

# Draft Memorandum for the Record

## Boston Region Metropolitan Planning Organization Meeting

### December 5, 2013 Meeting

10:15 AM – 1:15 PM, Franklin Town Hall, 355 East Central Street, Franklin, MA

Clinton Bench, Chair, representing Richard Davey, Secretary and Chief Executive Officer, Massachusetts Department of Transportation (MassDOT)

### Decisions

The Boston Region Metropolitan Planning Organization agreed to the following:

- approve two work programs:
  - *MassDOT Title VI Program: Development and Support*
  - *Transportation Investments for Economic Development*
- approve the minutes of the meeting of November 7, 2013

### Meeting Agenda

#### 1. Public Comments

There were none.

#### 2. Chair's Report—*Clinton Bench, MassDOT*

David Mohler has been named Deputy Secretary of Policy at MassDOT. C. Bench, Director of Planning at MassDOT, will now be regularly chairing the MPO meetings. In his absence, Ned Codd, Director of Project Oriented Planning at MassDOT, will serve as chair.

#### 3. Committee Chairs' Reports

There were none.

#### 4. Regional Transportation Advisory Council Report—*David Montgomery, Chair, Regional Transportation Advisory Council*

The Advisory Council meeting in November featured a presentation by Jane Lapin of the Volpe Center on the use of advanced travel information technology, and a presentation on the Callahan Tunnel Rehabilitation project. The Advisory Council also held a program planning session regarding activities for the coming year.

The Advisory Council will meet next on December 11. On the agenda is a presentation by Marie Trottier, Assistant General Manager of Systemwide Accessibility at the MBTA,

on transit rider access issues, and a presentation by the MPO staff on the development of the MPO's certification documents: the Long-Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Unified Planning Work Program (UPWP).

**5. Executive Director's Report—*Karl Quackenbush, Executive Director, Central Transportation Planning Staff***

A Human Services and Equity in Transportation Forum will be held on January 14, 2014. The event is sponsored by the MPO, the Metropolitan Area Planning Council (MAPC), MassDOT, and the Executive Office of Health and Human Services. The forum is focused on enhancing collaboration between transportation providers in the region, and fostering discussion about how to strengthen the network of services provided to populations that have had difficulty accessing or paying for transportation services. The forum is also expected to expand the MPO's network of contacts. A flyer and prospectus about the event was distributed.

In response to questions from Laura Wiener, At-Large Town of Arlington, and Tom O'Rourke, Three Rivers Interlocal Council (Town of Norwood/NVCC), staff confirmed that they will contact municipal Councils on Aging directly to invite them to this event and that materials about the event will be made available for members who would like to help publicize the event.

**6. Welcome from Host Municipality—*Jeffrey Roy, State Representative, Jeffrey Nutting, Town Administrator, Town of Franklin, and Gino Carlucci, Chair, South West Advisory Planning Committee***

Representative Roy welcomed the MPO to Franklin. The town of about 34,000 residents was the fastest growing town in Massachusetts during the 1990s. It is home to the oldest free public library in America and it is the birthplace of Horace Mann, the father of public education. There are two commuter rail station stops in Franklin, and two exits off Interstate 495. Regarding transportation issues, Representative Roy noted that his office has received calls about potholes on Interstate 495, which MassDOT has repaired. He thanked the MPO for coming to Franklin.

J. Nutting then gave members an overview of Franklin, which he noted is incorporated as a city. The town recently invested \$100 million to build a new high school, and is investing in other projects, including a sculpture park and recreation area, to improve quality of life in the town. A \$7 million transportation project is currently out to bid. The project will reconfigure the downtown, make streetscape improvements, and improve pedestrian access. A \$5 million earmark from the 2005 state bond bill is funding this project.

J. Nutting also spoke about other transportation issues facing the town and distributed a handout with a written summary of those issues. MBTA trains park and idle in the downtown area overnight, which constrains economic development in the downtown area. The town is working with the MBTA regarding this issue. He expressed the importance of regional transit authorities to towns such as Franklin, and he noted that the Greater Attleboro Taunton Regional Transit Authority (GATRA) has been a great asset to the town. Like many other towns in the region, Franklin needs more funding to maintain its roadway infrastructure. The town is working on the SNET bicycle trail.

