BEYOND LECHMERE NORTHWEST CORRIDOR PLANNING PROJECT

Visiting Nurses Association
Somerville, MA

May 4, 2005

Minutes

Introductions

Joe Cosgrove opened the meeting at 12:20 PM. He asked those present to introduce themselves (see Attendance). Due to the limited time, Mr. Cosgrove asked Scott Peterson, CTPS, to present the results of the ridership modeling.

CTPS Ridership Modeling

Mr. Peterson reviewed the model used for travel demand forecasting. He said that the unit of analysis used is Traffic Analysis Zones, TAZs, which are composed of several block areas. In the mathematical formula in the model, the supply side is made up of transportation networks. For transit purposes, this includes the locations of stations, frequency of service, headways, run times, and connectivity of the system. The demand side is driven by the Metropolitan Area Planning Council (MAPC) population employment forecasts for the year 2025. The model eventually predicts trips by purpose broken down by time period: AM, midday, PM, and nighttime. These trips are then distributed over the TAZs for the base year and then for the year 2025. Mr. Peterson said that this model generated a lot of information that can also be used for Air Quality modeling and Environmental Justice modeling.

Mr. Peterson reviewed the Tier 2 alternatives included in the model: Alt. 1A (Green Line to West Medford); Alt. 1C (Green Line to West Medford and Union Square); Alt. 2B (BRT to West Medford and Green Line to Union Square); Alt. 3A (Commuter Rail Shuttle to West Medford); Alt. 3B (Commuter Rail Shuttle to Anderson RTC); Alt. 4 (Transportation System Management (TSM)). The model also contains some assumptions: (1) For Green Line alternatives, the current Lechmere-terminating service was extended north; (2) Run times were calculated using reasonable design criteria for the conceptual stage; (3) Station location and stops were conceptual at this point. Inputs coded into the model included station locations, routing, park and ride facilities, fares and headways. The model was then run for all four alternatives.

The No Build alternative, used as a benchmark, included all improvements in the Regional Transportation Plan slated for the year 2025 except for Green Line improvements northwest of Lechmere. All analysis was compared to the No Build except the "user benefit" indicator, a Federal Transit Administration (FTA) requirement, used to rank projects for funding purposes. The "user benefit" indicators were compared to the TSM alternative.

Mr. Peterson referred to a handout (attached) comparing the quantitative measures of the Tier 2 alternatives. He noted that ridership is the basis for all the analysis except for the cost figures.

He also defined the difference between a linked trip and an unlinked trip: a linked trip only counts a single trip (the entire journey) from origin to destination, even if there is one (or more) transfer (between Red and Green Lines for example) during the journey; an unlinked trip is counted as each part of the trip occurring between transfers on a specific mode/route. Thus, each linked trip (an entire journey) is made up of one or more unlinked trips.

Mr. Peterson then reviewed some of the data presented in the handout. He noted that Alt. 1A had the highest number of new linked trips transferring from another mode (walking or auto), primarily due to the alternative's service characteristics (3-minute headways). In Alt. 1C, service was split between West Medford and Union Square. The numbers were not as strong because extensive transit service (bus) exists in Union Square already. Because the Green Line did not operate a split service in Alt. 2B, the service characteristics were helped, as was ridership. This alternative was hurt by the transfer penalty from BRT to Green Line. Alt. 4 produced the lowest ridership. He also noted that the unlinked trips measure for Alt. 2B was huge because of the transfer from BRT to Green Line.

When reviewing the Transfer Rate measure (the ratio of unlinked trips to linked trips), he said to only pay attention to the sign (positive or negative). For example, Alt. 1A and 1C show a negative number that indicate a decrease in transfers. Alt. 2B denotes an increase in transfers. Alt. 3A, 3B and 4 show no change at the system level.

Bill White, Somerville Board of Aldermen, asked why there are fewer trolleys used in Alt. 1C (West Medford and Union Square) than Alt. 1A (West Medford) . Jan Okolowicz, PB, said that this is because the Alt. 1C split service means that one route only needs to go the one mile to Union Square instead of all four miles to West Medford. Mike McArdle, VHB, added that the number is based on miles and run time—each alternative was given the same level of service.

