision. Transportation providers could save money if they coordinated with each other in order to make joint purchases.

Other

- The MPO's monthly transportation newsletter, *TRANSREPORT*, should be available at regional transit stations, and summaries of it should be published in local newspapers to make the public aware of transportation news for metropolitan Boston.
- Everett and Medford are interested in walkable communities. Everett has established a program, "Everett Walks and Talks," that includes a walkable community planning component. In Medford, walkability is an issue addressed by the Environmental Task Force of Medford Health Matters.
- Parking restrictions at bus stops and in bus lanes need to be enforced.
- The public process needs accountability and needs to be included early in the design phase of a project. If the public process does not begin early in the planning process, it is not effective; you get the same results as if there were no public participation.

AD/ad

Encl.: Regional Equity – Matrix of Issues and Follow-Up
Summary of Move Massachusetts Membership Meeting, January 16, 2009

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up
			Service/ Maintenance	Capital	Studies	Other	
Lynn Economic Opportunity, Lynn <i>Interviewed February 21, 2008</i>	Lack of public transportation to employment opportunities limits the ability of people to work.	Better transit coverage to destinations north and west of Lynn.	X		X		<i>Inform MPO (UPWP) & refer to MBTA Service Planning</i>
		Transit access to employment opportunities around 128, along Route 1, and in other North Shore communities.	X		X		<i>Inform MPO (UPWP) & refer to MBTA Service Planning</i>
		Transportation for day-labor jobs.			X		<i>Inform MPO (UPWP)</i>
	Commuting to Boston is time-consuming and expensive (Commuter rail is infrequent and use of the Blue line usually requires two transfers).	Extension of the Blue Line to Lynn. <i>Project currently moving forward in DEIS to be filed by EOTPW.</i>		X			<i>Inform MPO & refer to MBTA Planning & Development & EOTPW</i>
		Increased off-peak frequency on commuter rail.	X				<i>Refer to MBTA Service Planning</i>
	Some of the low-income residents can not afford transit fares.	Discount tickets for clients of social service agencies who are too poor to afford transit fares for necessary trips.			X	X	<i>Inform MPO (UPWP) & refer to MBTA Planning & Development</i>
	There is no transit service to the Department of Transitional Assistance in Salem.	Transit service to the Department of Transitional Assistance office in Salem. <i>Routes 455 and 459 travel between Central Square, Lynn and the DTA office.</i>				X	<i>Inform MPO (TDM) & refer to MBTA Customer Care</i>
	Transit-dependent Lynn residents have no ability to travel west and limited ability to travel north.	Better transit coverage to destinations north and west of Lynn.	X		X		<i>Inform MPO (UPWP) & refer to MBTA Service Planning</i>
Lynn Community Minority Cultural Center, Lynn <i>Interviewed February 8, 2008</i>	Residents need reliable, low-cost transportation to link them with Boston, Cambridge, Lowell, Methuen, Andover, Danvers, the North Shore and other areas of economic growth.	Transit service to employment opportunities in the North Shore, Lowell, Methuen, Andover, Danvers, and Cambridge.	X		X		<i>Inform MPO (UPWP) & refer to MBTA Service Planning</i>
		Fare reductions for poorest residents.			X	X	<i>Inform MPO (UPWP) & refer to MBTA Planning & Development</i>
	Commuter rail service is infrequent (especially during the off-peak), and the station is dark, dirty, and in poor condition.	Improve condition of and maintain commuter rail station.	X				<i>Refer to MBTA Service Planning</i>
		Extension of the Blue Line to Lynn. <i>Project currently moving forward in DEIS to be filed by EOTPW.</i>		X			<i>Inform MPO & refer to MBTA Planning & Development & EOTPW</i>
	Lack of regional bus service between Lynn and the Danvers campus of North Shore Community College, between the three North Shore Community College campuses (Beverly, Danvers, and Lynn), and UMass Lowell limits the ability of students to attend.	Regional bus service to include service between Lynn and the Danvers campus of North Shore Community College as well as between the North Shore Community College campuses (Beverly, Danvers, and Lynn), and UMass Lowell.	X				<i>Inform MPO (Suburban Mobility) & refer to MBTA Service Planning</i>
	There are congestion and safety issues on Route 129 East at the exit from Route 1 North (Goodwin Circle).	Study alternatives to improve traffic flow. (MPO studied other parts of Route 129 (Lynnfield Square) and Route 1 in Mid-North Shore Regional Transportation study).			X		<i>Inform MPO & refer to City of Lynn & Town of Lynnfield</i>
Lynn Housing Authority, Lynn <i>Interviewed February 25, 2008</i>	Public transportation has limited ability to meet the needs of elderly and handicapped who have limited mobility.	Affordable (for the poor) transit service which can accommodate the needs of the elderly and disabled (paratransit).	X				<i>Inform MPO & refer to MBTA OTA</i>
		Shuttle service to Market Basket and Wal-Mart in Danvers.				X	<i>Inform MPO (TDM) & refer to MBTA Customer Care</i>

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up	
			Service/Maintenance	Capital	Studies	Other		
		Need to improve the reliability and availability of THE RIDE.	X				<i>Refer to MBTA OTA</i>	
Lynn Housing Authority, cont'd	Transit dependent residents have difficulty making shopping, errand, and social trips.	Intra-city bus service (similar to the old East-West Loop).				X	<i>Inform MPO (TDM) & refer to MBTA Customer Care</i>	
	Regional traffic flow from Federal Street is a burden around the Common.	Study traffic flow around the Common in general and the traffic flow from Federal Street to South Common Street to Commercial Street, particularly at the intersection of South Common and Commercial.			X		<i>Inform MPO (UPWP) & refer to City of Lynn</i>	
	THE RIDE service is not appropriate for all trips.	Transportation service for sick visits to physicians and return trips from cancer treatments, hospitalization, and other health services where the patient needs direct transport home.				X	<i>Inform MPO & refer to MBTA OTA</i>	
Lynn Multidisciplinary Team, Lynn <i>Received Responses February 28 and 29, 2008</i>	Existing transit services, including THE RIDE, do not meet all the transportation needs of elderly and disabled who are transit dependent.	Service to accommodate the needs of elderly and disabled who can not use public transportation (e.g., the bus stop is too far) and are not eligible for THE RIDE.	X		X		<i>Inform MPO & refer to MBTA OTA</i>	
		Accessible buses. <i>All MBTA buses are accessible.</i>				X	<i>Refer to MBTA OTA & Customer Care</i>	
		Accessible, user friendly, smaller vehicles for elderly.		X				<i>Inform MPO & refer to MBTA OTA</i>
		Improved reliability of THE RIDE.	X					<i>Refer to MBTA OTA</i>
		Funding for Councils on Aging to purchase or contract for transportation services.					X	<i>Inform MPO & refer to EOTPW</i>
		Accessible transportation for trips to stores, malls, and entertainment centers.	X					<i>Inform MPO & refer to MBTA Service Planning & OTA</i>
		Shelters and benches at bus stops.			X			<i>Refer to MBTA Operations</i>
	Transit service is focused on trips to Boston; traveling elsewhere requires travel first into Boston and then out to the destination and often requires several transfers.	More direct service to other communities, including Peabody and Chelsea.	X					<i>Inform MPO & refer to MBTA Service Planning</i>
	Transit fares are a burden for low-income residents.	Reduced transit fares for the very low-income.			X	X		<i>Inform MPO (UPWP) & refer to MBTA Planning & Development</i>
	Existing transit services do not meet the needs of all health care-related trips.	Evening service to/from Union Hospital for patients, visitors, and employees.	X					<i>Inform MPO and refer to MBTA Service Planning</i>
		Taxi vouchers for people who are temporarily disabled or have tremendous difficulty using public transportation due to economic or physical condition and do not qualify for PT-1 transportation.					X	<i>Inform MPO & refer to MBTA OTA</i>
		Transportation service for sick visits to physicians and return trips from cancer treatments, hospitalization, and other health services where the patient needs direct transport home.					X	<i>Inform MPO & refer to EOTPW & MBTA OTA</i>
	Van service to and from sites where it is difficult for patients to travel (e.g., Boston hospitals, Lahey Clinic, Lowell Association for the Blind, physician's offices, and Danvers Women's Health).					X	<i>Inform MPO & refer to MBTA OTA</i>	