In closing, J. Nutting noted that Franklin received funding through the MPO's TIP in the 1990s for its transportation projects. Now, however, the town is reluctant to spend its own funds on engineering studies because there is such a long wait for municipalities to access TIP funding for construction, and by the time TIP funding does become available, MassDOT may require expensive redesigns. He expressed the need for a dialog to address this issue.

G. Carlucci then gave an overview of the South West Advisory Planning Committee (SWAP) subregion, which is comprised of ten towns with Franklin and Milford being the largest. Major roadways in the subregion are Interstate 495, Route 109, and Route 140. Route 109 in Medway, which is important as this roadway provides a direct connection to Boston, is to be rebuilt. Route 140 is also an important roadway that connects the rapidly developing towns in the subregion. A study on Route 140 is being considered for inclusion in the MPO's FFY 2015 UPWP.

G. Carlucci noted that the SWAP subregion experienced significant growth in the 1990s. The subregion grew by 17% during that decade, outpacing all other MAPC subregions. SWAP's growth rate continued to exceed overall growth in the state in the 2000s, and MAPC is projecting that the subregion will continue to grow by about 5.5% to 2039.

He expressed that it has been tremendously helpful to the region to be able to use some of its MBTA assessment to fund GATRA. He also thanked the MPO for funding the SWAP Transit Study in last year's UPWP. Action is being taken on some of the study recommendations, including an application to study Dial-a-Ride programs to coordinate dispatch.

### ***Discussion***

Following the introductory remarks, several members had comments.

On behalf to the Town of Medway and himself, Dennis Crowley, South West Advisory Planning Committee (Town of Medway), expressed appreciation to the MPO board that voted to incorporate subregional members.

Referencing G. Carlucci's comment about consolidating the dispatch service for the Dial-a-Ride program, C. Bench discussed the upcoming Human Services and Equity in Transportation Forum's relevance to that topic. He noted that the core mission of the Statewide Coordinating Council on Community Transportation, which is a sponsor of the forum, is to find ways to regionalize dispatch services and provide information about demand-responsive service.

D. Crowley discussed concerns that results are not always seen following MPO studies. He noted that SWAP is aiming to implement recommendations from the recent SWAP study.

### **7. Work Programs—Karl Quackenbush, Executive Director, Central Transportation Planning Staff**

K. Quackenbush introduced two new work programs and members discussed them.

#### ***MassDOT Title VI Program: Development and Support***

Through the work program for the *MassDOT Title VI Program: Development and Support*, the MPO staff will continue to provide assistance to MassDOT on the implementation of the agency's Title VI program as it relates to both FHWA's and FTA's Title VI requirements. All recipients of federal funds must demonstrate conformity with Title VI of the Civil Rights Act of 1964. The MPO staff has been working with MassDOT and the MBTA over the past few years to ensure its compliance with Title VI requirements of both the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

Through this work program the MPO staff will continue to support MassDOT's Office of Diversity and Civil Rights with the implementation of the Title VI program. This work involves assisting that agency to produce a triennial report, which is due to the FTA. The MPO staff will help to document information, craft a public outreach program, develop training protocols, support the public engagement process, produce a Public Participation Plan, provide technical assistance on language access initiatives, and conduct a process to identify benefits and burdens.

This work program will be funded by MassDOT. The project is included in the FFY 2014 UPWP, but CTPS will be recruiting new staff for its Transit Planning Group to complete this work because it is being funded at a higher level than anticipated in the UPWP.

***Discussion***

In response to a question from Marie Rose, MassDOT, K. Quackenbush reported that staff will be working with John Lozada and Greg Sobczynski, at the MBTA's Office of Diversity and Civil Rights.

M. Rose then inquired if the work program would include the mapping of populations with limited-English proficiency (LEP) and when that product would be completed. (This tool would allow MassDOT staff to identify appropriate languages in which to provide meeting materials for public outreach meetings.) C. Bench replied that MassDOT's Office of Transportation Planning is working with CTPS to develop this product. A pilot version of the tool has been completed and will be available in a couple of months.

