

MBTA PMT Stakeholder Advisory Committee Meeting

October 25, 2007

The eighth meeting of the PMT Stakeholder Advisory Committee was held in the MPO Conference Room, Suite 2150, on October 25, 2007 from 12 – 2 PM.

Attendees:

| Name | Agency/Organization |
|-------------------|--|
| Christi Apicella | Medical Academic and Scientific Community Organization, Inc. |
| Clinton Bench | Central Transportation Planning Staff/Boston Region MPO |
| Paul Christner | Boston Transportation Department |
| Joe Cosgrove | MBTA |
| John Hersey | Central Transportation Planning Staff/Boston Region MPO |
| Ulla Hester | MBTA Advisory Board |
| Maureen Kelly | Central Transportation Planning Staff/Boston Region MPO |
| Jack McLaughlin | MBTA |
| Elizabeth Moore | Central Transportation Planning Staff/Boston Region MPO |
| Thomas Nally | A Better City |
| Paul Regan | MBTA Advisory Board |
| Mark Siegenthaler | Department of Housing and Community Development |
| Brian Stein | Scheidt & Bachmann USA |
| John Von Goeler | Scheidt & Bachmann USA |
| Karen Wepsic | MBTA Rider Oversight Committee |
| Nigel Wilson | Massachusetts Institute of Technology |

Meeting Highlights:

- The MBTA's Automated Fare Collection (AFC) system was installed between May 2005 and December 2006.
- The MBTA has since distributed over 2.3 million CharlieCards and over 1.6 million cards are being used.
- Now, 55% of MBTA fare sales are made by electronic payment.
- The MBTA's new fare structure was implemented in January 2007. It was designed to be more equitable and it provides cost savings to those who use the CharlieCard.
- Moving forward, the MBTA plans to integrate AFC on the commuter rail (beginning in 2008), decentralize management of MBTA parking lots, and work with neighboring Regional Transit Authorities and other transportation agencies to make their electronic payment systems interoperable with the MBTA's.
- Several documents (listed below) were distributed for discussion and SAC members provided suggestions:
 - 2008 PMT Mobility Challenges
 - Flowchart of the PMT process
 - Hierarchy of Targets to Achieve the 2008 PMT Vision

- Discussion occurred regarding the role of the PMT in light of the fact that the Executive Office of Transportation and Public Works is overseeing the long-range planning for some major transit expansion projects.

Meeting Notes

MBTA Automated Fare Collection

Jack McLaughlin, MBTA, gave a presentation on the MBTA's Automated Fare Collection (AFC) system.

Implementation of AFC began with a pilot project on the Blue Line in May 2005. Systemwide installation was completed by December 2006 to coincide with implementation of the MBTA's new fare structure in January 2007.

The new fare structure was designed to be more equitable and provides cost savings to those who use the CharlieCard. Over 2.3 million CharlieCards have been distributed, and over 1.6 million of those are currently in use. As of August 2007, 86% customers avoided fare surcharges by using their CharlieCards. The new bus/subway link pass, which costs \$59 per month, has been very successful.

Currently, 55% of CharlieCard sales are credit/debit-based which saves the MBTA the time and effort of counting money. For managing its money-based sales, the MBTA is now using mobile vaults so that all money is counted and deposited within 24 hours. On average, customers have \$6 of value stored on their cards. The program for corporate customers is growing.

Phase 2 of the AFC program will include implementing AFC on the commuter rail. The MBTA is considering installing cashless fare vending machines on train platforms and providing conductors with hand-held validators to verify and enforce fare payments. The MBTA is considering a tap-on/tap-off system using pole-mounted fare validators on the commuter rail platforms. This would be a "distance-based" system that would automatically deduct the appropriate fare from the customers' cards when they tap-off.

The MBTA is planning to use AFC for parking payments in the future to create a seamless electronic CharlieCard payment system. This would allow the MBTA to provide lower parking rates to its customers than would be paid by others who use the same lots. The integration will occur first on the Greenbush line. The MBTA is also planning to divide its parking system into six districts, which would create more competition for parking management contracts and increase revenue for the MBTA.

Moving forward, the MBTA would like to work with neighboring Regional Transit Authorities and other transportation agencies (such as the MassPike and the Port Authority) to develop interoperable electronic payment systems. The MBTA is committed to maintaining the highest standards as it moves forward, to protect customer privacy and data security. The MBTA's electronic payment system will meet the standards set by the payment card industry, and the MBTA is already compliant with American Express's

standards. The MBTA is awaiting approval by other credit card companies before beginning to sell CharlieCards on the web.

During a discussion period after the presentation the following points were discussed:

- The MBTA has a high market penetration rate for the CharlieCard.
- Installation of AFC equipment on the commuter rail system will begin in 2008. It will take about two years to complete the whole system.
- Much work is still required to make the system interoperable.
- The MBTA already has many retail sales terminals conveniently located for bus riders and will be looking to identify where to locate more throughout the commuter rail system, although it will not be possible to place one at every station.
- The MBTA is working on a reporting process so that the data collected through AFC can be used for planning and other purposes. Scheidt & Bachmann USA, the AFC vendor, is working closely with the MBTA to determine how to gather and report the data in the most meaningful ways.
- A suggestion was made that the MBTA consider charging parking above market rates for people who don't use transit, but park at MBTA lots (such as Lechmere).
- A suggestion was made to reduce parking rates on weekends to encourage people not to drive into the city.
- All fare vending machines in the MBTA system include instructions in Spanish and Mandarin Chinese, as well as, Braille.
- Fare validating equipment is being used on the Green Line. The equipment is proving to be very successful in terms of functionality, but it must be made to be more rugged to stand up to the environment in which it will be used.
- A suggestion was made to charge commuter rail passengers a full fare if they do not tap out when exiting the station. The MBTA is considering using this approach.

Mobility Challenges

The revised PMT evaluation methodology and criteria document (see attached), which reflects the most recent comments and should be close to its final form, was passed out for SAC members to review. Three other documents (see attached) were distributed for discussion:

- flowchart of the PMT process
- refined list of 2008 PMT mobility challenges
- proposed Targets to achieve the 2008 PMT vision

Clinton Bench, Central Transportation Planning Staff/Boston Region MPO, noted that SAC members can use the committee's listserve if they would like to make comments on these documents after the meeting.