Melissa Bennett asked that the differences between linked and unlinked trips be explained again because she was late to the meeting. Mr. Peterson complied.

Jim McGinnis asked about the apparent less frequent headways in Alt. 1C, as compared to Alt 1A. Mr. Okolowicz said that because there was no overall increase of Green Line service north of Lechmere for Alt. 1C, service had to be split between the West Medford and Union Square branches. Therefore, there was less frequent service on the West Medford branch for Alt. 1C as compared to Alt. 1A. Mr. Cosgrove noted than an enhanced version of the alternative, with additional service, could be run, but it would need to be coordinated with MBTA Operations. Mr. McGinnis said he wanted to see the hours of user benefit for the Environmental Justice population compared to the general population. Mr. Peterson said that the model shows the benefits at origin and destination for each zone and he could research the alternatives compared to one another.

Ezra Glenn, City of Somerville, asked how good the numbers are. He pointed out that the ridership numbers presented are for new riders, but do not take into account people transferring from other transit modes (i.e., buses). Mr. Peterson agreed, saying that Alt. 1A generates about 63,000 riders, not just the approximately 14,000 new riders shown in the handout.

A participant noted that many ridership studies count the number of boardings. Mr. Peterson said that CTPS does not have station boarding information at this time. He said the comparable figure would be the 63,000 riders (boarders), not the new trips figures. The participant then asked about cost per rider. Mr. Cosgrove said the important figure was the cost per user benefit number. He said that $25 per user benefit was the current standard for funding eligibility and it may be lowered to $20. Mr. McArdle said the current figures for this project for the alternatives make the project very competitive.

Ellin Reisner asked if the user benefit was calculated for new riders. Mr. Peterson said it was based on all the riders in the system.

Jim Gallagher, MAPC, asked why the user benefit measure is compared to the TSM instead of the No Build. Mr. McArdle said the federal government requires the comparison to a baseline alternative.

Wig Zamore said that he thinks that the alternatives should be compared using equal headways in order to develop a base level of understanding. He asked what projects are part of the 2025 assumptions, specifically mentioned the Urban Ring. Mr. Peterson said the Urban Ring is included in the Regional Transportation Plan so is in this model. Mr. Cosgrove noted that the projects overlap notably at Union Square. Mr. Peterson said there is a slight interaction because of the overlap, but more detailed investigation is needed to catalogue the interactions.

Joe Lynch asked how bus traffic within Union Square affects the travel time. Mr. Peterson said that transferring and saturation of the market are taken into consideration. Mr. Cosgrove said that the bus schedules would likely be adjusted if the project proceeded.

Lee Auspitz wanted more clarification as to why the headways between Alt. 1C and 2B yielded such different results. Mr. Peterson said it was because the model assumes a one-mile catchment area for transit riders. People could walk to Union Square and take the Green Line instead of BRT, to eliminate the transfer. Mr. Auspitz then noted that the model was not dynamic and did not included population and employment driven by the existence of the transit. He asked if this dynamic would be reflected in the final report. Mr. Peterson said that FTA requires a fixed supply so comparison can be made equally for projects across the country. Mr. Cosgrove noted that if the project advances, the team will develop environmental impact reports which will take into account Land Use, affordability, etc. for the Environmental Impact Statement (EIS). John Weston, PB, said that FTA may weight an issue like Land Use heavier in a New Starts application and look at zoning around potential stations. Mr. Zamore asked if this was similar to Silver Line Phase 2. Mr. Cosgrove agreed that that project was highly rated for Land Use.

Lauren DiLorenzo, City of Medford, asked why there was not a separate alternative looking at a Green Line extension to Medford Hillside only. Mr. Cosgrove said the project was still being defined at this time and boardings by station (which include Medford Hillside) will be made available. Ms. DiLorenzo said she wanted to analyze the impacts of both alternatives so as not to exclude options. Mr. Lynch noted that recently there was been vocal support in Medford to terminate the line before West Medford. He said terminating the project at Hillside drops the cost and ridership.