Michael Chong, FHWA, asked how this scope of work would complement the Public Participation Plan that was developed by the MBTA's Office of Diversity and Civil Rights. K. Quackenbush replied that the MPO staff helped that office to develop their Public Participation Plan; this new work program would be a continuation of the public participation work. C. Bench added that more work needs to be done to make certain elements of that plan operational. The plan is intended to assure the full participation of people with limited-English proficiency and assure that the way MassDOT conducts its public participation process will not be burdensome to people in minority or low-income neighborhoods. Issues that will be addressed include identifying the location of accessible meeting facilities, provision of translation services and documents in alternate formats, and identifying community service and advocacy organizations for conducting outreach.

In response to a question from D. Montgomery about the role of the Advisory Council in MassDOT's outreach, C. Bench noted that the Advisory Council could be helpful in terms of reaching out to the public to announce public meetings.

James Errickson, At-Large City of Everett, suggested using existing outreach contacts, such as those developed through MAPC's visioning processes, to avoid duplicating previous efforts. C. Bench then described how the Title VI policies of MassDOT and the Boston Region MPO are closely aligned considering that MassDOT has continued to call upon CTPS to work on its Title VI program since CTPS first developed a Title VI program for the MBTA. This association will help ensure that there will be no duplication of past efforts. He also stated that outreach lists compiled by MAPC and CTPS have been integrated into the LEP mapping tool. Municipal contact lists will be incorporated after MassDOT surveys municipalities over the course of the next six months, as required by FHWA.

Christine Stickney, South Shore Coalition (Town of Braintree), asked if the new staff person that CTPS will hire will be working only on the triennial report or also on the implementation of MassDOT's Title VI work. She also asked why, the new staff person would not be hired by the MBTA's Office of Diversity and Civil Rights. K. Quackenbush replied that CTPS staff will help to write and produce the triennial reports; however, the implementation of Title VI activities is MassDOT's responsibility (though MassDOT may call upon CTPS to work on Title VI activities). He then explained why a new staff person is needed at CTPS. While it was not clear at the beginning of this budget cycle whether more staff would be needed at CTPS, as the Title VI work crystalized it became clear that CTPS's Transit Service Planning Group would have enough work to sustain a new hire. That person may work on Title VI or other activities, or possibly relieve another staffer who can then take up the Title VI work. He explained that historically CTPS has received about one-third of its funding from agencies and that the funding of this new position would not be a departure from past practices. He discussed the need for CTPS to be responsive to the needs of both the MPO and agencies. He also pointed out that CTPS would still be within the staff levels allotted in the current budget.

D. Crowley asked if there was a possibility for a renewal of this contract next year, and what the implications would be to staff levels if the contract were not renewed. K. Quackenbush replied that it is possible that the contract would be renewed. He explained that CTPS is very conservative in its hiring and that the agency will not hire new staff unless there is a high probability that a new staffer will have sufficient work for a couple of years. CTPS anticipates that, even without this contract being renewed, there would be sufficient work for a new hire.

D. Crowley expressed that he would not like to see overhead costs increase. K. Quackenbush noted that the MPO's Administrative and Finance Committee approves a modest overhead rate each year and that this work is within the parameters of the work that CTPS has traditionally done.

Ed Tarallo, North Suburban Planning Council (City of Woburn), asked if the anticipated hiring would bring CTPS staffing levels close to the 63 positions approved in the budget. K. Quackenbush replied that the staffing level would remain within the approved number of positions. CTPS has about 58 staff members currently.

A motion to approve the work program for the *MassDOT Title VI Program: Development and Support* was made by the Minuteman Advisory Group on Interlocal Coordination (Town of Bedford) (Richard Reed), and seconded by the North Suburban Planning Council (City of Woburn) (E. Tarallo).

Prior to the vote, Robin Mannion, Deputy Executive Director, provided assurance that a new staffer hired to work on this project would not be at risk of being laid off if the contract were not renewed next year. She noted that CTPS often hires people with flexible skill sets. Given that there is likely to be some attrition of staff over the next year or two and that there is ebb and flow of work between work groups, there is a high probability that the new hire's skills could be applied to other projects.