Paul Regan, MBTA Advisory Board, raised the issue of the role of the PMT in light of the fact that the Executive Office of Transportation and Public Works is overseeing the long-range planning for some major transit expansion projects – the Green Line Extension and South Coast Rail projects in particular. He suggested that the MBTA's General Manager attend a SAC meeting to speak to this issue and to clarify his priorities.

SAC members talked about how the PMT could be a tool that the General Manager could use to document and justify the MBTA's capital investment needs and to steer the conversation about transit expansion. It was noted that the PMT provides a rational process to inform decision-makers and the political process.

Christi Apicella, MASCO, expressed concern about whether the MBTA would be responsible for the ongoing operating costs associated with expansion projects that would be paid for by the state.

Mark Siegenthaler, Department of Housing and Community Development, remarked that the last PMT identified projects, such as the North-South Rail Link, which scored well in the project evaluation process and were recommended as high-priority, but haven't been funded due to their high cost.

Elizabeth Moore, Central Transportation Planning Staff/Boston Region MPO, stated that the approach for the 2008 PMT is to get away from scoring projects and to focus on identifying mobility problems, creating packages of strategies to solve those problems, and then evaluating the strategies to determine the most cost effective set of solutions.

Ulla Hester, MBTA Advisory Board, cautioned that the vision for the PMT should not be based on the current financial reality since more dollars for transportation projects could be available in the future.

C. Bench summarized the content of the "2008 PMT Mobility Challenges" handout. The mobility challenges have been refined since the last SAC meeting to respond to the concerns that were raised at that time. The mobility challenges on the list have been made more comparable in terms of their scale, and they have been grouped to reflect the evaluation criteria categories. Some of the challenges that were listed as systemwide before have now been moved to the individual corridor lists and have had corridor-specific details added.

The list includes challenges that were raised at public meetings, such as the lack of circumferential transit. It also includes challenges that CTPS has determined through data analysis. It was emphasized that the list is still a work in progress.

SAC member made several comments, including the following:

- There should be recognition on page one, under the "System Configuration" category, that there is a lack of service in some areas, rather than just an insufficient level of existing service, which the term "gap" would seem to imply.
- Concerns were expressed that, by moving many of the issues from systemwide concerns to corridor specific issues, it appears that the PMT is not addressing the big picture issues, but dealing more with smaller scale problems. Staff noted that the PMT vision, goals, and objectives (included in the handout titled, "Hierarchy of Targets to Achieve the 2008 PMT Vision") speak to this concern. However, the mobility challenges will be revised so that the systemwide challenges also reflect the more overarching issues.

Evaluation Targets

E. Moore described the content of the handout titled, “Hierarchy of Targets to Achieve the 2008 PMT Vision.” This document lists the PMT goals and objectives, and relates the evaluation criteria back to the objectives. Measurable targets are being established for each evaluation criteria to be used both for project selection and to measure progress after projects in the PMT have been implemented. Work is underway to set the targets.

Other

Joe Cosgrove, MBTA, announced that all SAC members are invited to attend the October 30 event to mark the beginning of service on the Greenbush commuter rail line.

He also announced that the MBTA’s draft Capital Investment Program (CIP) will be released in November. Public workshops will be held. The first workshop is scheduled on November 27.

Due to the upcoming holidays, the Stakeholder Advisory Committee will not meet on the fourth Thursday of the month in November and December. Instead, we will have one meeting, which will be held sometime in early December, and will invite the MBTA General Manager to speak at the meeting about his priorities for the PMT. A notice regarding the final date and time for this meeting will be forthcoming as soon as possible.

2008 Program for Mass Transportation

Steps to Determine Preferred Mobility Strategies

Identify mobility problems

- **Compile list of mobility challenges**
Each mobility challenge identified during the public process or from other sources, including data analysis and review of existing studies and reports will be categorized by corridor and theme and stored in a database for ease of reference.
- **Develop problem statements**
Groups of mobility challenges will be summarized in the form of a limited number of “problem statements.” In some cases, these statements will be corridor-specific, while in others they will reach across corridor lines.

Identify mobility solutions

- **Compile list of mobility solutions**
For each problem statement, potential solutions will be identified that further system preservation, service enhancements, and system expansion. Solution concepts will be drawn from various sources, including the Commonwealth’s transportation agencies, the 2003 PMT, the ongoing 2008 PMT public process, the Boston Region MPO Transportation Improvement Program (TIP), the Regional Transportation Plan (RTP), the MBTA State of Good Repair Database, and other sources.
- **Screen potential solutions**
Each of the potential service enhancement and system expansion solutions identified to address problem statements will be screened to ensure that they are technologically feasible and consistent with MBTA operations service standards/goals. Solutions that meet these screening criteria will be advanced to a more detailed assessment. In addition, the commonwealth’s legal commitments will be considered at this stage to identify solutions that must be part of the PMT’s final set of mobility strategies.

Evaluate Potential Solutions

- **Apply evaluation criteria to potential solutions**
Each of the potential solutions advanced from the previous step will be measured according to applicable evaluation criteria that are linked to the PMT goals and objectives. In the case of service enhancement and system expansion solutions that have a direct operational impact, one set of

evaluation criteria will apply. Service enhancement and system expansion solutions pertaining to customer support and safety will be evaluated separately, as well as those pertaining to accessibility. System preservation projects will also be compared to a separate set of evaluation criteria. Each criterion will have a unit of measurement appropriate to the corresponding objective.

- **Estimate cost of potential solutions**
For each of the potential solutions identified, including system preservation needs, estimates will be made of both operating and capital costs,¹ where applicable. In addition, a consolidated annual cost will be calculated in 2008 Dollars. In some cases, these estimates will be drawn from existing feasibility studies or the MBTA's State of Good Repair Database, while in other cases they will be based on a unit cost database. With this information, the cost effectiveness of achieving the estimated level of benefit associated with each quantitative evaluation criterion will also be calculated.
- **Summarize performance of potential solutions**
The results of the evaluation of all potential solutions to a given problem statement will be shown together, but solutions will not be ranked at this stage.