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up	
			Service/ Maintenance	Capital	Studies	Other		
Everett Department of Community & Economic Development, Everett <i>Interviewed February 27, 2008</i>	Service industry workers need transportation past the hours of public transportation.	Late evening/early morning service to meet the needs of service industry workers.	X				<i>Inform MPO & refer to MBTA Service Planning</i>	
	Public transportation has limited ability to meet the needs of elderly and handicapped who have limited mobility.	Service to accommodate the needs of the elderly, particularly for shopping and medical appointments.	X				<i>Inform MPO & refer to MBTA Service Planning & OTA</i>	
	MBTA maintenance facility is a burden. It occupies a large parcel of land which the city could use for development.					X	<i>Refer to MBTA Planning & Development</i>	
	Bus routes cover all major roadways, but service hours are limited.	Longer service hours.	X				<i>Refer to MBTA Service Planning</i>	
	Many bus stops do not have shelters. This is a burden, particularly in foul weather.	Shelters at bus stops.		X			<i>Refer to MBTA Operations</i>	
	Commuter rail passes through Everett and does not stop.	Commuter rail stop (at Gateway Center).			X	X	<i>Refer to MBTA Planning & Development & Service Planning</i>	
	Absence of map and schedule displays at bus stops limits ridership, particularly those with limited English proficiency.	Map and schedule displays at stops.	X	X			<i>Refer to MBTA Planning & Development & Office of Diversity & Civil Rights</i>	
	Transit to employment destinations other than Boston is limited and cumbersome.	Urban Ring. <i>EOTPW is in process of conducting DEIR/EIS for Urban Ring Phase 2 bus rapid transit service.</i>				X		<i>Inform MPO & refer to EOTPW and MBTA Planning & Development</i>
		Service to Kenmore Square and Longwood Medical Area.		X				<i>Inform MPO & refer to MBTA Service Planning</i>
	Increased traffic over Alford Street bridge and through Everett since Tobin toll increase and truck traffic on Route 99.	Assess traffic impacts of toll increase and conduct reconnaissance of traffic in the area.				X		<i>Inform MPO (UPWP) & refer to City of Boston and MASSPORT</i>
Revere Community Development Department, Revere <i>Interviewed February 19, 2008</i>	Development at Wonderland Station is removing parking, and MBTA overflow parking on local streets is a burden.	Parking garage at Wonderland and more parking at all stations.				X	<i>Refer to MBTA Planning & Development</i>	
	Traffic congestion from regional traffic is a burden.	By-pass connectors between Routes 1A and 16 and Routes 16 and 1. <i>Examined in MPO's Lower North Shore Transportation Improvements Study.</i>		X		X	<i>Inform MPO & refer to City of Revere</i>	
		Improve traffic flow through Routes 60 and 1A rotaries. <i>Examined in MPO's Lower North Shore Transportation Improvements Study.</i>		X		X	<i>Inform MPO & refer to City of Revere</i>	
		Widen Route 1 from Copeland Circle to Route 16. <i>Examined in MPO's Lower North Shore Transportation Improvements Study.</i>		X		X	<i>Inform MPO & refer to City of Revere & Mass Highway</i>	
	A commuter rail stop at Wonderland would increase mobility.	Commuter rail stop connecting with Wonderland Station. <i>Examined in MPO's Lower North Shore Transportation Improvements Study and Blue Line Extension Study.</i>		X			<i>Refer to MBTA Planning & Development & EOTPW</i>	

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up	
			Service/ Maintenance	Capital	Studies	Other		
Revere Community Development Department, cont'd	There is no safe bicycle route between Revere and Boston.	Study safe bicycle route between Boston and Revere Beach. Examined in MPO's Lower North Shore Transportation Improvements Study.		X		X	Inform MPO & refer to cities of Boston & Revere	
Revere Housing Authority, Revere <i>Received Response February 15, 2008</i>	No transportation issues; all developments are located on bus lines and/or within walking distance of rapid transit.	None identified.				X	Inform MPO & MBTA Service Planning	
Peabody Office of Community Development and Planning, Peabody <i>Received Response March 24, 2008</i>	Peabody has little transit service (only limited bus service) and this is a burden for low-income households.	Passenger service (light rail line) on the spur from Peabody Square to Salem Depot.	X				Inform MPO & refer to MBTA Service Planning	
		Direct transit service to Boston, Cape Ann, the North Shore, Centennial Park, Lahey Clinic, Northshore Mall, downtown Peabody, medical offices, and supermarkets.	X			X	Inform MPO (Suburban Mobility) & refer to MBTA Customer Care	
	Peabody suffers from congestion due to limited public transport options and regional cut-through traffic, including a disproportionate amount of truck traffic. This creates safety concerns and stifles pedestrian activity downtown, where the highest concentration of the environmental justice population lives.	Traffic calming downtown, on Main Street, around Peabody Square. (Project currently under development)			X		Inform MPO	
John F. Kennedy Family Service Center, Charlestown <i>Interviewed March 27, 2008</i>	Bus drivers lack knowledge about which stop to use for destinations.	Provide driver training.	X				Refer to MBTA Customer Care	
Inquilinos Boricuas En Acción, South End <i>Interviewed April 17, 2008</i>	MBTA Route 10 and Route 43 buses are slow.		X				Refer to MBTA Service Planning	
	THE RIDE is often late and sometimes does not show.	Improve the reliability and punctuality of THE RIDE.	X				Refer to MBTA OTA	
	Transit service to South Bay Mall is limited.	Improve transit service to South Bay Mall.	X				Inform MPO & refer to MBTA Service Planning	
	Residents are pleased with the Silver Line.		X				Refer to Boston Transportation Department, MBTA, & EOTPW	
	Elderly residents find using the MBTA bus system cumbersome.	Provide shelters and schedule information at the bus stops on Tremont Street.			X			Refer to MBTA Planning and City of Boston and inform MPO
		Provide a shuttle service for the elderly to Back Bay Station.		X			X	Inform MPO & refer to MBTA Service Planning
		Improve safety at the bus (43) stop at the corner of Tremont and West Dedham streets (particularly when snowy).		X			X	Inform MPO & refer to Boston Transportation Department and MBTA Service Planning
	Crossing some streets in the area is dangerous, particularly for elderly people, and some streets need improvement.	Provide a second pedestrian crossing on West Dedham Street (on the opposite side of the tower, where many elderly people live).				X		Refer to Boston Transportation Department & EOTPW/MassHighway Planning

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up
			Service/ Maintenance	Capital	Studies	Other	
Inquilinos Boricuas En Acción, cont'd		Enforce speed limit and provide better signage on West Dedham Street.		X		X	Refer to Boston Transportation Department & EOTPW/MassHighway Planning
		Improve Albany Street and the safety of crossing it.		X	X		Inform MPO & refer to Boston Transportation Department & EOTPW/MassHighway Planning
		Improve Massachusetts Avenue for safety (lighting, better signage, and improved safety of crossings). <i>Massachusetts Avenue improvements are programmed for construction in FFY 2008.</i>				X	Inform MPO, Boston Transportation Department, & EOTPW/MassHighway Planning
		Provide more handicapped parking near the building and streamline the process for getting handicapped parking.				X	Inform MPO & refer to Boston Transportation Department & EOTPW/MassHighway Planning
		The area will benefit from South Bay Harbor Trail. <i>Proposed for programming for construction in the 2010 element of the 2008-2012 TIP.</i>	Construct the trail with safe access from the South End.		X		
Jamaica Plain Neighborhood Development, Jamaica Plain <i>Interviewed May 8, 2008</i>	The Arborway yards are a burden and any development that takes place must be environmentally safe for community use.	<i>MBTA and City of Boston are engaged in ongoing conversation to provide good project design.</i>				X	Inform MPO & refer to MBTA Planning and Development
	Community is very interested in transit-oriented development around the Orange Line stations, but wants to keep housing affordable.					X	Inform MPO & refer to MBTA Planning and Development
Southwest Boston Community Development Corporation, Hyde Park <i>Interviewed May 21, 2008</i>	Transit service in the area is inadequate.	Provide more frequent service and late night and weekend service on the Fairmount Line. <i>MBTA & EOTPW are reviewing service options and discussing in consideration of budget review.</i>	X				Inform MPO & refer to MBTA
		Improve on-time performance on the Fairmount Line. <i>Fairmount Line improvements are under design & construction.</i>	X				Refer to MBTA
		Increase service to Readville for access to industrial jobs.	X				Refer to MBTA Service Planning
		Provide more stops on the Fairmount Line. <i>Fairmount Line improvements are under design & construction.</i>		X		X	Inform MPO & MBTA Planning and Development
		Transit facilities need both physical and safety improvements.	Improve conditions at bus stops and waiting areas.	X			
		Improve the Fairmount and Hyde Park stations. <i>Fairmount Line improvements are under design & construction.</i>		X			Inform MPO & MBTA Planning and Development