Members then took a vote on the motion. The motion carried.

### ***Transportation Investments for Economic Development***

Through the work program for the *Transportation Investments for Economic Development* project the MPO staff will test a new web-based software, TREDIS. K. Quackenbush reminded members that among his objectives as Director of CTPS are those pertaining to expanding staff's expertise and improving MPO decision-making. This new tool will allow staff to bring another dimension of information on the economic consequences of transportation investments to the MPO's LRTP planning process and therefore serve both of those objectives. In the past, planners have talked a lot about the perceived linkages between transportation investments and the economy but have not had any hard numbers to cite in these discussions. Hopefully, that will now change.

TREDIS was developed by a Boston area firm and was applied by them during the planning of two MassDOT projects, South Coast Rail and the Lowell Interchange. Through these projects, staff became familiar with the software and we recently purchased a license for it. In this project, staff will begin to put the software through its paces by using already programmed LRTP projects as a test case.

TREDIS can take outputs from the MPO's regional travel demand model – such as estimates of travel times and emissions – and estimate effects of particular investment scenarios on economic factors – such as job growth, personal income, and tax consequences. Through these test cases, staff will determine what the best inputs to TREDIS are and what outputs are most useful for decision-making.

This work program is included in the FFY 2014 UPWP. The work will coincide with scenario testing for the LRTP.

### ***Discussion***

Jim Gillooly, City of Boston, asked about the application of TREDIS on the South Coast Rail project. Scott Peterson, MPO staff, explained that CTPS was hired by MassDOT to conduct travel demand forecasting and environmental justice analyses for South Coast Rail scenarios. MassDOT hired the Economic Development Research (EDR) Group, the developer of TREDIS, to research the potential economic benefits of the project. CTPS

provided travel data to the EDR consulting team. EDR identified a number of economic development metrics, such as job growth and disposable income. The work program the MPO is considering today would identify those metrics that would be most useful for the MPO's planning work.

J. Gillooly noted that federal Transportation Investment Generating Economic Recovery (TIGER) grant applications have an economic analysis component. He asked if this tool would be accepted for those applications. K. Quackenbush replied that TREDIS has been used for TIGER applications. S. Peterson added that it is consistent with the criteria for TIGER and FTA's New Starts applications.

J. Errickson asked if any successful TIGER applicants used TREDIS data. K. Quackenbush replied that staff has literature from EDR Group that lists the TIGER awardees that used TREDIS.

Sreelatha Allam, MassDOT, asked if the results from TREDIS would be validated against other known data. S. Peterson replied that there is potential to conduct sensitivity analyses in this work program, however, he also noted that economic benefits from projects take a long time to appear, so it may not be easy to discern the benefits at this stage. K. Quackenbush spoke about the importance of validating model results. He noted that in this case, where the time horizons for results are long, staff can use other methods, such as seeing if the results track in a way that makes intuitive sense or in ways that are consistent with past economic performance and economic theory.

A motion to approve the work program for the *Transportation Investments for Economic Development* project was made by the Inner Core Committee (City of Somerville) (Tom Bent), and seconded by the MBTA Advisory Board (Paul Regan).

Members continued to discuss the work program.

T. Bent inquired whether staff would be interacting with the Executive Office of Housing and Economic Development (EOHED) on this project given that transportation projects that the MPO considers are often spurred by development plans. S. Peterson explained that there is a possibility of linking TREDIS to the land use model, which can use population and employment projections (provided by MAPC), to predict shifts in population and employment that might occur as a result of new development or new transportation sources. The model can also take into account priority development areas and priority preservation areas, which are identified by MAPC. The data that MAPC provides gives an indirect link between CTPS and EOHED.



Dennis Giombetti, MetroWest Regional Collaborative (Town of Framingham), asked about the inputs to TREDIS. K. Quackenbush explained that the transportation inputs, such as travel times and costs, would come from CTPS. S. Peterson added that there is a large amount of economic data in TREDIS, including data on job classification, wages (at the county level), and property valuations. One goal of the project is to understand which metrics are useful for the MPO. D. Giombetti urged staff to use caution when reviewing outputs from TREDIS since some of the input data are subjective measures.