Define Comprehensive Mobility Strategies

- **Identify proposed groupings of solutions**
For each corridor and systemwide mobility challenge, preferred groupings of solutions – mobility strategies – will be identified with the intent of meeting the benchmarks for each PMT objective in the most cost-effective manner. These strategies will require a combination of system expansion and service enhancement solutions with a variety of strengths. Indeed, some solutions may not perform well on all evaluation criteria overall, but together with other solutions may compose the most cost-effective approach to reaching the desired benchmarks.
- **Estimate combined impacts of mobility strategies**
Using the regional travel demand model, the proposed mobility strategies for all corridors and systemwide mobility challenges will be evaluated as a whole to determine whether the defined benchmarks for PMT objectives will be met. If they are not met, additional iterations of this and the previous step may be performed.
- **Estimate combined costs of mobility strategies**
Cumulative operating and capital costs, as well as consolidated annual costs, will be identified. The cost effectiveness of achieving the estimated level of benefit associated with each quantitative evaluation criterion will also be

¹ The debt service necessary to support capital costs will also be calculated and considered.

calculated. Additional iterations of this and the previous two steps may be performed if it appears likely that the PMT goals can be met at a lower cost.

- **Identify incremental milestones for each strategy**

After the comprehensive set of mobility strategies are confirmed to meet the targets for each PMT goal, specific solutions within each strategy will be ordered according to their urgency, effectiveness, and estimated cost. The extent to which each goal is achieved at incremental stages of the 25-year plan will also be identified.

2008 Program for Mass Transportation Steps to Determine Evaluation Factors

Develop vision, goals, and objectives for 25-year horizon

The vision, goals, and objectives for the 2008 PMT should together define the desired state of the MBTA's capital facilities at a 25-year horizon. In particular, the vision should be broad and articulate the MBTA's role in the commonwealth's transportation network and its contributions to economic and community vitality. The PMT goals then provide a concise set of customer-oriented measures that can be taken to achieve this vision, and should be the primary driving force behind the formulation of potential mobility solutions. Finally, the objectives describe more specific actions that can be taken to achieve the identified goals.

Define Evaluation Criteria

The 2008 PMT evaluation criteria for service enhancements and system expansion are divided into two primary categories. The first category applies to proposed mobility solutions that have a direct impact on the conveyance of customers throughout the system. The second category applies to customer support and safety solutions. Within each category, evaluation criteria include both qualitative and quantitative measures that correspond to the PMT goals and objectives. They are listed below in a similar order to and grouped in a similar fashion as these goals and objectives. Cost effectiveness is an additional factor that will also be applied across these criteria. In particular, the annualized cost (capital and operating) per unit benefit for each measure will be calculated and considered in the development of proposed mobility strategies.

Identify Measurable Benchmarks For Each Objective

For each 2008 PMT objective, a specific benchmark for the year 2030 will be identified. In the case of quantitative objectives, such as those relating to travel speed, ridership, and environmental impacts, it will be easier to identify measurable targets. However, qualitative targets will also be identified for other objectives, such as those relating to service coverage, safety, etc. With respect to system preservation in particular, the PMT will assume a goal of achieving a state of good repair in 25 years.

2008 Program for Mass Transportation PMT Evaluation Criteria

Service Enhancement and System Expansion Evaluation Criteria – Customer Conveyance

System Configuration

- Reduction in number of transfers/minimization of transfer time
- Improvements to Interconnectivity between modes (including fare collection)
- Improvements to station access
- Expansion of transit access to geographical areas underserved by transit

Expediency

- Improvements to service frequency *
- Increase in travel speed
- Reduction in travel time
- Reduction in automobile travel time advantage *
- Expansion of transit access during time periods poorly served by transit

Reliability and Comfort

- Improvements to reliability of service
- Expansion of capacity where and when crowding occurs
- Improvements to vehicle comfort and passenger circulation

Fairness

- Elimination of barriers to efficient travel between key destinations and neighborhoods with substantial minority or low-income population.
- Provision of benefits that outweigh burdens in neighborhoods with substantial minority or low-income population.

Customer Information

- Improvements to reliability and quality of stop announcements *
- Improvements to availability of real-time service performance data *

Regional Transportation Impacts

- Number of transit riders served
- Number of new transit riders served
- Change in transit mode share for the regional network
- Reduction in regional emissions

Land Use Impacts

- Consistency with local plans that promote coordinated, transit-oriented development and support sustainable land use patterns
- Contribution to attainment of MPO land-use goals
- Contribution to brownfield and infill development

Service Enhancement and System Expansion Evaluation Criteria – Customer Support and Safety

- Enhancements to customers' personal safety
- Provision of amenities where customers access service
- Enhancements to vehicle and station cleanliness *
- Improvements to responsiveness and courtesy of employees *
- Improvements to safety and security training for operators *
- Improvements to navigational tools
- Expansion of schedule availability *
- Provision of customer information in languages other than English *

