REGIONAL TRANSPORTATION ADVISORY COUNCIL

Regional Transportation Advisory Council

September 14, 2016, Meeting

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

Meeting Summary

Introductions

T. Bennett, Chair (Cambridge) called the meeting to order at 3:00 PM. Members and guests attending the meeting introduced themselves. (For attendance list, see page 7)

Chair's Report – T. Bennett Chair

T. Bennett made several announcements regarding upcoming events and meetings.

- The MPO is scheduled to discuss municipal contributions to transportation projects at its September 15 meeting
- The City of Boston is launching a program to explore self-driving vehicles
- Meetings and conferences in September include: Fast Forward Technology seminar on the 14th; the 2016 Moving Together Conference on September 29th; South Coast Rail public meetings throughout the month; "Rally for Safer Streets" at Boston City Hall Plaza on the 29th; Focus40 Interactive Open House on October 14th; and Volpe speaker series on various dates through November.

Minutes – August 10, 2016

A motion to approve the minutes of the August 10 meeting was made and seconded. The minutes were approved.

Highway Project Pricing and Cost Estimation – David Anderson, Deputy Chief Engineer, Project Management, MassDOT Highway Division

D. Anderson addressed current practices in estimating highway projects, bidding performance and proposed improvements in the process from project concept to

completion. A summary of his remarks is provided next.

In current practice, nearly all Highway Division "Design-Bid-Build Contracts" are unit price based. Items are based on the manual on the Standard Specifications for Highway and Bridges. The bid quantities are based on a project calculation book which allow for certain lump sum items.

Highway designers use a Construction Project Estimator (CPE) application which calculates a weighted average bid price. This substantial database tool uses all data received in responsive bids placed in groups of increasing quantities with outliers removed. It helps the evaluator understand the bidding environment from many different perspectives. Although the tool produces a quantitative list of outcomes, there is still a need for engineering judgment in evaluating the bids. Unique project circumstances may influence costs and support costs such as staging, site access, and third party utility work.

The "Bottoms Up" approach to the current practice estimate first evaluates bid documents including plans, specifications, reports and a site walk. Historical production rates, project add-ons, and risk assessments all contribute to the final bid price. This approach applies to projects based on cost and complexity as determined by the Highway Division. The bid estimates are performed at the 75% design, 100% design, and the Plans, Specifications and Estimates (PS&E) stages of the project. The approach is performed on lump sum items only.

Independent estimates are performed when determined by the Highway Division. These estimates are conducted by an independent firm which clarifies contract details in a reconciliation meeting with the designer of record.

In addition to Highway Division cost estimates, a project will have a total federal participating construction cost estimate (for TIP projects), which includes construction contingencies, traffic police, participating utility force account agreements, and project incentives costs.

MassDOT internally tracks project estimate data to measure low-bid costs versus office estimates, with a goal of having 50 percent of the bids within 10 percent of the office estimate. The 50 percent threshold was achieved in 2013, however, it has ranged from approximately 35 – 49 percent in all of the other previous five years. A similar performance measure looks at bids within 10 percent of office estimate by month using rolling averages.

The Highway Division meets monthly with the Transportation Agency Liaison Committee (TALC), a working committee of the American Council of Engineering

Companies (ACEC). The purpose of the meetings is to discuss project development and project controls within the consultant and construction community. Committee work led to project estimation recommendations that were incorporated into the Chief Engineer's "Improving Project Delivery" Initiative. The general areas addressed included: design contingencies; inflation; utility and traffic police; protocols for cost tracking; common term usage in public outreach; conceptual estimates; and preliminary design estimate.

Improved design contingencies required implementing a procedure that a project is evaluated from the onset with an attempt to assess the risk involved in making the estimate. Very little data is available for projects that are at the conceptual stage of development. It is only when more advanced design review has taken place or when recurring designs have been reviewed will contingency risks be more reliable. Higher risk projects are assigned larger design contingencies and the design contingencies are reduced as the design advances. This design contingency is not the same as a construction contingency, which might include items like sub-surface discoveries.

Estimates are adjusted for inflation to the midpoint of construction. The Highway Division is attempting to ensure consistency in reporting inflation throughout the various reporting mechanisms including STIP, CIP, ProjectInfo, and TIPs.

Utility and traffic police costs will be improved. Historic data on utility relocation costs will be reviewed and condensed into guidance on the development of conceptual utility relocation costs. Similarly, the estimation procedure for traffic police costs will be reviewed and revised as necessary.

In addition to improving protocols for entering costs into ProjectInfo, where all project costs will be tracked, standardized definition of terms and consistency of usage will provide consistency to the planning process.

Other proposed improvements in increasing project estimate accuracy include establishing certain "Rules of Thumb" for approximating project costs at the conceptual stage, or the pre-25% design threshold. Preliminary Design Estimates (where projects have achieved a 25% design completion) will benefit from the development of guidance that provides a framework to designers on the preparation of estimates.