David Koses, At-Large City of Newton, asked if the findings of this work program could have an impact on the economic development criteria that the MPO currently uses to evaluate TIP projects. S. Peterson replied that staff has confidence that the TREDIS model would be sensitive to projects of a regional scale, but it is unknown if it would be sensitive to smaller projects. K. Quackenbush added that staff intends to keep the scale of analysis on large projects or collections of large projects. If staff finds that finer grained detail can be obtained, staff can consider offering that information to the MPO.

E. Tarallo asked staff to be cautious about missing impacts associated with changes to income levels and demographics that are not driven by job related changes. He cited, as an example, demographic changes that occurred in Malden when the Orange Line was extended to that city. K. Quackenbush noted that there is still much that staff does not know about the results TREDIS will produce. He explained that staff plans to link the land use allocation model to TREDIS, which will hopefully make the outputs of TREDIS richer by capturing additional metrics associated with economic development. He stated that staff will be conservative when using the results from TREDIS.

Richard Canale, At-Large Town of Lexington, asked about the interaction that staff expects to have with other MPOs that have used TREDIS. K. Quackenbush noted that staff might interact with other MPOs to see how they are using TREDIS in their LRTPs, for example.

A motion to approve the work program for the *Transportation Investments for Economic Development* project was made by the Inner Core Committee (City of Somerville) (T. Bent), and seconded by the North Suburban Planning Council (City of Woburn) (E. Tarallo). The motion carried.

### **8. MPO Meeting Minutes—Maureen Kelly, MPO Staff**

A motion to approve the minutes of the meeting of November 7, 2013 was made by the City of Boston (J. Gillooly), and seconded by the Inner Core Committee (City of Somerville) (T. Bent). The motion carried. MAPC abstained.

## **9. Memorandum: Performance Measures—Anne McGahan, MPO Staff**

The MPO had its first discussion of performance-based planning in March 2013 when staff presented a memorandum on that topic. For today's discussion, members were provided with a memorandum titled, *Next Steps in the Development of Performance Measures*. A. McGahan provided an overview of the material in this memorandum and discussed the development of performance measures and the development of the LRTP document, which are two tasks in the work program for the *Long-Range Transportation Plan, FFY 2014*.

Several key definitions used in the discussion are as follows:

- *performance-based planning and programming*: practices that apply performance management principles to transportation system policy and investment decisions in order to achieve performance goals
- *performance measure*: a metric used to assess the progress toward meeting a goal
- *performance target*: a specific level of performance desired to be achieved within a certain timeframe
- *goal*: a broad statement that describes a desired end state
- *objective*: a specific, measurable statement that supports the achievement of a goal

The federal transportation legislation, MAP-21, requires state DOTs and MPOs to develop performance measures and targets. MAP-21 outlines seven national goals for improving the transportation system focused on the following topics: safety; infrastructure condition; congestion reduction; system reliability; freight movement and economic vitality; environmental sustainability; and reduced project delivery delays. MAP-21 also specifies performance measures that state DOTs and MPOs should adopt under five program areas: National Highway Performance Program (addressing bridge and pavement management); Highway Safety Improvement Program (assessing injuries and fatalities); Congestion Mitigation and Air Quality Program (addressing traffic congestion and emissions); National Freight Movement (assessing freight movement); and Transit Program (assessing state of good repair). FHWA has not yet released guidance on highway performance measures. FTA has amended its transit rules to include the MAP-21 requirements.

MAP-21 requires the MPO to coordinate with MassDOT on the development of performance measures. MPO staff met with the MassDOT's divisions to discuss the performance measures that agency is developing. MassDOT is finalizing a statewide multi-modal plan, *We Move Massachusetts*, which will use a scenario planning

approach to prioritize transportation investments. The performance measures developed under this plan will be used to develop MassDOT's five-year Capital Investment Program. MassDOT's Office of Performance Management and Innovation will report on progress monthly. MassDOT's Office of Transportation Planning is developing performance measures for tracking greenhouse gas emissions under its GreenDOT policy. The MBTA is developing a Transit Asset Management Plan and tools for monitoring the state of good repair of assets.