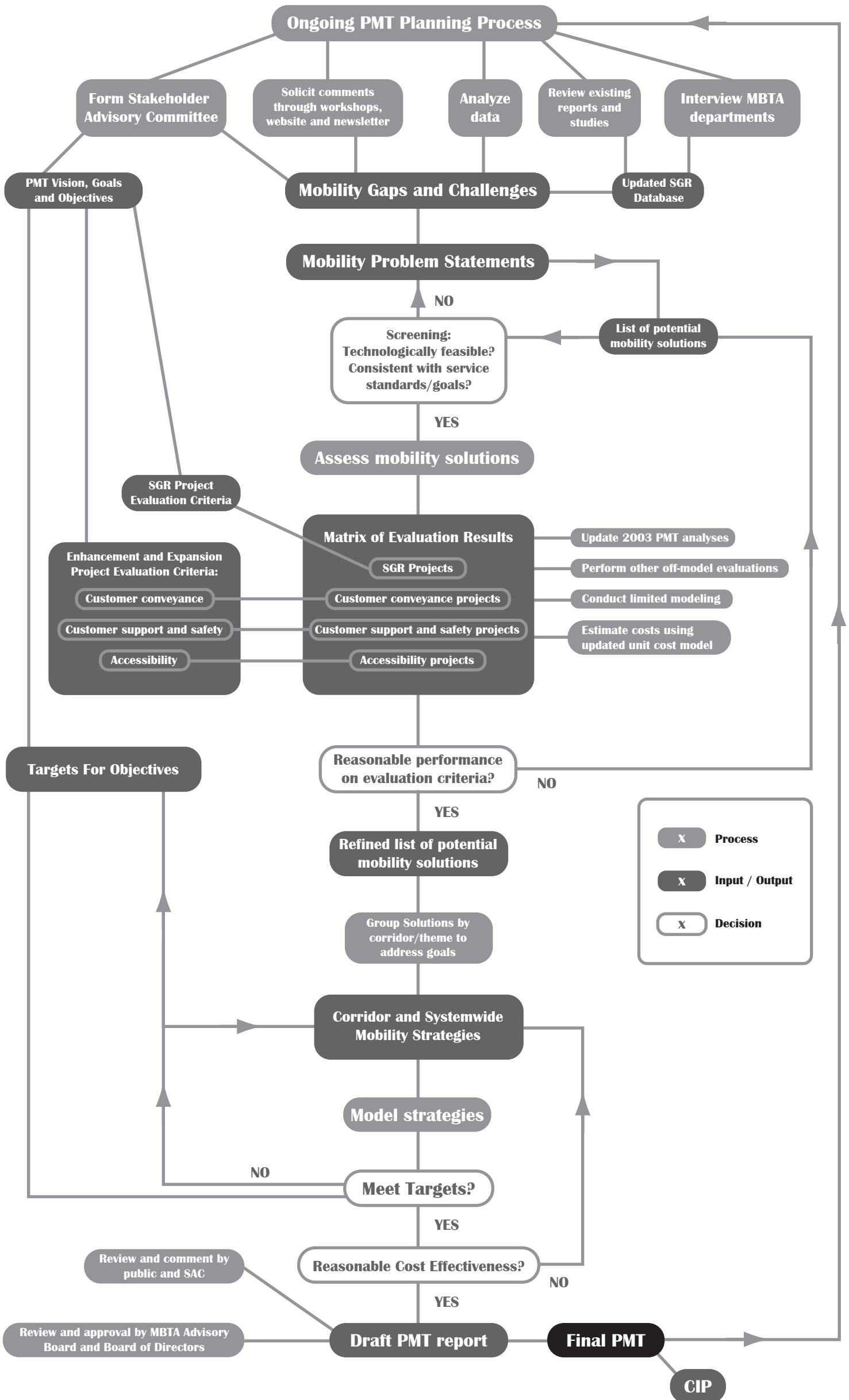
Service Enhancement and System Expansion Evaluation Criteria – Accessibility

- Number of transit riders served
- Improvements to ease of transfers between rail lines
- Improvements to ease of transfers between rail lines and other transit modes
- Expansion of access to major activity centers

State of Good Repair Evaluation Criteria

- Replacement of an asset that has reached or exceeded its useful life
- Correction of an existing deficiency for passengers and/or employees in safety, health, and/or the environment
- Improvement of an operationally critical asset

* indicates criterion not included in 2003 PMT



Mobility challenges that apply to all corridors

System Configuration:

- Some connections between routes/services need to be timed better to provide reliable transfers

Expediency:

- In some suburban areas, the hours, days, and/or frequency of service are insufficient to encourage transit use.

Reliability and Comfort:

- On-time performance of some services is not reliable (particularly bus)
- Redundant systems are needed for elevators and escalators to ensure functionality when breakdowns occur
- Poor circulation due to the current seat configuration on buses contributes to customer discomfort and inconvenience on heavily traveled routes.

Customer Information:

- Customers feel the need for increased meaningful dialog with the MBTA through which their concerns can be expressed and addressed
- Customers often feel the information provided by the MBTA regarding service disruptions is insufficient
- Accurate and timely information about schedule information needs to be more readily available to customers.
- Some customers find replacement of Charlie Cards difficult.

Regional Transportation Impacts:

- Pollution that is caused by the MBTA should be avoided, reduced, and/or mitigated.
- MBTA services should be improved to reduce the effects of global warming.

Land Use Impacts:

- Land use and transit planning need to be coordinated for sustainable development to occur.

Accessibility:

- Persons with disabilities should have access to all MBTA services.
- Customers perceive the RIDE service to be unreliable

System Preservation:

- Deferred maintenance, inadequate maintenance and storage capacity, and delays to end-of-life replacements of MBTA assets have contributed to system safety and performance issues. Asset categories by corridor and systemwide include revenue vehicles, non-revenue vehicles, track/right-of-way, signals, communications, power, maintenance facilities, stations, facilities, bridges, and accessibility.

Northeast corridor mobility challenges

System Configuration:

- Cape Ann Transit Authority (CATA)/MBTA service and fare connections could be made more seamless for riders at the following points of contact:
 - Rockport Station, Gloucester Station, North Shore Mall (Saturdays only)
- Outside the urban core, but inside of Route 128, demand is growing for improved circumferential/crosstown travel between some or all of the following major activity centers/hubs, as well as between these and centers/hubs in other corridors:
 - Inner suburban ring/Outer Neighborhood: Revere Center, Wonderland
 - Outer Suburban Ring: Square One Mall, Lynn Central Sq., Salem Station/Salem Center, North Shore Mall
- By 2030, large growth in intra-city trips is projected for Peabody, which currently has only partial local transit coverage (on east side of city)
- A need for additional parking on the Newburyport/Rockport line exists at a number of stations, most notably Salem and Beverly, while unused parking capacity exists at Lynn. Stations where parking usage is at 85% of capacity or greater:
 - Newburyport/Rockport Line: Ipswich, Manchester, Prides Crossing, Beverly Depot, Salem, Swampscott,
 - Blue Line: Beachmont, Suffolk downs
- Improvements or additions to bike racks, bike rack signage, and/or bike rack shelters access are needed at some stations:
 - Blue Line: Orient Heights, Maverick, Wonderland, Wood Island, Revere Beach
 - Newburyport/Rockport Line: Swampscott, Hamilton/Wenham, Ipswich, Beverly Depot, Newburyport

Expediency:

- A gap exists in high frequency service in a dedicated right-of-way connecting Boston to densely developed urban areas in Chelsea and Everett

Regional Transportation Impacts:

- By 2030, ridership growth on Blue the Line (expected to be 10% with 6-car trains) will need to be accommodated.

