



Regional Transportation Advisory Council

November 8, 2017, Meeting

3:00 PM, State Transportation Building, Conference Room 4,
Boston, MA

DRAFT Meeting Summary

Introductions

Tegin Teich, Chair (Cambridge), called the meeting to order at 3:00 PM. Members and guests attending the meeting introduced themselves. (For attendance list, see page 8.)

Chair's Report - Tegin Teich

T. Teich explained that changes in the planned presentations at today's meeting were due to the recent release of the Draft Massachusetts Freight Plan, which was released for public comment until December 6, 2017. Staff of the Massachusetts Department of Transportation (MassDOT) were very responsive in talking to Advisory Council about the update to the Freight Plan.

The Advisory Council voted to make the MBTA Ridership Oversight Committee a voting member. Lenard Diggins will be the representative of the group.

T. Teich stated that the topic of transportation mitigation for development projects was brought up by members who were interested in understanding how developments affect the transportation system, particularly the transit system. The State's role in the Massachusetts Environmental Policy Act (MEPA) process and the Central Transportation Planning Staff's (CTPS) role in transportation modeling will be addressed today.

Transportation Mitigation for Development Projects - J. Lionel Lucien, P.E., Public/Private Development Unit, Office of Transportation Planning, MassDOT

J. L. Lucien noted that reviews of private development projects include the MEPA process, the MassDOT permitting process, and transportation impact studies and mitigation.

The MEPA process is for large developments that meet certain transportation thresholds, such as the generation of 2,000 vehicle trips per day on roadways providing access to a single location, or the generation of 1,000 new vehicle trips per day on roadways providing access to a single location and construction of 150 new parking spaces at a single location. The private developer is required to undertake a traffic study when these MEPA thresholds are triggered or if an access permit is required from MassDOT. Specific guidelines for requiring vehicular access permits are listed in MassDOT access permit regulations.

MassDOT Traffic Impact Analysis (TIA) Guidelines were published in 2014 and are the most progressive in the nation for regulating the impact on the transportation system by private development. The regulations represent proactive planning through a scoping meeting or letter. The guidelines require a multimodal transportation analysis, multimodal mitigation plan, and transportation monitoring programs.

For transit, the new approach to mitigation fosters partnerships between the developer and the stakeholder agencies through consultation. They must undertake comprehensive transit analyses for existing and future conditions and develop a comprehensive transit mitigation program and transit monitoring program. Specific TIA procedures help to quantify impacts of transit-based mitigation in situations where transit is a major factor.

J. L. Lucien introduced several examples of projects where before-and-after TIA studies were implemented in the past. These projects include the North Adams Walmart, Route 28 Transit Facilities, Wareham Crossing, Weymouth Southfield and the Everett-Wynn Casino Resort studies. Transit capacity modeling was instrumental in setting mitigation requirements for the projects.

Current notable transit-mitigation projects include the Cambridge Kendall Square Urban Renewal Plan amendment, establishing a fund for transit improvements, and the Boston Seaport Square developments; the latter addresses Silver Line station capacity issues in an ongoing conversation.

The TIA process has created partnerships to support transit through better coordination with transit agencies. A balanced, multimodal mitigation process will help to build up transit

infrastructure and increase transit ridership.

Ongoing challenges in the TIA process include clarifying jurisdictional concerns; working with municipalities in the permitting process; fair-share assignment of mitigation; establishing methodologies for standardizing the funding contribution; and certain limitations of the transit system in general.

How Regional Modeling Informs the MEPA Process for Regionally Significant Projects - Ed Bromage, Manager, Travel Model Development, CTPS

E. Bromage explained that the regional travel demand model is a simulation tool that supports the development of the Long-Range Transportation Plan (LRTP) by creating a platform to predict future conditions and to support scenario planning. The model is made from two components: a supply side (existing transportation infrastructure) and a demand side (demographic and employment data used to predict the quantity and distribution of travel).

The regional travel demand model covers the entire states of Massachusetts and Rhode Island, and the southern third of New Hampshire. It includes 448 communities that combined have a population of more than 8.4 million. Recently, the model was entirely re-calibrated based on travel behavior reflected in the 2011 Massachusetts Household Travel Survey.

Model inputs include more than 27,000 miles of roadway and more than 1,600 transit routes/lines, and committed projects from the LRTP for the year of analysis. The compilation of demographics reflecting the population, household, and employment characteristics have already begun at the UMass Donahue Institute, which is developing municipal projections.

Model outputs include four different time periods for roads (reported in vehicle volumes and turning movements) and for transit (reported in stop-level access/egress volumes and stop-to-stop passenger volumes). Air quality and environmental justice metrics are also model outputs.