Mr. White asked if ridership is based in part on headway times. Mr. Peterson said that the model is mode specific and said, for example, that buses and light rail are not perceived to be the same. Passenger boardings onto local and express transit uses are penalized (in terms of travel time) in the model to reflect a passenger bias against this particular mode. Mr. Cosgrove said the alternatives can adjusted to do different things. Mr. Okolowicz said the CTPS model has shown that ridership in this particular corridor is very sensitive to headways, pointing to the lower ridership for the relatively less frequent proposed commuter rail service. He added that the bus penalty does not apply to BRT service.

Status of Alternatives Analysis

Mr. McArdle then presented the cost results, also summarized on the handout. He said that the costs were calculated using a conceptual model then a 50% contingency was added for unknowns, per federal guidelines. For Alt. 1A, the big cost was the construction of Green Line tracks (including a bridge over the river) and construction of a station south of the High Street intersection at West Medford. He said that FTA looks at annualized capital costs. Operating and Maintenance (O&M) costs are figured as part of the MBTA cost model, approved by FTA.

Mr. McArdle reviewed some of the costs associated with each alternative:

- Alt. 1A—overhead bridges need repair
- Alt. 1C—commuter rail track relocation and bridge replacement (assumed an at-grade track from Lechmere to Union Square although grade separated track and street running tracks may also be considered)
- Alt.2B—BRT less expensive due to the relative low cost of the vehicles and less systems work (no overhead system and simpler signaling)
- Alt. 3A—need to add 3rd track plus signal modifications, some bridge modification

Mr. McGinnis expressed concern that transit dependent riders are unfairly burdened by transfer fees (bus to subway). He asked if free transfers were a part of the model. Mr. Peterson said that fares included in the model were coded based on existing conditions. Mr. McGinnis asked if a plan that would allow a one-seat ride, depriving the MBTA of the second fare for transferring modes, would be viewed as an additional cost for an alternative. Mr. Peterson said that the model examined average transit times for the environmental justice populations relative to other populations.

Ms. Reisner asked if the team studied different costs for different options for getting to Union Square. Mr. Cosgrove said this was not done for this planning phase.

Mr. Cosgrove said that the Commonwealth will be issuing recommendations for projects as part of the State Implementation Plan (SIP) and substitution process within the next few weeks. He said it was important to tie up loose ends of a project now before it is designed and engineered so it can advance.

Mr. Lynch asked if these alternatives will be recommended. Mr. Cosgrove said that this project is one of many that the Metropolitan Planning Organization (MPO) will be examining. Mr.

Lynch asked if going back to request additional funding would mean trouble for the project. Mr. Cosgrove said that some of the criteria for advancement is the project's readiness and ability to meet deadlines.

Ms. Bennett asked how cost is derived for issues like commuter parking and service support. Mr. McArdle said that it would be necessary to acquire some right-of-ways for turnaround and maintenance facilities. Park and ride and other parking needs are examined in the next phase (EIS). Ms. Bennett asked if this was allowable. Mr. McArdle said it was and that was one of the reasons for such a high contingency.

Mr. McGinnis asked about the overall feasibility of the project, specifically about environmental concerns. Mr. McArdle said there do not appear to be any based on initial observations. John Burckardt, PB, said that a new Mystic River crossing (bridge) has some environmental impacts, and that seemed to be the biggest issue.

Ms. DiLorenzo said that for planning purposes, she needs more information before she can offer an opinion on the project. Mr. Cosgrove said that many of her concerns are issues for the design phase.

Mr. Cosgrove reminded the group that the legal commitments are in the process of being re-evaluated. He said that the process has been set up and public hearing already held. He said the results of this study were being considered, and the MPO will be making its recommendations soon. There will be a public process associated with these recommendations, probably over the summer, and the recommendations will be given to the federal government in October. He added that this is a competitive project and will likely be highly rated.

Mr. Lynch asked if the original legal commitments included Tufts. Mr. Cosgrove said there were discrepancies, and Medford Hillside and Ball Square were both mentioned.