Accessibility:

- Some MBTA stations/stops remain inaccessible to persons with disabilities:
 - Newburyport/Rockport line: Prides Crossing, Riverworks, Chelsea

System preservation:

- Charlestown and Lynn Bus Garages need to be refurbished (Lynn may be reduced in size when Wellington is opened)
- Blue Line signal system is outdated and limits speeds to 40 mph
- Signals at Downtown Crossing need to be updated

North corridor mobility challenges

System Configuration:

- RTA/MBTA service and fare connections could be made more seamless for riders at the following points of contact:
 - Merrimack Valley Regional Transit Authority (MVRTA): Mc Govern Intermodal Center-Lawrence, Haverhill Station, Andover Station, Newburyport Station
 - Lowell Regional Transit Authority (LRTA): Burlington Mall, North Billerica Station, Gallagher Center-Lowell
- Outside the urban core, but inside of Route 128, demand is growing for improved circumferential/crosstown travel between some or all of the following major activity centers/hubs, as well as between these and centers/hubs in other corridors:
 - Inner suburban ring/Outer Neighborhood: West Medford, Medford Sq., Malden, Oak Grove, Linden Sq., Everett Sq.
 - Outer Suburban Ring: Burlington Mall, Woburn Sq., Winchester Center, Wakefield Station/Wakefield Sq., Franklin Sq, Melrose
- By 2030 large growth in intra-city trips is projected for Wilmington, which has no existing local transit
- Orange Line is overcrowded during peak hours between Downtown Crossing and North Station
- Need for layover facility on the Lowell line to improve service efficiency
- Need for relocation of layover facility on the Haverhill line to improve service efficiency
- Pedestrian access to Malden Center Station is not adequate
- Parking demand is close to or equal to supply at some stations, while parking at Anderson RTC is underutilized. Stations where parking usage is at 85% of capacity or greater:
 - Haverhill Line: Haverhill, Andover, Ballardville, North Wilmington, Reading, Wakefield, Greenwood
 - Lowell Line: North Billerica, Wilmington, Winchester, Wedgemere
 - Orange Line: Sullivan Sq., Malden, Oak Grove
 - Express Bus, Woburn
- Improvements or additions to bike racks, bike rack signage, and/or bike rack shelters access are needed at some stations:
 - Orange Line: Oak Grove, Community College
 - Haverhill Line: Bradford, Andover
 - Lowell Line: Lowell, Winchester Center

Expediency:

- A gap exists in high frequency service in a dedicated right-of-way connecting densely developed urban areas, such as Medford, between Boston and New Hampshire
- Haverhill line infrastructure problems restrict frequency and efficiency of service: signals need to be modernized, there is only a single track over a substantial

portion of the route, multiple grade crossings remain, platforms are of insufficient length

Land Use Impacts:

- Transit services need to respond to current and projected changes in land use

Accessibility:

- Some MBTA stations/stops remain inaccessible to persons with disabilities.
 - Lowell Line: Winchester, Wedgemere, West Medford
 - Haverhill Line: North Wilmington, Wakefield, Greenwood, Wyoming Hill

System Preservation:

- Some bridges are in need of repair
- Signals at Ashmont need to be updated

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Northwest corridor mobility challenges

System Configuration:

- Montachusett Regional Transit Authority (MART) / MBTA service and fare connections could be made more seamless for riders at the following points of contact:
 - Fitchburg Station/Intermodal Center, North Leominster Station
- Outside the urban core, but inside of Route 128, demand is growing for improved circumferential/crosstown travel between some or all of the following major activity centers/hubs, as well as between these and centers/hubs in other corridors:
 - Inner suburban ring/Outer Neighborhood: Harvard, Porter, Davis, Alewife, Arlington Center, Arlington Heights, Belmont Center, Waverley Square
 - Outer Suburban Ring: Watertown Sq., Waltham Center, Lexington Center
- A gap exists in high frequency service in a dedicated right-of-way connecting Boston to densely developed urban area in Somerville
- Growing demand in “circumferential” corridors served by Routes 1, 47 and 66 will need to be accommodated
- By 2030, large growth in intra-city trips is projected for Acton, Concord, and Bedford
- Bus garage capacity will need to be increased if the fleet is enlarged
- Parking demand is close to or equal to supply at some stations (most notably Alewife). Stations where parking usage is at 85% of capacity or greater:
 - Fitchburg Line: North Leominster, Shirley, Ayer, Littleton, South Acton, West Concord, Concord, Lincoln, Hastings, Kendall Green, Waltham
 - Red Line: Alewife
 - Green Line: Lechmere
- Improvements or additions to bike racks, bike rack signage, and/or bike rack shelters access are needed at some stations:
 - Red Line: Harvard, Davis, Kendall/MIT, Alewife, Central, Porter
 - Green Line: Lechmere
 - Fitchburg Line: North Leominster, Kendal Green, Waltham, Concord, Brandeis/Roberts
 - Express Bus, Watertown Yard
- Pedestrian access to Alewife Station needs improvement

Land Use Impacts:

- Transit services need to respond to current and projected changes in land use

Accessibility:

- Some MBTA stations/stops remain inaccessible to persons with disabilities.
 - Fitchburg Line: Shirley, Ayer, Littleton/495, South Acton, Concord, Lincoln, Silver Hill, Hastings, Kendal Green, Waverley, Belmont

System preservation:

- Red Line tracks are nearing end of their useful life between Harvard and Alewife

West corridor mobility challenges

System Configuration:

- RTA/ MBTA service and fare connections could be made more seamless for riders at the following points of contact:
 - Worcester Regional Transit Authority (WRTA): Worcester Union Station, Southborough Station (TLC)
 - MetroWest Regional Transit Authority (MWRTA): Framingham Station, Natick Station
- Outside the urban core, but inside of Route 128, demand is growing for improved circumferential/crosstown travel between some or all of the following major activity centers/hubs, as well as between these and centers/hubs in other corridors:
 - Inner suburban ring/Outer Neighborhood: Reservoir Station, Brighton Center
 - Outer Suburban Ring: Newton Corner, Newton Centre
- Growing demand in “circumferential” corridors served by Routes 47 & 66 will need to be accommodated
- Substantial growth in intra-city trips is projected for Wellesley
- Parking demand is close to or equal to supply at some stations. Stations where parking usage is at 85% of capacity or greater:
 - Needham Line: Needham Center, Needham Junction
 - Worcester Line: Worcester, Grafton, Westborough, Southborough, Framingham, West Natick, Natick, Wellesley Square, Wellesley Hills, Auburndale, West Newton
 - Green Line: Waban, Eliot, Chestnut Hill
- Improvements or additions to bike racks, bike rack signage, and/or bike rack shelters access are needed at some stations:
 - Green Line D Branch: Brookline Village, Newton Centre, Woodland, Eliot
 - Framingham/Worcester Line: Wellesley Hills, Worcester, Natick, Wellesley Square, Wellesley Farms, Westborough
 - Needham Line: Needham Center