E. Bromage defined regionally significant projects on the supply side as those that cost more than \$20 million and that change system capacity. Regionally significant projects on the demand side are projects with regional transportation impacts, unique land uses (Logan Airport, for example), or highly concentrated developments inconsistent with neighboring areas (Wynn Casino, for instance).

An impact analysis is conducted to evaluate how specific developments will affect the transportation network. The Wynn Casino project in Everett was studied through independent research by CTPS staff to develop trip generation rates and trip distribution patterns. This study allowed for the comparison of Wynn's published rates and patterns against CTPS's numbers. Casino traffic volumes by time of day, trip origin/destination tables were then prepared by CTPS.

Trip tables for the casino project were produced and run through the region's mode choice sub-model. The casino's off-site mitigation is reflected in modeled networks and highway and transit trips are assigned to their respective networks. Comparisons can now be made between network volumes with and without the casino.

The model informs the MEPA process by providing an air quality analysis using mobile emissions programs and the vehicle registration data. The model also produces traffic volume and speed data, making noise analyses possible. Also, since market segments are built into the model structure, it is possible to look at different markets and study how they are affected in an environmental justice context. The model is extremely sensitive to highway system capacity, so it can identify how different projects affect speed and congestion levels at roadway segments and intersections. In addition, the model will allow for a user benefit/cost analysis.

Discussion

T. Teich asked how the Wynn Casino project before-and-after results compared with the work completed by the consultant. E. Bromage stated that the project was in the model as a result of the permitting process and that there was not a formal study; rather, a before-and-after study was undertaken to understand how projects of this nature would be properly represented in the model. The only real comparison with the consultant's activity was in the trip generation rates reported in the MEPA process; they were not the same but they were close. The distribution patterns in the MEPA study were not comparable.

In response to a member's question about the cost of running the model, E. Bromage explained that there are many variables, but to run a scenario in the model takes an average of seven person-days and more time to generate reporting outputs such as turning movements or air quality data. The model results are reported in the form of thematic maps and data spreadsheets. As an example, for the Lower Mystic project, six alternatives and a forecast year were reviewed for a total project cost (including meetings) in the \$250,000 range. (R. McGaw)

The predictive validity of the model's forecasting ability often comes down to the fundamental assignment of the land use. For the Central Artery project, for example, the

land use that was predicted by the model runs early on in the project were different from the land use observable today, so the model outputs are not all that predictive. The inputs into the model are kept current with what is known today, which makes it a reliable forecasting tool given current knowledge.

In response to a question, E. Bromage explained how staff determines the transit routes for representation in the model. He said there are many variants to individual routes on the transit side due to bus route flexibility. (B. Steinberg)

M. Moran asked how often the model is updated and about its base-level software. E. Bromage explained that the last household survey was conducted in 2011, but the data from it was not fully processed and used until 2013. An updated survey may help to collect data about newer transportation services such as Uber and Lyft, since neither publish their costs nor their origin-destination data. The software to run the model is updated yearly by the software vendor. There is a rigorous demand on the user license and computer hardware in conducting individual model runs.

M. Wellons was interested in whether the trip data could be used to analyze noise impacts given that vehicle noise is increasing. E. Bromage stated that the process generates traffic volume and speed data, which are inputs to the noise analysis studies. Noise analysis studies are not done in-house. These are more often done for the National Environmental Policy Act (NEPA) process conducted by MassDOT or their consultants.

D. Montgomery asked if any of the surrounding states which are represented in the model actually use or support the model. E. Bromage noted that the information in the model was gathered from publicly available data as well as in conjunction with state planning agencies in Rhode Island and New Hampshire. He noted that although they possess data for their states, they lack the ability to model a large-scale system like the entire commuter rail system in the Boston region.

A. Fragoso asked if autonomous vehicle testing could be incorporated into the model, which would bypass the need to depend on data from Uber and Lyft services. E. Bromage stated that data on rideshare services could be acquired through generic household survey questions, not through a survey of the drivers and passengers on specific rides. He noted that autonomous vehicles and electric vehicles will be studied and evaluated in the near-term.

A. Fragoso asked if the responses from the household survey update might reveal a change in the peak travel hours. E. Bromage noted that the peaks are reflected in the volume data. The Household Survey data already reports the respondent's travel time of day. A version of the survey data where generic census geography replaces individualized

data is publicly available.

T. Teich asked J. L. Lucien if we are using the right tools to determine mitigation. J. L. Lucien stated that, regarding transit, more tools will be needed to develop good mitigation results. T. Teich asked if there is a way to use the Core Capacity Analysis to look at the combined effect of developments on the regional model to better inform the mitigation process and whether there is a way to make the process more proactive with developers. J. L. Lucien stated that there is no way of knowing when the actual project will come online, therefore, it is difficult to study mitigation options at the pre-construction phases of the project. This is being considered at the state level.