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up	
			Service/ Maintenance	Capital	Studies	Other		
		Provide more transit police on the buses and at the waiting areas (bus stops and train stations).	X				<i>Refer to MBTA and City of Boston Police</i>	
Southwest Boston Community Development Corporation, cont'd	Train fares to Fairmount Station seem inequitable.	Reduce the fare to Fairmount Station.	X				<i>Inform MPO & refer to MBTA Planning and Development</i>	
	The Fairmount Avenue bridge is dangerous.	Improve the maintenance of the Fairmount Avenue Bridge.	X				<i>Inform MPO (UPWP) & refer to MBTA Planning & Development</i>	
	Trains idling at the Readville Yards are an environmental burden.		X				<i>Inform MPO & refer to MBTA Planning & Development</i>	
East Boston Community Development Corporation, East Boston <i>Interviewed May 5, 2008</i>	Many transit trips require too many transfers.	Connect the Blue Line to the Red Line at Charles/MGH Station. <i>Project design & DEIR to begin Fall 2008.</i>		X		X	<i>Inform MPO, MBTA Planning & Development, and EOTPW</i>	
		Extend the Blue Line to Lynn. <i>Project currently moving forward in DEIS to be filed by EOTPW.</i>		X		X	<i>Inform MPO & EOTPW & refer to MBTA Planning & Development</i>	
	East Boston experiences a lot of traffic congestion and air pollution from airport-generated traffic.	Construct a truck route on the railroad bed under Bennington Street.		X		X		<i>Inform MPO and refer to City of Boston Transportation Department</i>
		Improve the intersection of Bennington Road and Saratoga Street.		X		X		<i>Inform MPO and refer to City of Boston Transportation Department</i>
		Construct a grade-separated interchange for traffic traveling between Route 1A and Boardman Street.		X		X		<i>Inform MPO and refer to City of Boston Transportation Department</i>
	Chelsea Street Bridge replacement is needed, but will be a burden to the community during construction.						X	<i>Inform MPO and refer to City of Boston Transportation Department</i>
Coordinated Human-Services Transportation Planning Forums, Regionwide <i>June 5 and June 9, 2008</i>	Not all people are aware of the accessibility of the MBTA, the range of services provided, or THE RIDE.	Need to increase awareness of and information about existing services.					X	<i>Refer to MBTA Customer Care and OTA</i>
		Provide a catalog of services by category (e.g., wheelchair-accessible, service area, etc.) in all formats.	X				X	<i>Inform MPO & EOTPW</i>
		Include the Veterans Health Administration in outreach efforts.					X	<i>Inform MPO & staff</i>
	Some areas have no or limited transit service.	Study appropriateness of expanding transit service to geographic areas that have limited or no service.	X		X		X	<i>Inform MPO & refer to MBTA Service Planning</i>

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up
			Service/ Maintenance	Capital	Studies	Other	
	Vehicle cleanliness is important to riders.	Keep vehicles clean.	X				<i>Refer to MBTA</i>
Coordinated Human-Services Transportation Planning Forums cont'd	Reliability and customer relations of THE RIDE, the MBTA, and other transit services across the state are not consistent	Continue to improve reliability and customer relations of THE RIDE and the MBTA.	X				<i>Refer to MBTA Customer Care and OTA</i>
		Provide universal training and uniform accessibility across the state.				X	<i>Inform MPO</i>
	It is difficult and confusing to figure out how to travel using the various providers throughout the state.	Coordinate and brand services to allow for easy recognition of services available, minimize duplication of services, and improve intermodal connections.				X	<i>Inform MPO, MBTA, & EOTPW</i>
	Sometimes the vehicle providing transportation service is not appropriate (e.g., an accessible van is used when a standard vehicle would suffice).	Use appropriate size and capability vehicle.	X				<i>Inform MPO & refer to MBTA Service Planning and OTA</i>
	Intermodal connections are often difficult.	Improve intermodal connections.	X	X			<i>Inform MPO & refer to MBTA Service Planning and OTA</i>
	Existing transit service does not always meet the needs of senior housing, low-income housing, and businesses (either service is too far or schedule is inappropriate).	Better target transit services to locations of and demand at senior housing, low-income housing, and businesses for employment and shopping.	X				<i>Inform MPO & refer to MBTA Service Planning and OTA</i>
	Longer headways discourage people from using transit.	Reduce the longer headways to encourage people to use the service.	X				<i>Inform MPO & refer to MBTA Service Planning</i>
	THE RIDE service is limited geographically and temporally.	Expand the geographic coverage and service hours of THE RIDE.	X				<i>Inform MPO & refer to MBTA Service Planning and OTA</i>
	Access to jobs at retail centers is limited.	Provide more transit services to retail centers for jobs, and include retailers in planning for and coordinating these services.	X				<i>Inform MPO & refer to MBTA Service Planning</i>
	Improvements made in systemwide accessibility have improved mobility.	Keep improving systemwide accessibility.			X		
Continue to purchase low-floor vehicles.					X		<i>Refer to MBTA Planning and Development</i>
There are not enough bus shelters and some are in bad condition.	Improve number and condition of bus shelters.				X		<i>Inform MPO & refer to MBTA Planning and Development</i>

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up	
			Service/ Maintenance	Capital	Studies	Other		
	It is sometimes difficult to schedule THE RIDE.	Improve communication and scheduling systems.	X				<i>Inform MPO & refer to MBTA OTA</i>	
Coordinated Human-Services Transportation Planning Forums cont'd	It is difficult to travel between rail corridors without traveling into Boston and then back out.	Construct a circumferential light rail line connecting rail lines to improve mobility. <i>EOTPW is in process of conducting DEIR/EIS for Urban Ring Phase 2 bus rapid transit service.</i>		X	X		<i>Inform MPO, EOTPW & refer to MBTA Planning and Development</i>	
	It is difficult to board buses when they need to stop away from the curb due to illegally parked cars.	Enforce parking restrictions at bus stops.			X	X	<i>Inform MPO & cities and towns</i>	
	Near-side stops are better for passengers.	Improve locations of shelters and stops.				X	<i>Inform MPO & refer to MBTA Service Planning</i>	
	Existing services could provide service to more people.	Improve service efficiency by changing eligibility requirements (e.g., Council on Aging vehicles could be used to transport people with disabilities as well as elderly people to medical appointments).					X	<i>Inform MPO, OTA, & EOTPW</i>
		Expand the eligibility requirements of disability-based service to include elderly people.					X	<i>Inform MPO & OTA</i>
	Providers might save money if they purchase jointly.	Coordinate providers for joint purchases.					X	<i>Inform MPO & EOTPW</i>
	Riders may have to call several different providers to schedule their trips, depending on trip purpose and eligibility requirements.	Coordinate services through one call center.					X	<i>Inform MPO, EOTPW, & OTA</i>
	The many different sources of human-services transportation funding are not coordinated.	Coordinate human-services transportation funding.					X	<i>Inform MPO & EOTPW</i>
	Clients of the Department of Transitional Assistance (DTA) do not have the transportation they need to meet program requirements.	Provide coordination of transportation service for DTA clients to allow them to meet program requirements.					X	<i>Inform MPO, MBTA, & EOTPW</i>
	Transportation services could be better coordinated through disability commissions in cities and towns.	MPO should coordinate with disability commissions in cities and towns.					X	<i>Inform MPO, EOTPW, & staff</i>
The public is not aware of transportation news.	Publish TRANSREPORT summaries in local newspapers and provide copies of TRANSREPORT at regional transit stations.					X	<i>Inform MPO & staff</i>	
Healthy Malden, Malden <i>Interviewed July 7, 2008</i>	A new family health center may warrant a change in existing bus routes.	Identify route changes to serve the new health center.	X				<i>Refer to MBTA Service Planning</i>	
	Seniors find downtown crossings dangerous and have difficulty accessing the bus stops.	Improve the safety of crossings.		X	X		<i>Inform MPO & refer to the City of Malden</i>	