Expediency:

- Commuter rail service is infrequent between Framingham and Worcester
- South Station platform capacity is inadequate for future growth

Reliability and Comfort:

- Green Line is operating at close to capacity and is overcrowded (especially for Sox games)

Fairness:

- Not all Green Line outbound riders are currently interacting with fare collection equipment

Land Use Impacts:

- Transit services need to respond to current and projected changes in land use

Accessibility:

- Some MBTA stations/stops remain inaccessible to persons with disabilities.
 - Green Line B Branch: Blandford Street, BU West, St. Paul Street, Pleasant Street, Babcock Street, Brighton Avenue, Griggs Street, Allston Street, Warren Street, Sutherland Road, Chiswick Road, Chestnut Hill Avenue, South Street
 - Green Line C Branch: Hawes Street, Kent Street, St. Paul's Street, Winchester Street, Brandon Hall, Fairbanks, Tappan Street, Dean Road, Englewood Avenue
 - Green Line D Branch: Waban, Eliot, Newton Highlands, Chestnut Hill, Beaconsfield, Longwood
 - Green Line E Branch: Fenwood Street, Mission park/Parker Hill, Riverway, Back of the Hill
 - Framingham/Worcester Line: Natick, Wellesley Square, Wellesley hills, Wellesley Farms, Auburndale, West Newton, Newtonville

System preservation:

- Green Line tracks need constant inspection & work to support Breda (Type 8) cars

Southwest corridor mobility challenges

System Configuration:

- RTA/ MBTA service and fare connections could be made more seamless for riders at the following points of contact:
 - Greater Attleboro Taunton Regional Transit Authority (GATRA): Franklin Station, Attleboro Station, and Mansfield Station
 - Brockton Area Transit (BAT): Stoughton Station
- Outside the urban core, but inside of Route 128, demand is growing for improved circumferential/crosstown travel between some or all of the following major activity centers/hubs, as well as between these and centers/hubs in other corridors:
 - Inner suburban ring/Outer Neighborhood: Hyde Park Station/Cleary Square, Roslindale Sq, Forest Hills
 - Outer Suburban Ring: Dedham Mall
- Additional service is needed to Jackson Square to support TOD
- By 2030 large growth in intra-city trips is projected for Norwood and Walpole
- Growing demand in “circumferential” corridors served by Routes 1, 47 & 66 will need to be accommodated
- Arborway garage capacity will not be sufficient to accommodate enlarged fleet
- Parking demand is close to or equal to supply at some stations. Stations where parking usage is at 85% of capacity or greater:
 - Needham Line: Hersey, West Roxbury, Highland, Bellevue
 - Franklin Line: Forge Park, Franklin, Norfolk, Endicott
 - Providence/Stoughton Line: Attleboro, Mansfield, Sharon, Stoughton, Canton Center, Canton Junction, Hyde Park
 - Orange Line: Forest Hills, Green St.
- Improvements or additions to bike racks, bike rack signage, and/or bike rack shelters access are needed at some stations:
 - Orange Line: Ruggles, Green Street
 - Needham Line: Highland, Hersey
 - Franklin Line: Dedham Corp. Center, Norfolk
 - Providence/Stoughton Line: South Attleboro, Canton Junction

Expediency:

- South Station platform capacity is inadequate for future growth

Land Use Impacts:

- Transit services need to respond to current and projected changes in land use

Accessibility:

- Some MBTA stations/stops remain inaccessible to persons with disabilities.
 - Franklin Line: Franklin, Walpole, Plimptonville, Windsor Gardens, Islington, Endicott
 - Attleboro/Providence Line: Sharon

Southeast corridor mobility challenges

System Configuration:

- RTA/MBTA service and fare connections could be made more seamless for riders at the following points of contact:
 - Brockton Area Transit (BAT): Montello, Brockton, Campello, Ashmont Station
 - Greater Attleboro Taunton Regional Transit Authority (GATRA): Kingston Station, Plymouth Station, and Middleborough Station
- Outside the urban core, but inside of Route 128, demand is growing for improved circumferential/crosstown travel between some or all of the following major activity centers/hubs, as well as between these and centers/hubs in other corridors:
 - Inner suburban ring/Outer Neighborhood: Ashmont, Mattapan
 - Outer Suburban Ring: Quincy Center/Quincy Square, East Milton Square, Weymouth Landing
- Cape Cod does not have direct transit service to Boston via a dedicated right of way
- New Bedford and Fall River do not have direct transit service to Boston via a dedicated right of way
- High growth area, including Abington, Rockland, Hanover, Norwell, Scituate, Cohasset, Hingham and Hull, lacks intra-regional transit options
- Parking is at or near capacity at most Red Line and Old Colony Stations, most notably Quincy Adams, Quincy, and Braintree. Stations where parking usage is at 85% of capacity or greater:
 - Kingston Line: Hanson, Whitman, Abington, South Weymouth
 - Middleborough Line: Middleborough, Holbrook/Randolph
 - Ferry: Hingham Ferry Terminal
 - Red Line: Braintree, Quincy Center, Wollaston, North Quincy, Butler, Cedar Grove
- Improvements or additions to bike racks, bike rack signage, and/or bike rack shelters access are needed at some stations:
 - Red Line: North Quincy, Quincy Center, Wollaston
 - Middleborough/Lakeville Line: Campello

Expediency:

- South Station platform capacity is inadequate for future growth

Reliability and Comfort:

- Signal problems at junction of Red Line branches reduce reliability

Land Use Impacts:

- Transit services need to respond to current and projected changes in land use

Accessibility:

- Some MBTA stations/stops remain inaccessible to persons with disabilities.
 - Red Line: Wollaston

- Mattapan-Ashmont Line: Cedar Grove, Butler, Milton, Central Avenue, Valley Road, Capen Street

System preservation:

- Quincy bus garage facilities are antiquated
- Midlife overhaul and replacement of 2 catamarans

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Urban core mobility challenges