MAP-21 directs MPOs to measure and report on the performance of the transportation system based on the results of the MPO's programming of funds. Staff is proposing that the MPO develop its performance measures based on the visions and policies of the LRTP. In 2010, the MPO adopted a central vision, seven vision topics, and associated policies in the LRTP, *Paths to a Sustainable Region*. Staff is proposing to continue with the central vision for the new LRTP, and to distill the vision topic areas and policies to focus on performance. The visions and policies would be referred to as goals and objectives.

Staff is proposing that the MPO develop goals to address key desired outcomes, supporting objectives or specific measurable statements for the achievement of those goals, performance measures use for comparing alternative investment strategies, and targets for tracking results over time. Staff has identified several themes from *Paths to a Sustainable Region* that it is proposing for the new LRTP: System Preservation; Congestion Reduction; Safety and Security; Transportation Options/Mode Share; GHG Reduction; and Economic Impact. These themes correspond to national goals.

A. McGahan provided an example to show how a goal from the LRTP could be used to develop an objective, measure, and target, and how performance would be tracked and reported in the MPO's certification documents. Performance data would be tracked through the Needs Assessment of the LRTP. This data would be used in the project selection criteria for the TIP and could be tracked annually. The criteria used to select studies for the UPWP would also be updated, and before-and-after studies could be conducted to determine if the MPO is funding studies that are meeting its targets.

To summarize, the MPO staff is proposing to keep the central vision of the current LRTP and the project selection criteria based on MPO goals. Staff is proposing to: change the current vision topics and policies to goals and objectives; develop specific performance measures with targets; track performance measures; and revise project selection criteria as necessary.

The next steps are to finalize the process for developing performance measures, and to develop goals, objectives, performance measures, and targets for other themes. Staff will report back to the MPO in February 2014.

***Discussion***

R. Canale complemented staff on their work. He then asked where factors such as Complete Streets policies would fit into performance measures. A. McGahan replied that they could be included under the themes of livability or GHG reductions. Staff will know better when FHWA issues guidance on performance measures.

C. Stickney asked about the performance measures for tracking safety in the transit system, and she asked staff to provide information on the MBTA's performance measures prior to the MPO's next discussion in February. C. Bench and A. McGahan then discussed how some of the themes in MAP-21 would apply to transit, including those themes that address mode share and GHG reduction. It was also noted that the MBTA is developing a Transit Asset Management Plan.

D. Crowley asked if the new performance measures would have any impact on how TIP projects are evaluated. He expressed concern that changes to project scoring could affect the line-up of projects awaiting TIP funding and cause communities to lose their place on the TIP. A. McGahan replied that with performance measures the MPO might have to change its investments if it is not meeting particular performance measures.

D. Crowley asked that the MPO consider devoting a significant amount time at an MPO meeting to the discussion of how the MPO will re-score projects for the TIP and LRTP.

Eric Halvorsen, MAPC, asked for a timeline for when the staff would provide its recommendations and language for performance measures. A. McGahan stated that staff would provide those recommendations in February.

**10. LRTP Planning Tools: Travel Demand Model, Cubeland, and TREDIS—*Scott Peterson, Director of Technical Services, and Ed Bromage, MPO Staff***

S. Peterson and E. Bromage gave presentations about the improvements that have been made to the MPO's travel demand model and new tools that staff will be using to analyze data outputs from the model for the development of the LRTP and performance measures.

It has been over a decade since major changes have been made to the software and data sets that CTPS uses for modeling. Data sets used as inputs to the model include the following: census data; MBTA automated fare data; household survey data; vehicle

speed data; transportation assumptions; and land use forecasts (based on population and employment data provided by MAPC). Outputs from the model include estimates on the usage of the transportation system (such as traffic volumes), air quality impacts, and environmental justice impacts.

### ***Travel Demand Model***

E. Bromage began by giving an overview of the travel demand model. The MPO's model covers 164 municipalities in Eastern Massachusetts, including the 101 municipalities in the Boston Region MPO area. It does not cover the entire MBTA service area. The model is central to the work that CTPS conducts. It is used for freight planning, the development of the LRTP, corridor studies, site impact studies, air quality analyses, forecasting transit ridership, and supporting other models. The model generates data on traffic volumes and speeds for every road on the federal-aid system in the model area.