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up
			Service/ Maintenance	Capital	Studies	Other	
		Review the locations of downtown bus stops.	X				Inform MPO & refer to the City of Malden and MBTA Service Planning
Healthy Malden, cont'd	Senior transportation is limited.					X	Inform MPO and the City of Malden
Tri-City Community Action Program, Malden, Medford, & Everett <i>Interviewed December 9, 2008</i>	Travel between cities and towns on public transit requires going into Boston first and then traveling out again.	Provide circumferential transit to connect cities and towns. <i>EOTPW is in process of conducting DEIR/EIS for Urban Ring Phase 2 bus rapid transit service.</i>			X		Inform MPO & refer to EOTPW and MBTA
	Long off-peak headways on buses during the day and evening make it difficult for people who work non-traditional hours to commute to work.	Increase bus frequency on routes that provide access to jobs with non-traditional work hours.	X				Refer to MBTA Service Planning
	The change in bus routes to go around instead of through Malden Square is a burden to elderly people, people with disabilities, and shoppers.	Return to the old route.	X				Refer to MBTA Service Planning and City of Malden
	Improvements made in systemwide accessibility have improved mobility.	Keep improving systemwide accessibility.		X			Inform MPO & refer to MBTA Planning and Development
	The pedestrian phase of the signal at Main and Salem Streets conflicts with turning traffic.	Change the signal phasing.	X				Refer to City of Malden
	Everett and Medford are interested in Walkable Communities.	The MPO is available to coordinate it's Walkable Communities Workshops program with Everett and Medford.				X	Inform MPO & staff
	People placed in the Townline Inn on Broadway (Route 99) by the Department of Transitional Assistance have to walk where there are no sidewalks.			X	X	X	Inform MPO & City of Malden
	Residents of West Medford will be burdened by the construction of the Green Line extension and consequent development that will disrupt the (low-income and/or minority) community and displace some of it's residents (due to both the construction and gentrification).	Consider the impact of the Green Line extension on West Medford residents, and try to mitigate negative impacts.				X	Inform MPO, EOTPW and MBTA Planning and Development
Some members of the community have difficulty reading and understanding the bus schedules.	Provide schedules in alternative languages and formats.	X			X	Inform MBTA Planning and Development	
Milford WIC, Milford <i>Interviewed January 18, 2009</i>	The only public transportation available in Milford is the limited-service MetroWest bus route.	Public transportation between towns for jobs and medical appointments.	X		X		Inform MPO and Town of Milford
Milford Planning and Engineering Department, Milford <i>Interviewed January 18, 2009</i>	The only public transportation available in Milford is the limited-service MetroWest bus route.	Public transportation service both within Milford and between towns.	X		X		Inform MPO and Town of Milford
	Access to jobs in Milford, which is an employment center for the subregion, is limited.	Extend the Franklin commuter rail line to Milford.	X	X	X		Inform MPO, MBTA Planning and Development, and Town of Milford
Waltham Transportation and Parking Department, Waltham <i>Interviewed March 17, 2009</i>	Waltham is well-served by the MBTA.					X	Inform MPO and MBTA Service Planning

Regional Equity - Matrix of Issues and Follow-Up

Organization	Reported Issue	Needs/Suggestions	Category				Proposed Follow-up
			Service/Maintenance	Capital	Studies	Other	
128 Business Council, Waltham <i>Interviewed March 20, 2009</i>	Transit service to Riverside, Belmont/Waverly Square, and Winter Street is inadequate.	Provide transit service to Riverside.	X				<i>Inform MPO and MBTA Service Planning</i>
128 Business Council, cont'd		Increase the frequency of bus service to Waverly Square.	X				<i>Inform MPO and MBTA Service Planning</i>
		Provide transit service to Winter Street to meet the needs of service industry workers.	X				<i>Inform MPO and MBTA Service Planning</i>
	Transit service schedules do not meet the needs of service industry workers.	Increase the frequency of weekend service.	X				<i>Inform MPO and MBTA Service Planning</i>
		Increase early morning and late evening bus service.	X				<i>Inform MPO and MBTA Service Planning</i>
Randolph Housing Authority, Randolph <i>Interviewed March 23, 2009</i>	Most resident's transportation needs are met by the MBTA bus service or the Council on Aging van. The only unmet need is for some medical appointments.	Provide service for medical appointments.	X				<i>Inform MPO and MBTA OTA</i>
Randolph Community Partnership, Randolph <i>Interviewed March 25, 2009</i>	Some parts of Randolph are not served by existing bus routes.	Modify bus routes to provide service to neighborhoods that are not served by existing routes.	X				<i>Inform MPO and MBTA Service Planning</i>

ALEWIFE STUDY

Traffic Operations and Bus Access and Egress at the Route 2/Route 16 Intersection



Traffic Operations at the Route 2/Route 16 Intersection

- ➔ **Alewife Working Group**
- ➔ **Problems**
- ➔ **Analysis and Evaluation**
- ➔ **Recommendations**
- ➔ **Next Steps**

Alewife Working Group



- ⇒ Department of Conservation and Recreation (DCR)
- ⇒ Massachusetts Highway Department
- ⇒ Massachusetts Bay Transportation Authority
- ⇒ Massachusetts State Police
- ⇒ Cambridge Traffic and Parking, Cambridge Police, Cambridge Chamber of Commerce
- ⇒ Boston Region MPO
- ⇒ Wyeth Corporation
- ⇒ Jones Lang LaSalle
- ⇒ Senator Tolman's office
- ⇒ Representative William Brownsberger

Problems

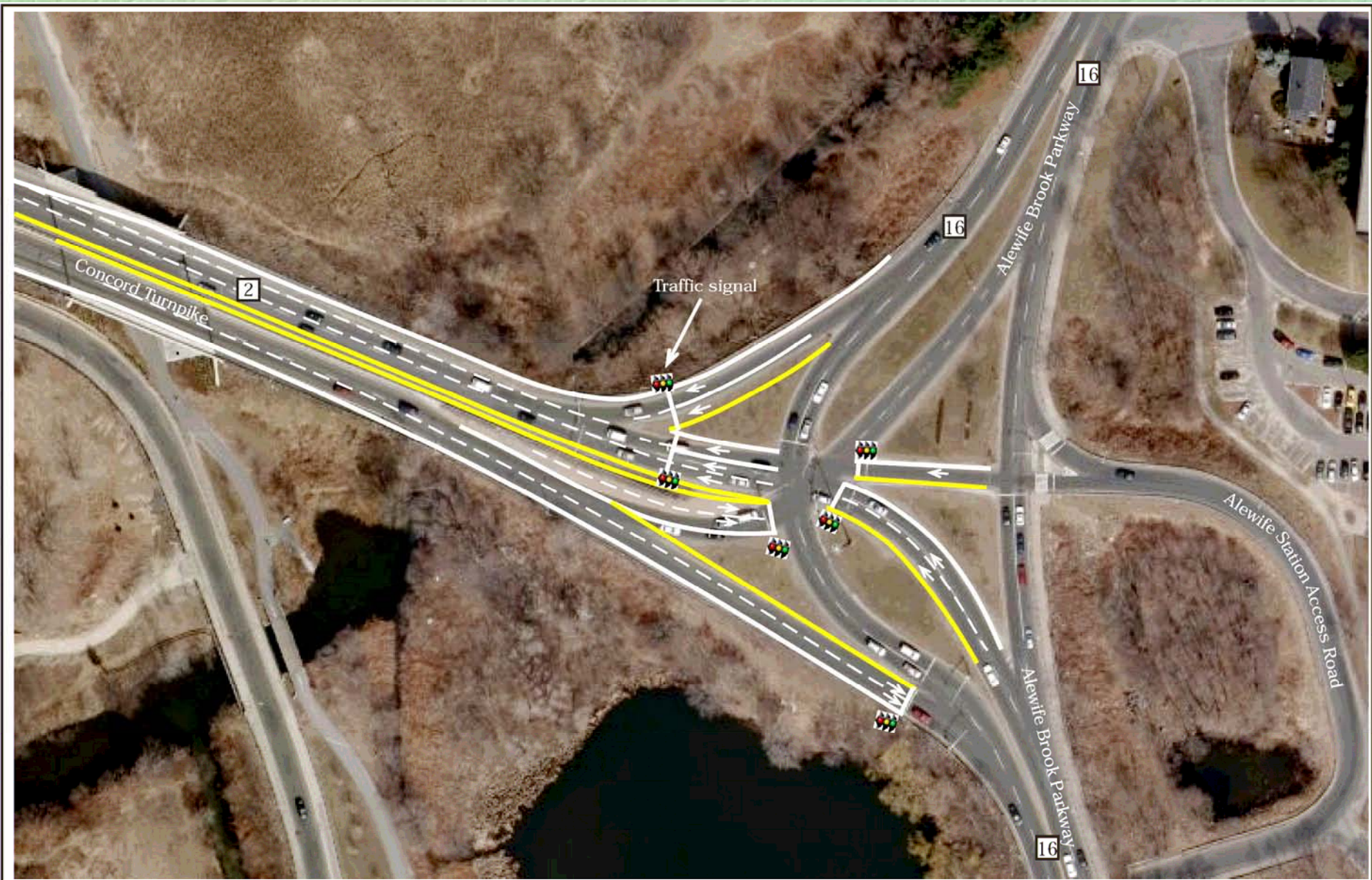
- ⇒ **Traffic congestion**
- ⇒ **Insufficient capacity**
- ⇒ **Traffic merging due to inconsistent lane configurations**
- ⇒ **Traffic diversion**
- ⇒ **Bus access and egress problems at the Alewife MBTA station**