System Configuration:

- Gaps in rapid transit line connections hinder expedient travel between some urban core neighborhoods.
- Cross-regional suburb-suburb trips are hindered by need for multiple transfers
- Growing demand in “circumferential” corridors served by Routes 1 & 47 will need to be accommodated
- Improvements or additions to bike racks, bike rack signage, and/or bike rack shelters access are needed at some stations:
 - Red Line: Andrew, Park Street, South Station, Downtown Crossing
 - Blue Line: Aquarium
 - Orange Line: North Station, Mass. Avenue, Back Bay

Fairness:

- Locomotive exhaust problems at Back Bay station

Land Use Impacts:

- Transit services need to respond to current and projected changes in land use

Accessibility:

- Some MBTA stations/stops remain inaccessible to persons with disabilities.
 - Green Line Central Subway: Boylston, Hynes ICA, Symphony
 - Blue Line: Government Center

System preservation:

- Signal system in Green Line central tunnel (Government Center – Arlington) dates from 1920s

Mobility challenges that relate to MBTA operational and/or planning issues

Accessibility:

- Some MBTA stations/stops remain inaccessible to persons with disabilities due to buses not pulling to curb, lack of snow removal, etc., at stations
- In some inner suburban areas, the hours, days, and/or frequency of service are insufficient to encourage transit use.
- The MBTA should coordinate planning with other RTAs to make fare and service connections seamless for riders.

Manpower:

- Manpower is a significant obstacle to maintaining the rapid transit signals, power & track systems:
 - Need more clerical staff to do necessary paperwork for CIP, etc.
 - Need asset management system with GIS for linear assets
 - The current system (MCRS) is based on vehicles, and doesn't work well for tracks, etc.
 - Looking at systems used by large utilities

Hierarchy of Targets to Achieve the 2008 PMT Vision

Vision Statement:

The MBTA will provide safe, reliable, accessible, efficient, and cost-effective services that

- meet the evolving mobility needs of the region, the communities, and the individuals it serves;
- reduce environmental impacts;
- support environmental justice;
- strengthen regional economic vitality and competitiveness.

25-Year Vision Targets:

The MBTA will provide service capacity and quality to achieve ridership levels of _____ rides/day, while maintaining consistency with Title VI and Environmental Justice requirements and supporting economic development and sustainable land use plans. To accomplish this ridership target, the MBTA must reach and maintain a state of good repair and will:

- reduce average trip travel time by ____%;
- improve service reliability to ____%;
- provide full system accessibility;
- reduce customer complaints by ____%;
- reduce CO₂ emissions from MBTA operations by 40% (2020 target in Executive Order 484)

Following are the specific targets associated with the outcome goals/objectives and the evaluation criteria developed for the 2008 PMT. These targets will be used to determine which mobility solutions are selected for inclusion in the mobility strategies for each corridor.

1. Take customers where they need to go

| Objectives | Evaluation criteria | 25-Year PMT Evaluation Target(s) |
|--|--|--|
| Improve transit connections (geographically as well as within and between modes) and reduce transfers | System Configuration Reduction in number of transfers/minimization of transfer time | <ul style="list-style-type: none"> • Reduce average number of transfers/trip by ___% |
| Coordinate MBTA services and fare collection systems with other (Non-MBTA) services, including intersuburban service provided by regional transit authorities (RTAs) | System Configuration Improvements to Interconnectivity between modes (including fare collection) | <ul style="list-style-type: none"> • Provide integrated signage at all transfer points • Fully integrate fare collection between MBTA modes and between MBTA and other RTAs |
| Expand options for customers to conveniently access MBTA stations and services | System Configuration Improvements to station access | <ul style="list-style-type: none"> • Improve intermodal connections at stations • Provide bike racks at ___% of transit stations • Determine and meet future parking needs throughout the system by adding parking spaces and/or using parking demand management strategies |
| Add stops and stations where necessary to meet regional mobility demand and consolidate stops where doing so would increase ridership and improve travel time | System Configuration Expansion of transit access to geographical areas underserved by transit | <ul style="list-style-type: none"> • Provide service within ¼ mile in __% of areas projected to have population density of 5,000/square mile (MBTA Coverage Standard) |

Additional Benchmarks for measuring progress at intervals during the 25-year horizon of the plan:

- Creation of 1,000 new parking spaces by 2011 (SIP commitment)

2. Take customers when they need to travel

| Objectives | Evaluation criteria | 25-Year PMT Evaluation Target(s) |
|--|---|---|
| Improve service frequency | Expediency Improvements to service frequency | <ul style="list-style-type: none"> • Provide frequency of services to meet projected demand and achieve the MBTA frequency and load standards |
| Decrease travel times | Expediency <ul style="list-style-type: none"> • Increase in travel speed • Reduction in travel time • Reduction in automobile travel time advantage | <ul style="list-style-type: none"> • Achieve SGR to eliminate need for speed restrictions • Reduce projected average travel time by mode by ___% • Reduce projected auto travel time advantage ratio by ___% |
| Increase the hours of service, particularly in the evening and late at night | System Configuration Expansion of transit access during time periods poorly served by transit | <ul style="list-style-type: none"> • Provide service hours to meet projected demand and achieve the MBTA, frequency and load standards |
| Increase off-peak and weekend service | | |

3. Give customers safe, comfortable service they can rely on

| Objectives | Evaluation criteria | 25-Year PMT Evaluation Target(s) |
|--|---|---|
| Improve operational safety and security | Customer Support/Safety <ul style="list-style-type: none"> • Enhancements to customers’ personal safety • Improvements to safety and security training for operators | <ul style="list-style-type: none"> • Implement Transportation Security Administration requirements • Achieve state of good repair to reduce potential for accidents • Bus: obtain training simulator capacity to train 1-2 drivers/garage/day on both north and south sides of the |
| Improve schedule adherence (through right-of-way improvements, signal coordination, intelligent transportation systems technologies, etc.) | Reliability and Comfort Improvements to reliability of service | <ul style="list-style-type: none"> • Obtain necessary automatic vehicle locator equipment (for use in the field and at central control) to fully monitor all vehicles |
| Ensure consistent operation of vehicle air conditioning and heating systems, and station elevators and escalators | | |
| Provide sufficient service to meet customer demand and reduce passenger crowding. | Reliability and Comfort Expansion of capacity where and when crowding occurs | <ul style="list-style-type: none"> • Provide service hours, days and frequency to meet projected demand and attain the service delivery policy standards |
| Provide customer amenities such as shelters, heated waiting areas, benches, and bike racks | Customer Support/Safety Provision of amenities where customers access service | <ul style="list-style-type: none"> • Provide shelters at ___% of bus stops • Provide bike racks on ___% of buses |
| Improve vehicle design and configuration | Reliability and Comfort Improvements to vehicle comfort and passenger circulation | <ul style="list-style-type: none"> • *Implement program to determine customer needs in terms of vehicle design |
| Provide clean stations and vehicles | Customer Support/Safety Enhancements to vehicle and station cleanliness | <ul style="list-style-type: none"> • Achieve cleanliness standards |