Mr. Auspitz asked if the Air Quality results showed significant reductions. Mr. Peterson said the Alt. 1A showed the most significant results, but Alt. 1B and 1C also have strong reductions. Mr. Auspitz asked if the reductions were enough to prevent a lawsuit. Mr. Cosgrove said the Executive Office of Transportation (EOT) is committed to implementing transit projects that have110% improvement in air quality benefit over the impact of the existing package of transit mitigation measures. He said these results go a long way to meeting that air quality commitment.

Mr. Glenn asked if bus service will be reduced because people are diverted to alternative transit. Mr. Okolowicz said that bus service adjustments will be dealt with in the next phase in conjunction with station site planning.

Mr. Peterson briefly reviewed Environmental Justice employment opportunities.

Issues/Next Steps

Mr. Cosgrove said that over the next few weeks, the SIP issue will be resolved. Also, the Alternatives Analysis draft report will be sent to the Advisory Group. If the project is advanced, the EIS and Preliminary Design phase will begin. He noted that the Advisory Group may need to be reconstituted, perhaps as a Citizens Advisory Committee.

Mr. Glenn asked if there is funding for the next phases. Mr. Cosgrove said the state announcement on the transit commitments should have more funding details. He added that the numbers presented make a case that the project is a strong candidate to be advanced but no final decision in that regard has been made.

Open Comments

Mr. Zamore thanked Mr. Cosgrove for doing the study. He announced that the MPO was meeting the next night and had a tentative meeting scheduled for May 12th. He said that issues like Land Use will need to be justified by the people, not an agency like the MBTA, using Transit Oriented Development after this phase. He urged the City of Medford to push for an understanding of Land Use planning to keep the project moving. He also added that the public process for this stage of the project has been great. Mr. Cosgrove thanked the Advisory Group for helping to mobilize the public around the project.

Brooks Daverman, Office of Representative Sciortino, noted that funding for the environmental study of this project has been included in the amendment to the House budget. The budget is currently being sent to the Senate. Mr. Cosgrove said this was an important issue, noting that the project was not funded as part of the Transportation Bond Bill.

Bob Feigin said he thought the results presented at the meeting were terrific, and he was grateful for the work of the MBTA. He noted that there needs to be more discussion within Medford, and said that there were some "non-wobbly" people from Medford. Mr. Cosgrove said the this could be filtered through the public process set up by the MPO.

Ms. DiLorenzo said she believed the MBTA needs to work on Land Use. Mr. Cosgrove said that the state is interested in forming partnerships with communities for smart growth.

Mr. Lynch thanked Mr. Cosgrove and also recognized the staff from other elected officials present (see Attendance). He added that while Land Use needs to be maximized, the existing 75-80,000 Somerville residents and their need for better Air Quality should not be forgotten.

The meeting was adjourned at 2:10 PM.

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Attendance

J.L. Auspitz*	
Jeff Bennett*	Charles River TMA
Melissa Bennett*	
John Cole*	
Brooks Daverman	Office of Rep. Sciortino
Lauren DiLorenzo*	City of Medford
Bob Feigin*	
Jim Gallagher	MAPC
Adam Knight	Office of Senator Shannon
Ken Krause*	
Jeff Levine*	
Lisa E. Lepore	City of Somerville
Joe Lynch*	
Jim McGinnis*	STEP
Brock Parker	Somerville Journal
Catherine Preston*	City of Cambridge
Ellin Reisner*	STEP
Barbara Rubel*	Tufts University
Jason Schrieber*	City of Cambridge
Mark Sternman	Office of Senator Kerry
Clodagh Stoker-Long	City of Medford
Lucy Warsh*	City of Somerville
Bill White*	Somerville Board of Aldermen
Rick Willette*	City of Somerville
Wig Zamore	

* denotes Advisory Group member

Dan Breen	MBTA
John Burckardt	PB
Regan Checchio	RVA
Joe Cosgrove	MBTA
Ben Dowling	CTPS
Mike McArdle	VHB
Jan Okolowicz	PB
Scott Peterson	CTPS
Rob Swierk	VHB
Chris Toepel	MBTA
John Weston	PB