Analysis and Evaluations

- ⇒ Analyzed existing conditions at the Route 2/Route 16 intersection and other intersections in the vicinity**
- ⇒ Evaluated 8 options for Route 2/Route 16 intersection**
- ⇒ Dealt with bus access and egress at the Alewife MBTA station**
- ⇒ Made recommendations for improvements.**

Recommendations

- ➔ **Add a third westbound lane for a short distance between the Alewife Station Access Road approach (jug-handle) and the Minuteman Bike Path overpass**
- ➔ **Reconstruct the Route 2 eastbound left-turn lane to Route 16 north into a double left-turn lane**
- ➔ **Reconstruct the Alewife Station Access Road (jug-handle) into two lanes for as far back as possible.**
- ➔ **Upgrade traffic signal design including new equipment for demand-responsive operation and detectors/sensors for bus priority**



Recommended Improvements

Next Steps

- ➔ **Multiple Stakeholders (DCR, MassHighway, City of Cambridge, and Town of Arlington**
- ➔ **Opportunities for regional programming or MassHighway/DCR implementing improvements**

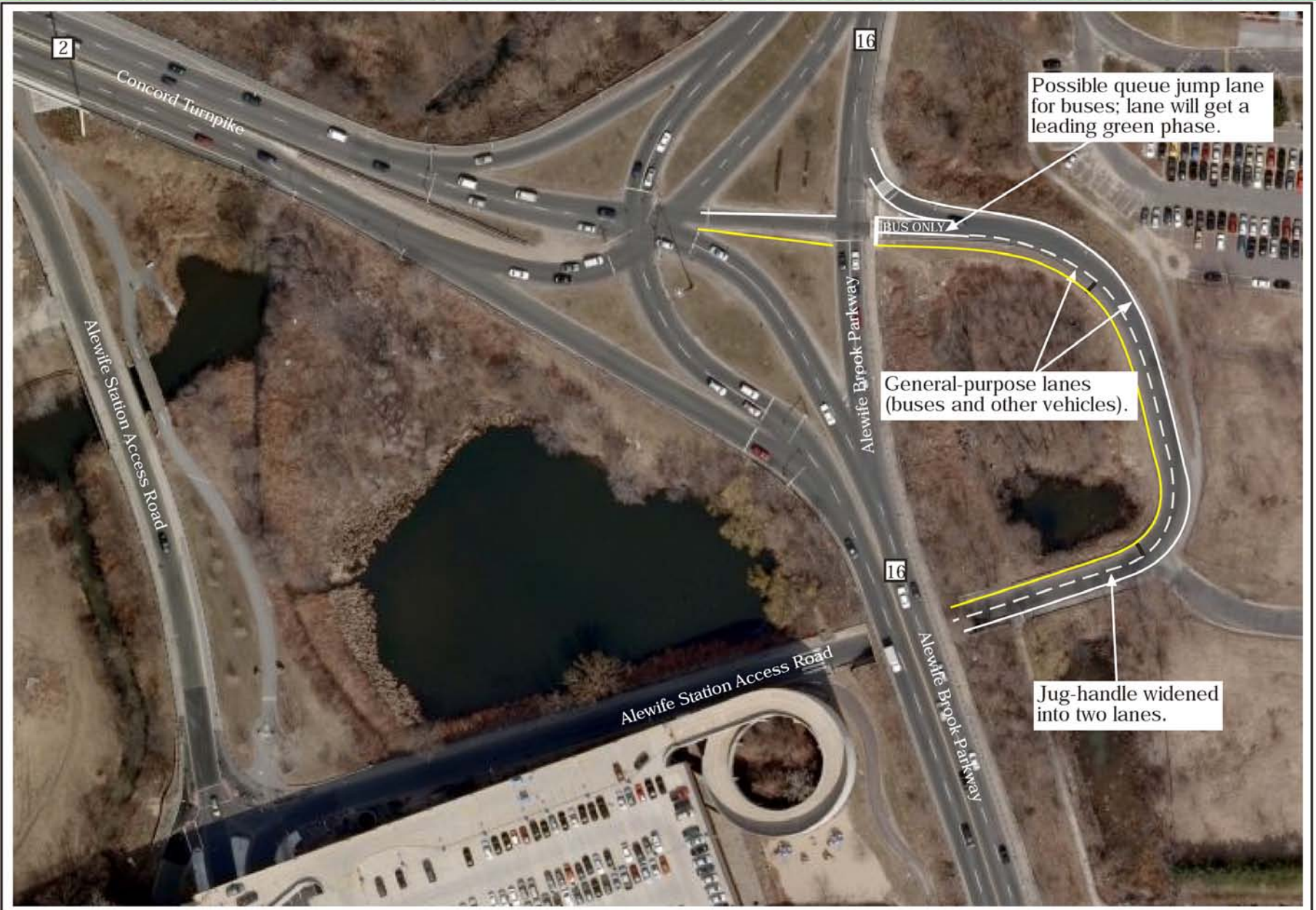
Alewife Study
Bus Access and Egress

Improving Access from the West (Route 2 Eastbound)

- ⇒ Improve the Route 2/Route 16 intersection so that the queue from the eastbound traffic does not block the entrance to the ramp**
- ⇒ Provide priority entrance to the off-ramp for MBTA buses only**
- ⇒ Allow buses to use Acorn Park Road**

Improving Egress to Route 2 WB and Route 16 NB

- ⇒ Install a new Route 2 westbound on-ramp**
- ⇒ Widen Alewife Station Access Road (Jug-handle)**
- ⇒ Bus-Only Lane and General-Purpose Lane**
- ⇒ Bus Signal Priority System**
- ⇒ Queue Jumping**



Widen Alewife Station Access Road to Two Lanes

Bus Service Improvement Options

- ⇒ Consider modifying the spacing of stops on some or all of the bus routes in the study area**
- ⇒ Explore the possibility of rerouting Route 67 within Arlington**
- ⇒ Explore the feasibility of reinstating the extension of Route 67 into Lexington**

Bus Service Improvement Options

- ⇒ Consider coordinating LEXPRESS and MBTA services**
- ⇒ Under the Boston Region MPO's Suburban Mobility Program, the Town of Lexington could apply for funds for a peak period shuttle to Alewife. If the shuttle were to prove that there is sufficient demand, perhaps the MBTA could offer service.**

Alewife Bicycle and Pedestrian Access Study

DRAFT



May 2009

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 Belmont St to the south.

INSERT STUDY AREA MAP

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.

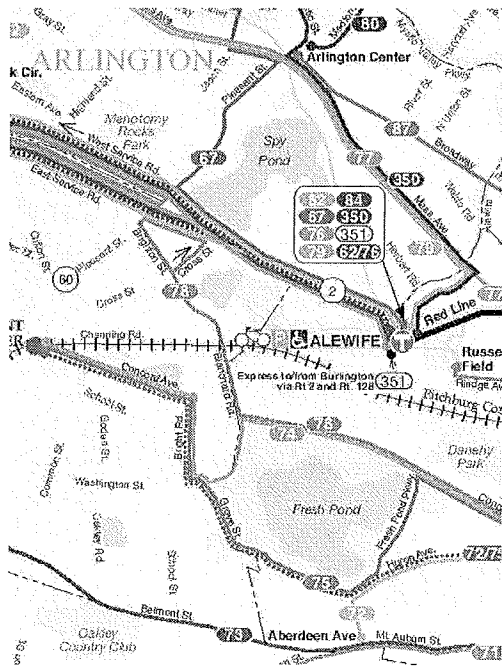


Figure 1 MBTA Routes at Alewife Station

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

Bicycle Cages - 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

Wayfinding - 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

Belmont-Cambridge-Somerville Path project - 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 end of the Somerville Bicycle 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.

DCR

Existing

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

Planned

Minuteman to Mystic River Paths - Two trails are at 100% 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 6-8 ft asphalt –shared use path is planned. 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.

Watertown Branch Path - 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.

Mass Central - Described in the MHD project description above. DCR will take over control of the trail between Brighton St and Alewife on completion of reconstruction.

Alewife Reservation - 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

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

Large Scale Developments - There are several large scale residential and commercial projects within 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 be 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

None

Proposed

The Belmont Citizens Forum purchased 3560 ft of 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.

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.

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.

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.

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

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

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 Medford.

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 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.

Recommendation – 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. *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.