CTPS is updating the model to keep up with industry software standards, to reflect changes in the highway and transit networks, to add bicycle and pedestrian networks, and to incorporate data from the recently completed statewide household travel survey.

The household travel survey was designed to gather data that would help answer questions that the model is asked to answer, and specifically, to help answer questions about non-motorized travel. The new data allows staff to differentiate between walking and bicycling trips in the model, and to forecast for those modes. The survey also provides extensive information on the mode selection of survey subjects, household characteristics, and detailed data on trip duration and time of travel.

The model software has been updated and the new software provides more capabilities. It allows for the modeling of different MBTA fare structures and can show how fare changes in one area of the system can affect ridership on other areas of the system. It also provides the capability to model the behavior of households that own vehicles with those that do not own vehicles, and to analyze market segments. In addition, the run time of the model is greatly improved with the new software.

The new software is compatible with Microsoft software, many GIS softwares, and Google (which is being used by the MBTA). It is the number one modeling software in the United States and was developed by a vendor based in Newton, MA.

The new data sources in the model give CTPS the ability to model 12 modes (as opposed to six in the old model). The model can give probabilities of the type of mode that a user would choose. Because the model software can read Google software, CTPS can use the MBTA's data to maintain an updated transit network in the model. It

can also read MassDOT's Road Inventory Files directly. CTPS has been working to validate the model with data from on-board passenger surveys.

Using data from the household travel survey, CTPS has been working to better represent trips students take to school in the model. The model now represents trips made by students that are not taken in a school bus (including trips of college students who live in dormitories), but it does not represent trips made on school buses.

In summary, the changes to the model provide the following enhanced capabilities:

- ability to model bicycle and pedestrian travel
- better performance time for model runs
- more functionality for evaluating highway congestion and fare structure impacts
- comparison of the operation of zero-vehicle households compared to households with cars
- better analysis of intersections

### ***CUBELAND and TREDIS***

S. Peterson followed with an overview of two new software tools: CUBELAND and TREDIS.

To conduct air quality analyses, CTPS has used MOBILE 6.2 software, which is required by the U.S. Department of Environmental Protection (EPA). EPA has updated this software. The new MOVES software can provide more detail about how vehicle emissions can change during four periods of the day. It also can provide estimates of GHG emissions which take into account vehicle speed and its relation to carbon dioxide emissions.

CTPS has selected a new land use allocation model, CUBELAND, for examining the interaction between transportation and land use. A land use model takes inputs of population and employment projections and assigns travel trips based on that data. The model that CTPS uses currently does not provide feedback about what those assignments would be if a particular area developed in a way that provided better transportation access or improved connectivity to jobs.

One advantage of CUBELAND is that it has a market pricing variable which is sensitive to real estate market values, which might change as a result of the construction of new transportation projects or the provision of new transportation services. The software provides a "feedback loop" that can take land use assumptions and provide projections for demographic and employment changes. These results could help to address the

issue of gentrification by showing how projects could influence the income levels in a community.

As noted in a previous agenda item, CTPS will be testing TREDIS software as a tool for examining the economic impacts of transportation investment decisions. The travel demand model would feed data on travel times and costs into TREDIS. The outputs of TREDIS include data on job growth, business output, gross domestic product, and societal benefits (such as emissions impacts). Staff will determine what TREDIS outputs are useful for the MPO's planning.

### ***Discussion***

J. Gillooly noted the importance of having the model capture trips taken by students on school buses given the impact those buses have on congestion. E. Bromage agreed and noted that with the appropriate time and resources, staff could incorporate school buses into its modeling process. Several members voiced agreement about the need to capture these trips in the model.

In response to a question from D. Montgomery, E. Bromage reported that CTPS will continue to keep its old models and processes. CTPS staff uses the old models to test whether the new models are forecasting correctly, to validate outputs, and to make adjustments to the new model. CTPS will continue to use the old models to make forecasts on projects that initially were forecast with those models. The new model will be used for new projects, including those in the LRTP now under development.