Comparison of Tier 2 Alternatives - Quantitative Measures

Indicator	Alt. 1A Green Line to West Medford	Alt. 1C Green Line to West Medford/Union Square	Alt. 2B BRT to West Medford and Green Line to Union Square	Alt. 3A Commuter Rail Shuttle to West Medford	Alt. 3B Commuter Rail Shuttle to Anderson RTC	Alt. 4 Transportation System Management
Operating Characteristics						
A. Headways (Peak Periods)	3 minutes	West Medford Branch: 5 min. Union Square Branch: 7 min.	West Medford Branch: 3 min. Union Square Branch: 3 min.	15 minutes	15 minutes	Medford Hillside Circulator: 20 min. Routes 80, 87, 88, 101: 10 min.
B. Vehicle Requirements	38 Green Line trolleys	32 Green Line trolleys	21 Green Line trolleys; 14 60-foot BRT buses	29 bi-level coaches; 5 locomotives	40 bi-level coaches; 7 locomotives	12 40-foot buses
Ridership						
C. Systwm-Wide Linked Trips, 2025 (daily, relative to No-Build)	14,160	10,060	10,590	1,670	1,890	1,580
D. System-Wide Unlinked Trips, 2025 (daily, relative to No-Build)	9,110	1,600	31,300	2,240	2,560	2,080
E. Transfer Rate, 2025 (System-wide ratio of unlinked trips to linked trips; relative to No-Build)	-0.01	-0.01	0.01	0.00	0.00	0.00
Highway/Auto Travel						
F. Vehicle Miles of Travel, 2025 (daily, relative to No-Build)	-64,500	-52,800	-50,900	-8,700	-10,000	-6,200
G. Auto Person-Trips Shifted to Transit (daily, relative to No-Build)	13,320	9,660	9,760	1,610	1,830	1,390
System Capacity/Access to Opportunity						
H. Revenue-Vehicle Hours of Service Added (annual, relative to No-Build)	129,250	101,043	122,281	12,152	18,032	27,612
Environmental-Air Quality						
Emissions Associated with Highway/Auto Travel						
I. Volatile Organic Compounds (daily kg, relative to No-Build)	-8	-5	-4	-3	-4	-4
J. Nitrous Oxide (daily kg, relative to No-Build)	-18	-14	-2	-3	-3	0
K. Carbon Monoxide (daily kg, relative to No-Build)	-555	-393	-364	-20	-32	-28
Emissions Associated with Added Transit Service						
L. Volatile Organic Compounds (daily kg, relative to No-Build)	Emissions at power plant rather than at		0	0	0	0
M. Nitrous Oxide (daily kg, relative to No-Build)	vehicle/tailpipe; emissions may vary widely		77	19	44	39
N. Carbon Monoxide (daily kg, relative to No-Build)	depending on utility fuel mix		6	5	9	3
Environmental Justice						
O. Accessibility - Employment Opportunities within 40 minutes by transit (relative to No-Build)						
EJ TAZs in Medford	+6.53%	+5.01%	+3.89%	+1.96%	+2.77%	+1.56%
EJ TAZs in Cambridge	0.00%	0.00%	0.00%	0.00%	0.00%	+2.78%
EJ TAZs in Somerville	+8.43%	+6.24%	+5.65%	+3.07%	+3.50%	+0.94%
Conceptual Costs						
P. Total Capital Cost (millions of 2005$)	$390.0	$438.0	$340.0	$171.0	$347.0	$4.6
Q. Annualized Capital Cost (millions of 2005$)	$29.9	$33.2	$25.4	$13.7	$26.9	$0.6
R. Annual O&M Cost (millions of 2005$)	$9.9	$8.7	$11.1	$3.7	$5.4	$1.8
S. Annual Fare Revenue (millions of 2005$)	$4.9	$3.4	$4.0	$0.6	$1.2	$0.2
T. Incremental Annual Cost (Q+R-S)	$35.0	$38.6	$32.5	$16.7	$31.1	$2.2
User Benefit/Cost-Effectiveness						
U. Annual Hours of User Benefit, 2025 (relative to TSM)	3,645,600	2,540,160	2,372,580	49,980	67,620	205,800 (relative to No-Build)
V. Cost Per Hour of User Benefit, 2025	$9.59	$15.19	$13.70	$334.91	$460.23	$10.54