Recommendation – 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)*

Recommendation – 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)*

Recommendation – 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)*

Recommendation – 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. *Responsibility – Cambridge*

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)*

Recommendation – 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)*

Recommendation – 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)*

Recommendation - 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)

Recommendation – 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)

Recommendation – 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)

Recommendation – 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)

Recommendation – 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)

Recommendation – 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-of-way. 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.

Recommendation – 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.

Recommendation – 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)

Recommendation – 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

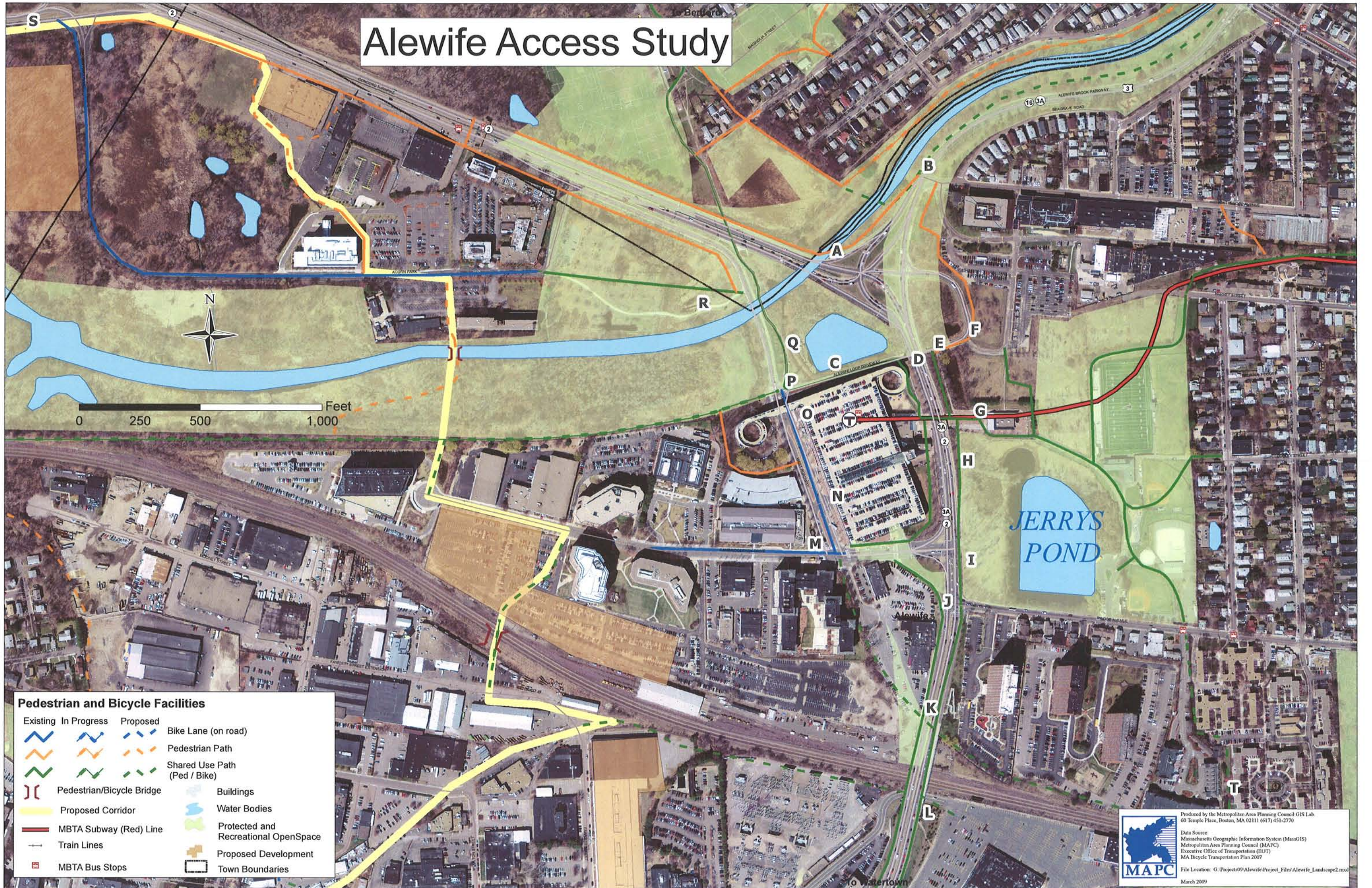
- During the PM peak on Cambridge Park Drive, EB vehicles illegally occupy the bike lane.
Recommendation – Narrow the pavement width to eliminate the possibility of two vehicles side by side at this intersection.
Recommendation – The proposed development at 150-180 Cambridge Park Drive will be required 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.

Alewife Access Study




Pedestrian and Bicycle Facilities

Existing	In Progress	Proposed	
			Bike Lane (on road)
			Pedestrian Path
			Shared Use Path (Ped / Bike)
			Pedestrian/Bicycle Bridge
			Proposed Corridor
			MBTA Subway (Red) Line
			Train Lines
			MBTA Bus Stops
			Buildings
			Water Bodies
			Protected and Recreational OpenSpace
			Proposed Development
			Town Boundaries

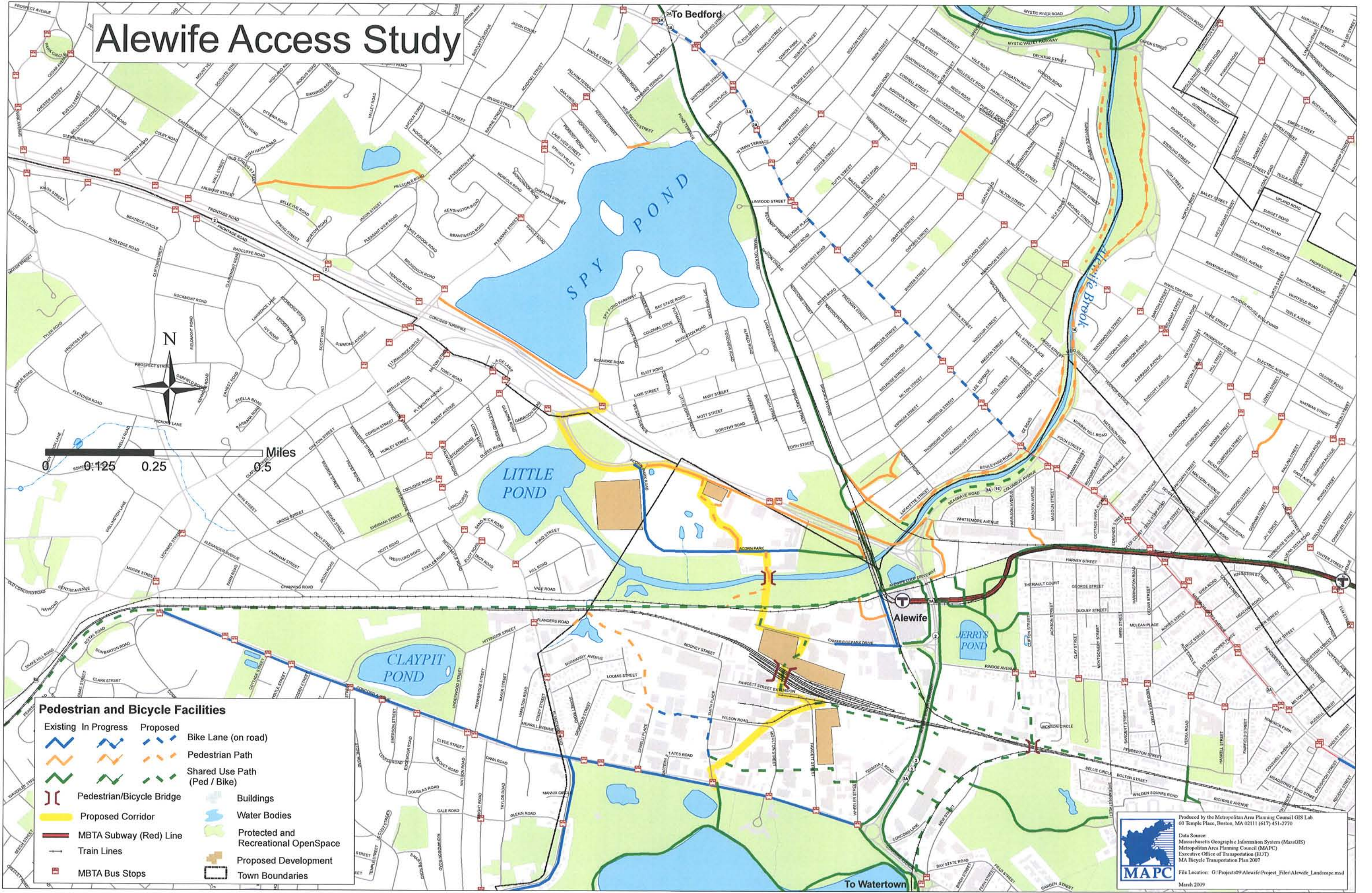
Produced by the Metropolitan Area Planning Council GIS Lab
 60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Source:
 Massachusetts Geographic Information System (MassGIS)
 Metropolitan Area Planning Council (MAPAC)
 Executive Office of Transportation (EOT)
 MA Bicycle Transportation Plan 2007