D. Koses also voiced the need to incorporate school buses in the model, and he remarked on the congestion that is caused by buses and by the vehicles of parents who drive their children to school. He inquired about the source of the data for the improvements to the bicycle and pedestrian network. S. Peterson replied that staff has a variety of data sources including MassDOT's Roadway Inventory File, which contains information the location of sidewalks, roadway shoulders, and bicycle lanes. CTPS also has a staff member who works on the MPO's Livability Program and collects data on bicycle and pedestrian traffic counts. E. Bromage added that to gather data on school bus routes, staff would contact all the school districts in the region and code their school bus routes into the model.

T. Bent asked if results from the new tools would be used for the New Starts application for the *Green Line Extension* project. S. Peterson reported that CTPS and the MassDOT project manager are discussing how to include TREDIS outputs in that application. The application will be due next spring.

T. Bent noted that changes are already being seen in Somerville as a result of the *Green Line Extension* project; real estate prices are rising and low-income people are moving out of the area. He expressed interest in seeing if the model reflects those changes. E. Bromage then noted that the new model will be able to distinguish trip taking between low-income zero-vehicle households and high-income zero-vehicle households. T. Bent noted that this tool will be useful for the City of Somerville as it plans for housing in the project area and aims to prevent low-income people from having to relocate.

### **11.Members Items**

D. Crowley asked for an update on the status of Chapter 90 funding. C. Bench replied that the issue is pending in the legislature. If the transportation bond bill does not pass by January, MassDOT will have to roll back its schedule for project delivery.

J. Gillooly asked for an update on the formation of a committee to review MPOs in the state, which was required by the state legislature, and he asked whether MassDOT has considered a response to that provision. C. Bench replied that the legislation proposed that a study group be formed. If a study group is formed, a topic of discussion may be whether there is a potential for non-federal aid to address some project needs.

### **12.Adjourn**

A motion to adjourn was made by the MetroWest Regional Collaborative (Town of Framingham) (D. Giombetti) and seconded by the North Suburban Planning Council (City of Woburn) (E. Tarallo). The motion carried.



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## Attendance

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### Members

### Representatives and Alternates

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At-Large City (City of Everett)	James Errickson
At-Large City (City of Newton)	David Koses
At-Large Town (Town of Arlington)	Laura Wiener
At-Large Town (Town of Lexington)	Richard Canale
City of Boston (Boston Transportation Department)	Jim Gillooly
	Tom Kadzis
Federal Highway Administration	Michael Chong
Inner Core Committee (City of Somerville)	Tom Bent
Massachusetts Department of Transportation	Clinton Bench
	Marie Rose
Massachusetts Bay Transportation Authority (MBTA)	Ron Morgan
MBTA Advisory Board	Paul Regan
Metropolitan Area Planning Council	Eric Halvorsen
MetroWest Regional Collaborative (Town of Framingham)	Dennis Giombetti
Minuteman Advisory Group on Interlocal Coordination (Town of Bedford)	Richard Reed
North Shore Task Force (City of Beverly)	Denise Deschamps
North Suburban Planning Council (City of Woburn)	Ed Tarallo
Regional Transportation Advisory Council	David Montgomery
South Shore Coalition (Town of Braintree)	Christine Stickney
South West Advisory Planning Committee (Town of Medway)	Dennis Crowley
Three Rivers Interlocal Council (Town of Norwood/NVCC)	Tom O'Rourke

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**Other Attendees Affiliation**

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Sree Allam	MassDOT Office of Transportation Planning
Sarah Bradbury	MassDOT District 3
Gino Carlucci	South West Advisory Planning Committee
Tom Holder	Town of Medway
Elena Mihaly	Conservation Law Foundation
Jeffrey Nutting	Town of Franklin
Steve Olanoff	Three Rivers Interlocal Council / Town of Norwood
Jeffrey Roy	State Representative

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**MPO Staff/Central Transportation Planning Staff**

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Karl Quackenbush, Executive Director  
Ed Bromage  
David Fargen  
Maureen Kelly  
Robin Mannion  
Anne McGahan  
Elizabeth Moore  
Scott Peterson  
Pam Wolfe

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