S. Zadakis asked J. L. Lucien if the Impact Assessment Plan will be updated in the near future. J. L. Lucien is hoping to assemble a stakeholder group to consider the update of the assessment plan.

Draft Massachusetts Freight Plan - Gabriel Sherman, Capital Planning Group, Office of Transportation Planning, MassDOT

G. Sherman stated that the latest round of federal transportation legislation has a renewed focus on freight planning along with funds dedicated specifically for freight. To qualify for the funds, the state must produce a statewide freight plan to be updated every five years. There are ten specific factors required for the plans, but there is ample room available for states to apply their own approach.

The approach for Massachusetts' review of freight is based on the idea that the plan is an economic foundation reflecting the physical manifestation of the economy. A Freight Advisory Committee (FAC) was appointed with representation from various levels of government, mostly composed of private sector freight-related businesses. The committee sponsored many of the recommendations for the draft plan. The private sector representatives were selected from a series of over 20 interviews with industries around the state. Four public statewide meetings were followed by an open house to hear input from attendees.

The Freight Plan adopted a scenario-based planning approach. Three potential futures were considered in light of urbanization, technology, knowledge-based economy, globalization, and climate change. The idea is to produce a set of recommendations that will work well in several potential futures rather than constrain the thinking to just one possible outcome. The FAC reviewed the inputs and gave advice based on their perspectives.

Part of the scenario-based approach showed that some strategies worked well in a variety

of futures. The goal was to recognize the strategies that likely will fit a variety of futures. The range of strategies covered those which maintain the existing investments while other strategies are more transformational.

Immediate strategies include maintaining the physical condition of key freight assets. Investment in additional truck parking lots and bringing the rails up to the industry standards will allow freight trains to run at full capacity. Immediate strategies try solving the key bottlenecks in the state and they also consider seaports and airports as critical economic generators.

The FAC categorized recommendations based on robust strategies, i.e., those that need to be completed as soon as possible. These might be the installation of intelligent transportation systems and the protection of rail facilities from climate change impacts.

Other changes are categorized as hedging and shaping strategies, or things that could be done to actually change the current direction of the status quo. Strategies that would not be pursued immediately are referred to as deferred strategies.

The draft plan is available online at this link [\(click here\)](#).

Discussion

Two members pointed out that the text of the report is difficult to read based on text color and font and they asked that it be made more accessible visually.

A. Fragoso asked if there is a provision for rail near coasts for addressing climate change considerations. G. Sherman noted that much of the freight in Massachusetts is moved by truck, but major distribution points will still need to plan for climate change impacts.

M. Moran asked about balancing the needs of a passenger system versus the needs of a freight system and the tradeoffs. G. Sherman noted that the fixes often improve both systems. For example, congestion affects everyone. Some strategies will be addressed at the municipal level.

T. Teich asked why there weren't more municipalities on the FAC. G. Sherman stated that they did work with the neighboring MPOs, which have municipal representation, but that they attempted to keep the FAC to a group of about 15 to maximize each committee member's contribution.

D. Montgomery noted that the links to the documents are posted online. There is a 30-page online interactive version as well.

M. Wellons asked if the 286 standard (286,000 pound gross weight limit) for rail freight and

bridge weight restrictions were the reasons double-stacked freight vehicles are prohibited. G. Sherman stated that the rail freight network “Infra-grants” are available for upgrading infrastructure to bear weights above the 286 standard. The upcoming Rail Plan would be the venue for considering the 286 standard.

M. Moran stated that Track 61 to the Seaport is on the City of Boston’s radar as as a track to preserve for freight or passenger rail.

Adjournment

A motion to adjourn was made and seconded. The meeting adjourned at 4:40 PM.

Attendance

Municipalities - Voting

Belmont
Cambridge
Millis

Needham

Westwood

Citizen Advocacy Groups

American Council of Engineering Companies
Association for Public Transportation
Boston Society of Architects
Boston Society of Civil Engineers
CrossTown Connect
MassBike
MBTA Ridership Oversight Committee (ROC)
MoveMassachusetts
National Corridors Initiative
Riverside Neighborhood Association

Agencies Non-Voting

MassDOT - Aeronautics Division
TRIC
Boston Planning & Development Agency
US EPA

Guests

Malden Resident

Staff

Lorenço Dantas
David Fargen

Attendee

Robert McGaw
Tegin Teich
Ed Chisholm

David Montgomery; Rhain
Hoyland
Trevor Laubenstein

Fred Moseley
Barry M. Steinberg
Schuyler Larrabee
AnaCristina Fragoso
Scott Zadakis
Chris Porter
Lenard Diggins
Jon Seward
John Businger
Marilyn Wellons

Michael Glynn
Steve Olanoff
Matt Moran
Eric Ruckauskas

Ed Lowney

Matt Archer
Bill Kuttner