File Location: G:\Project09\Alewife\Project_Files\Alewife_Landscape2.mxd
 March 2009



Alewife Access Study




Pedestrian and Bicycle Facilities

	Existing		In Progress		Proposed		Bike Lane (on road)	
	Existing		In Progress		Proposed		Pedestrian Path	
	Existing		In Progress		Proposed		Shared Use Path (Ped / Bike)	
								Pedestrian/Bicycle Bridge
								Proposed Corridor
								MBTA Subway (Red) Line
								Train Lines
								MBTA Bus Stops
								Buildings
								Water Bodies
								Protected and Recreational OpenSpace
								Proposed Development
								Town Boundaries

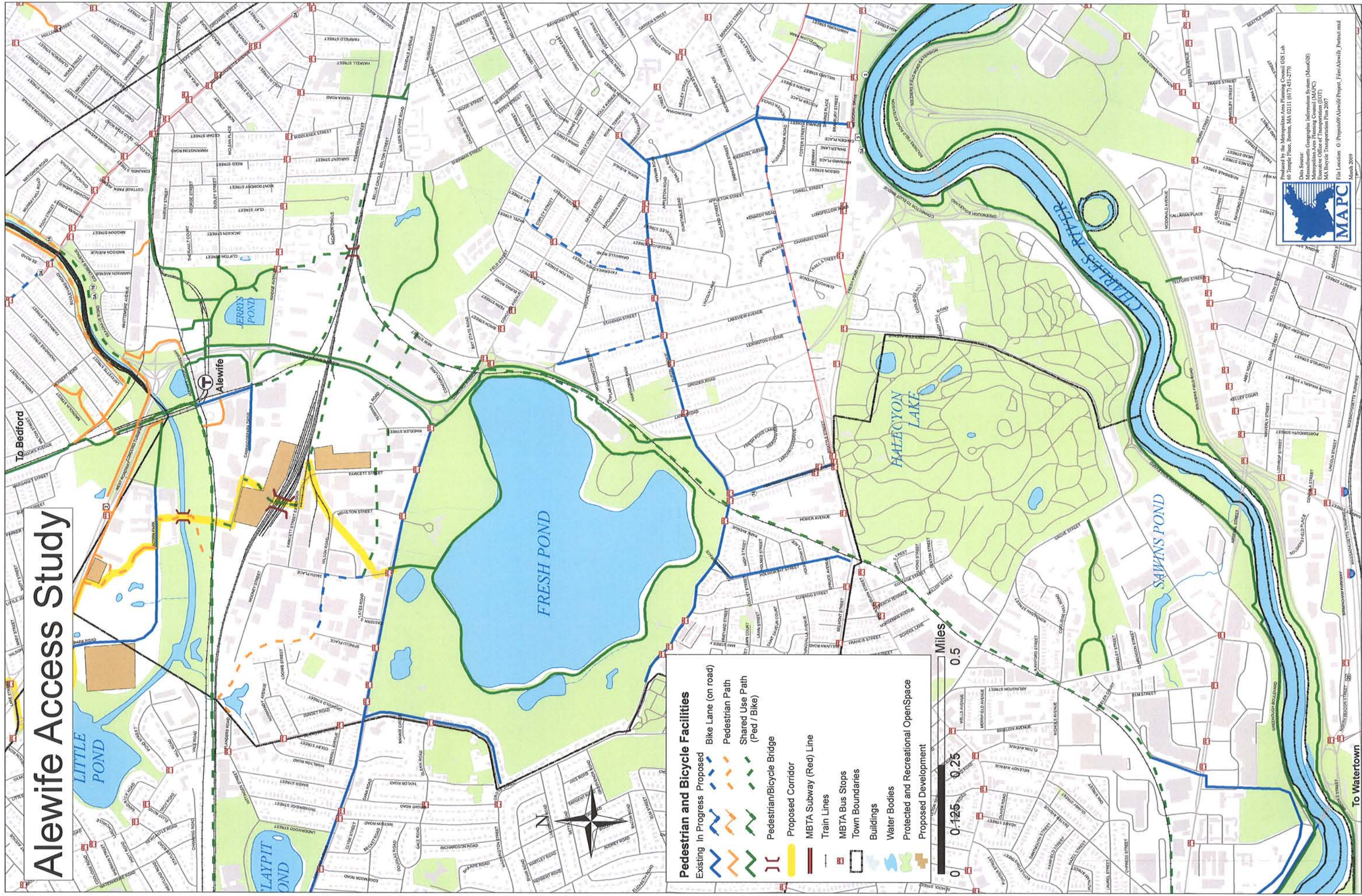
Produced by the Metropolitan Area Planning Council GIS Lab
 60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Source:
 Massachusetts Geographic Information System (MassGIS)
 Metropolitan Area Planning Council (MAPC)
 Executive Office of Transportation (EOT)
 MA Bicycle Transportation Plan 2007

File Location: G:\Projects\09Alewife\Project_Files\Alewife_Landscape.mxd
 March 2009



Alewife Access Study



- Pedestrian and Bicycle Facilities**
- Existing In Progress Proposed
 - Bike Lane (on road)
 - Pedestrian Path
 - Shared Use Path (Ped / Bike)
 - Pedestrian/Bicycle Bridge
 - Proposed Corridor
 - MBTA Subway (Red) Line
 - Train Lines
 - MBTA Bus Stops
 - Town Boundaries
 - Buildings
 - Water Bodies
 - Protected and Recreational OpenSpace
 - Proposed Development



Produced by the Metropolitan Area Planning Council GIS Lab
 40 Temple Place, Boston, MA 02111 (617) 451-2770
 Data Source: Geographic Information System (MapGIS)
 Massachusetts Geographic Information System (MAGIS)
 Executive Office of Transportation (EOT)
 MA Bicycle Transportation Plan 2007
 File Location: G:\Project09\Alewife\Project_Files\Alewife_Portal.mxd
 March 2009

To Bedford

To Watertown

Alewife

FRESH POND

HALLOWAY LAKE

SAWKS POND

CHARLES RIVER

LITTLE POND

LAYPOND



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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James A. Aloisi, Jr.
Secretary of Transportation
and MPO Chairman

Arnold J. Soolman
Director, MPO Staff

The Boston Region MPO,
the federally designated
entity responsible for
transportation decision-
making for the 101 cities
and towns in the MPO
region, is composed of
the following:

Executive Office of Transportation
and Public Works

City of Boston

City of Newton

City of Salem

City of Somerville

Town of Bedford

Town of Framingham

Town of Hopkinton

Metropolitan Area Planning Council

Massachusetts Bay Transportation
Authority Advisory Board

Massachusetts Bay Transportation
Authority

Massachusetts Highway Department

Massachusetts Port Authority

Massachusetts Turnpike Authority

Regional Transportation Advisory
Council (nonvoting)

Federal Highway Administration
(nonvoting)

Federal Transit Administration
(nonvoting)

MEMORANDUM

DATE May 7, 2009
TO Transportation Planning and Programming Committee
of the Boston Region Metropolitan Planning Organization
FROM Arnold J. Soolman, CTPS Director
RE Work Program for: Arterial Traffic Signal Improvements and
Coordination

ACTION REQUIRED

Review and approval

PROPOSED MOTION

That the Transportation Planning and Programming Committee of the Boston Region Metropolitan Planning Organization vote to approve the work program for Arterial Traffic Signal Improvements and Coordination in the form of the draft dated May 7, 2009.

PROJECT IDENTIFICATION

Unified Planning Work Program Classification
Planning Studies

CTPS Project Number
13243

Client
Boston Region Metropolitan Planning Organization

CTPS Project Supervisors
Principal: Efi Pagitsas
Manager: Mark Abbott

Funding
MassHighway 3C PL Highway Planning Contract #56242

IMPACT ON MPO WORK

This is MPO work and will be carried out in conformance with the priorities established by the MPO.

BACKGROUND

This study is one of the recommendations from the MPO's Mobility Management System (MMS).