* Relates to a planning product and/or process rather than a capital investment

Additional Benchmarks for measuring progress at intervals during the 25-year horizon of the plan:

- Reduction in various types of crime on the system
- Reduction in accidents
- Reduction in the number of routes/lines that fail the schedule adherence standard
- Reduction in Mean Miles Between Breakdowns (MMBB)
- Reduction in Mean Miles Between Failures (MMBF)
- Reduction in dropped trips
- Reduction in customer complaints

4. Treat customers fairly and with respect

| Objectives | Evaluation criteria | 25-Year PMT Evaluation Target(s) |
|---|---|---|
| Ensure that the benefits and burdens of the transportation system are equitably distributed | <p>Fairness</p> <ul style="list-style-type: none"> • Provision of benefits that outweigh burdens in neighborhoods with substantial minority or low-income population. • Elimination of barriers to efficient travel between key destinations and neighborhoods with substantial minority or low-income population. | <ul style="list-style-type: none"> • Comply with EJ/Title VI “Quality of Service” requirements |
| Make the system accessible to persons with disabilities | <p>Accessibility</p> <ul style="list-style-type: none"> • Number of transit riders served • Improvements to ease of transfers between rail lines • Improvements to ease of transfers between rail lines and other transit modes • Expansion of access to major activity centers | <ul style="list-style-type: none"> • Achieve full accessibility of the MBTA system to persons with disabilities |
| Provide courteous and responsive customer service | <p>Customer Support/Safety</p> <p>Improvements to responsiveness and courtesy of employees</p> | <ul style="list-style-type: none"> • *Bus: Provide courtesy training to 1-2 operators/garage/day on both the north and south sides of the system |
| Provide training for drivers in how to be more courteous and responsive to customers | | |
| Provide drivers with strategies to deal with difficult or dangerous situations | <p>Customer Support/Safety</p> <p>Improvements to safety and security training for operators</p> | <ul style="list-style-type: none"> • *Develop training and rewards • *Involve the ROC in regular monitoring |
| Develop clear policies for drivers to follow and reward them for implementing them consistently | | |
| Provide incentives and rewards for drivers who excel in customer service | | |

*Relates to a planning product and/or process rather than a capital investment

Additional Benchmarks for measuring progress at intervals during the 25-year horizon of the plan:

- Compliance with all EJ and Title VI requirements
- Implementation of BCIL agreement
- Reduction in customer complaints

5. Keep customers well informed

| Objectives | Evaluation criteria | 25-Year PMT Evaluation Target(s) |
|--|---|--|
| Improve and increase station signs and maps Market MBTA services to make the public aware of their options Improve Web-based tools that assist customers in planning their trips | Customer Support/Safety Improvements to navigational tools | <ul style="list-style-type: none"> • Regularly update neighborhood and bus connection maps and network diagrams at every station entrance/exit • Provide robust web and mobile phone trip planner with real-time schedule and on-time performance functionality |
| Translate signage, etc., for limited-English-proficiency populations, including tourists | Customer Support/Safety Provision of customer information in languages other than English | <ul style="list-style-type: none"> • Translate all safety signs into international symbols systemwide • Provide access to real-time translation services at all MBTA points of contact • Implement oral and written translations in accordance with the MBTA’s Limited English Proficiency policy |
| Ensure that stop announcements are accurate, audible, and consistently implemented | Customer Information Improvements to reliability and quality of stop announcements | <ul style="list-style-type: none"> • Equip all vehicles with automated stop announcement capability |
| Make schedules readily available | Customer Support/Safety Expansion of schedule availability | <ul style="list-style-type: none"> • Regularly update posted schedules and make current schedules available for customer pick up at all stations • Regularly update posted schedules at all bus transfer points/activity hubs and make current schedules available for customer pick up on all buses |
| Provide real-time information to MBTA customers | Customer Information Improvements to availability of real-time service performance data | <ul style="list-style-type: none"> • Provide next train information at all rapid transit and commuter rail stations • Provide next bus information at Key Route bus stops with >100 boardings • Provide real time tracking information on the web for all modes |

Additional Benchmarks for measuring progress at intervals during the 25-year horizon of the plan:

- Increase in accuracy of announcements
- Reduction in customer complaints

Improve the MBTA’s impact on regional transportation and environmental protection

| Objectives | Evaluation criteria | 25-Year PMT Evaluation Target(s) |
|---|---|---|
| Increase transit ridership and the ratio of transit trips to auto trips in the region | Regional Transp. Impacts <ul style="list-style-type: none"> • Number of transit riders served • Number of new transit riders served • Change in transit mode share for the regional network | <ul style="list-style-type: none"> • Increase ridership to _____ rides/day • Increase transit mode share by ____% |
| Reduce energy use and emissions of air pollutants and greenhouse gases | Regional Transp. Impacts <ul style="list-style-type: none"> • Reduction in regional emissions | <ul style="list-style-type: none"> • Demonstrate projected levels of CO, NOx, and VOCs that are consistent with the regional emissions budgets • Reduce projected energy use at all MBTA buildings 35% by 2020 • Reduce projected CO₂ emissions from MBTA 40% by 2020 (80% by 2050) |
| Reduce other transportation-related pollution of the environment | | <ul style="list-style-type: none"> • Fully implement Environmental Management Systems • Subject all expansion projects to environmental reviews |

Additional Benchmarks for measuring progress at intervals during the 25-year horizon of the plan:

- Reduce projected energy use at all MBTA buildings 20% by 2012
- Reduce projected CO₂ emissions from MBTA operations 20% by 2012