Traffic signal coordination or synchronization promotes efficient traffic operations along an arterial roadway. Typically, arterial flow quality and efficiency is dictated by the level of service at traffic signals and the degree of coordination between them. As a rule of thumb, traffic signals located within one-quarter of a mile from each other qualify potentially for coordination. Coordination is performed in such a way that traffic platoons along the road where this signal treatment is applied can proceed through intersections at certain speeds without braking or stopping. In coordination, side street traffic and pedestrian volumes must also be considered so that their needs for service through the coordinated intersections are met without extra delays.

The "promotion of efficient system management and operations" is one of the SAFETEA-LU planning factors seeking to integrate this concept in the existing planning process. Side benefits to coordination are enhanced safety: when arterial signal systems are managed and operated efficiently, usually safety improves as well.

This study's purpose is to evaluate three or four groups of arterial signalized intersections from throughout the region and to develop recommendations for improvements focused primarily on traffic signal coordination in order to improve traffic flow and safety along these arterials. As part of the traffic signal coordination strategy, staff will consider geometric improvements and traffic signal design changes at the selected locations. Each group will likely consist of two or three intersections.

OBJECTIVE

This study seeks to accomplish the following objective: to develop recommendations for traffic signal coordination of three or four groups of intersections on arterials in the Boston Region MPO area, for the purpose of potentially improving operations and safety at and between the intersections.

WORK DESCRIPTION

Task 1 Select Intersections

Subtask 1.1 Select Ten Groups of Intersections for Possible Inclusion in the Study

The final set of three to four groups of intersections will be selected from an initial set of ten groups. The set of ten will be selected using a tiered selection process as follows: 1. Locations will be selected only if they are not currently under study by MPO staff or by others, or under design. 2. Using GIS techniques, staff will identify all groups of two or three signalized intersections in the region that meet the “one-quarter mile or less between intersections” criterion. 3. Of these, only those intersections that match with locations included in Transportation Improvement Program (TIP) projects from the “Conceptual” and “Pre-TIP” categories will be considered.

Subtask 1.2 Coordinate with Transportation Agencies and Involved Communities

Following the process described above, it is expected that the selected ten intersection groups will be along major arterials operated by MassHighway, the Department of Conservation and Recreation (DCR), and cities. Staff will coordinate with the involved entities to (a) receive their input in the process with respect to appropriate intersections to be studied and (b) discuss mechanisms to follow up with implementing eventual recommendations. MAPC staff outreach should be helpful in identifying community interest. CTPS staff will contact MassHighway and DCR staff to identify locations with agency interest. Based on criteria listed above, the larger set of ten will be reduced to up to four groups of intersections, which staff will analyze in detail.

Product(s) of Task 1

A table listing the initial set of ten intersection groups considered and the final set of up to four groups of intersections throughout the region meeting criteria from the sources referenced above. The table will include information explaining why the final set of intersection groups were chosen.

Task 2 Perform Field Reconnaissance and Collect Data

Once the set of up to four groups of intersections has been selected, staff will collect detailed data and information pertaining to each location. This will involve visiting each site and inventorying all relevant geometric, landscape, land use, and signal features. Data will include:

- Turning movement counts (TMCs)
- Bicycle counts
- Pedestrian counts
- Signal timing data (phases, timing lengths)
- Queue lengths
- Geometric data (lanes, curb cuts, sidewalks, crosswalks, pedestrian buttons)
- Land use/zoning information
- Jurisdictional/administrative system responsibilities

Product(s) of Task 2

Summaries of count, signal, queue, and geometric data, as well as land use and jurisdictional information, for the final set of selected intersections

Task 3 Evaluate and Analyze Selected Intersection Groups

Staff will evaluate each intersection for its level of service performance as an isolated traffic signal first and then test various strategies for coordination between adjacent intersections. The software SYNCHRO will be used for these purposes. Particular attention will be given to the evaluation of existing pedestrian signal phases, if any, or the need for them. Also, field observations will yield a full understanding of safety levels and traffic operations of vehicles, bicycles, and pedestrians at each location. Impacts of signal progression on bus transit (if any) will be analyzed qualitatively.

Product(s) of Task 3

Level of service and energy savings summaries for each intersection and for each of the considered coordination strategies per intersection group

Task 4 Receive Input from MassHighway District Office Staff and Local Officials

Once staff has developed coordination strategy results for the selected intersection groups, staff will contact MassHighway District Office and DCR staff, and local officials in each community involved, in order to discuss the intersection summaries, receive input on analysis and findings, and discuss potential improvements.

Product(s) of Task 4

The product of this task will be a summary of discussions and interactions with MassHighway District Office and DCR staff and local officials with respect to the preliminary findings. The combined comments generated by local and state officials will steer the development of all final recommended improvements.

Task 5 Recommend Improvements

Based on the evaluation and analysis performed in Task 3, and on the feedback given by local and state officials, staff will recommend specific traffic signal coordination strategies to improve throughput capacity, operations, and safety levels at the selected intersection groups. Staff will also estimate costs and identify the jurisdictional entity responsible for implementation.

Product(s) of Task 5

The product of this task will be a list of recommended traffic signal coordination strategies for the selected groups of intersections.

Task 6 Document All Findings and Recommendations

Staff will document all study tasks in a technical memorandum. MassHighway, DCR, and each of the communities involved will also receive a condensed memorandum pertaining to their particular intersections that will present analysis and recommendations.

Product(s) of Task 6

The Task 6 product will be a technical memorandum documenting Tasks 1 through 5.

ESTIMATED SCHEDULE

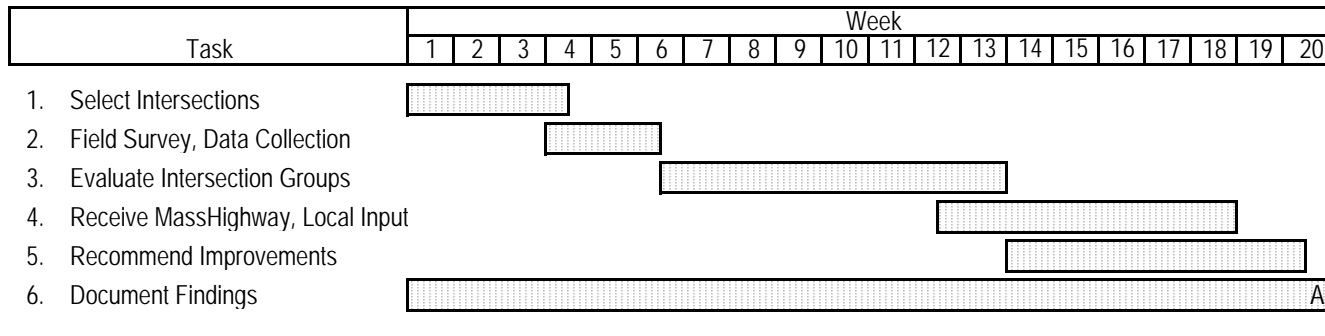
It is estimated that this project would be completed 16 weeks after the notice to proceed is received. The proposed schedule, by task, is shown in Exhibit 1.

ESTIMATED COST

The total cost of this project is estimated to be \$45,000. This includes the cost of 20.0 person-weeks of staff time, overhead at the rate of 86.97 percent, and travel. A detailed breakdown of estimated costs is presented in Exhibit 2.

AJS/EP/ep

Exhibit 1
ESTIMATED SCHEDULE
Arterial Traffic Signal Improvements and Coordination



Products/Milestones
 A: Technical memorandum

Exhibit 2
 ESTIMATED COST
 Arterial Traffic Signal Improvements and Coordination

Direct Salary and Overhead	\$44,872
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Task	Person-Weeks				Direct Salary	Overhead (@ 86.97%)	Total Cost
	M-1	P-5	Temp	Total			
1. Select Intersections	0.5	1.5	0.0	2.0	\$3,212	\$2,793	\$6,005
2. Field Survey, Data Collection	0.0	1.5	1.5	3.0	\$3,157	\$2,745	\$5,902
3. Evaluate Intersection Groups	0.2	5.0	0.0	5.2	\$8,304	\$7,222	\$15,525
4. Receive MassHighway, Local Input	0.2	1.0	0.0	1.2	\$1,923	\$1,672	\$3,595
5. Recommend Improvements	0.6	1.0	0.0	1.6	\$2,578	\$2,242	\$4,819
6. Document Findings	1.0	2.0	0.0	3.0	\$4,828	\$4,199	\$9,026
Total	2.5	12.0	1.5	16.0	\$24,000	\$20,873	\$44,872

Other Direct Costs	\$128
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Travel	\$128
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TOTAL COST	\$45,000
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Funding
 MassHighway 3C PL Highway Planning Contract #56242