DISCUSSION

In response to a member's question, D. Anderson stated that a good indicator of design quality is to use the cost estimate measured over time from project awarding to the end of construction. (J. McQueen)

D. Anderson stated that incentives and disincentives are used in nearly five percent of

the projects. The incentives work in bringing projects in on time. (M. Gowing)

In response to a question on how to evaluate contractor responsibility, and ability to complete contracts based on past performance (F. DeMasi), D. Anderson stated that there is a robust system of Pre-Qualification and Construction for Contractors operated by the Highway Division. Pre-qualification certifies contractors to bid on projects in various categories (e.g., bridge construction, asphalt work) and it also determines the reliability of the contractor based on specific measures including items like their bonding limits, inventory of machinery, and past project history.

D. Anderson stated that conventional roadway projects have been bid with higher accuracy than projects that have not been undertaken before. This may also relate to the size and scope of a project. (C. Porter)

In response to a member's question concerning the lag in available funding and the timeliness of project completion (R. Flynn), D. Anderson stated that all projects do have a completion date. The contractor can get extensions, without which certain penalties are assessed. Utility placement and project disruption based on third party activities figure prominently in the timing of the projects. Financial incentives can help in getting utility companies to finish work prior to the roadway project.

In response to a member's question on the metrics involved in determining the accuracy of bids (R. McGaw) D. Anderson stated that understanding of the costs at various stages of project development must be addressed in finding the best path to accurate pricing.

Local Impact of Regional Freight Movement – Bill Kuttner, Chief Planner, CTPS

B. Kuttner introduced the current study topic of rest locations for long-distance truck drivers. The MPO freight program was briefly reviewed noting recent efforts related to the South Boston industrial waterfront and a proposed study of statewide industrial geography.

B. Kuttner presented a map of Massachusetts to identify existing and prospective truck rest locations that serve long-distance freight haulers. Well-located rest locations also facilitate efficient deliveries and pickups in the Boston MPO region.

Truck drivers are expected to cover great distances, but not at the expense of safety. Drivers need to rest and strict rules have improved safety. Truck drivers must stop after driving eleven hours and cannot resume driving until they have rested ten hours. When stopping, it is important that the truck stop provides useful services to truck drivers. The

ideal stop will allow for personal safety and the ability to tend to personal details (showering, eating). Some of these services might also be used by the general public.

The rest location system is part of the transportation system. B. Kuttner noted that Western Massachusetts has a number of large rest locations, some of which are being expanded. In Southeastern Massachusetts the need for large truck stops is not as great because trip destinations are probably not too far away and rest can often be arranged at the customer's location.

The area north of the I-90 along the I-495 Corridor appears to be in the most need of stops to facilitate interstate hauling. After Sturbridge, the next large stop is in Kittery, Maine. If a driver reaches the end of the eleven-hour driving period in this area, they may park along a street somewhere because a large truck stop is not available.

Local impacts include curb-space use, loading and unloading supervision, and time constraints imposed by laws governing motor carriers. Another key factor is the expanse of land that truck stops take. Exurban truck stop placement is more attractive as the land is typically less expensive.

The trucking industry is gradually adopting environmentally friendly technologies at truck stops. The Commonwealth can encourage this trend if it is involved in strengthening the rest location system.

DISCUSSION

T. Bennett asked if the stop locations identified on the map were determined scientifically or if they were opportunistic locales. B. Kuttner explained that placement was derived from the combination of reduced parking space availability and the need for a ten-hour rest period in order to comply with new legal requirements.

R. Flynn was interested in how the queuing of trucks from outside of the MPO is being studied so as to minimize the conflict of time and space as freight moves into towns and onto loading docks. B. Kuttner stated that the success of planning for long-distance hauling works more efficiently the local locations will automatically be improved. There will, however, continue to be loading dock conflicts.

M. Gowing suggested a better use of median strips for truck stop resting spaces. B. Kuttner explained that median size was too limited to facilitate a stop area large enough for desired services in demand at truck stops.

D. Montgomery asked if vehicles could remain in motion after the time limit had been reached. B. Kuttner explained that the limit per driver is from the Federal Motor Carrier Safety Administration. If one truck has two drivers on board, they would be able to

continue.

Election Committee – M. Gowing, Chair

M. Gowing explained that the election of candidates for the upcoming year is underway. At the end of today's meeting, all nominations will be closed with a vote on the final candidates held at the October 12 meeting. The term for the officers is November 1, 2016, through October 31, 2017. Any voting member is eligible to vote or to be nominated.

The Nominating Committee is chaired by the previously seated Advisory Council Chair. The current committee chair is M. Gowing. The committee is composed of three other voting members: Gary St. Fleur, Paul Nelson, and Schuyler Larrabee.

M. Gowing nominated Tegin Bennett for Advisory Council Chair on behalf of the committee. The nomination was seconded and accepted by the full Council.

The Nominating Committee did not nominate a candidate for the position of Vice Chair. P. Nelson nominated Mike Gowing for Vice Chair from the floor. The nomination was seconded and accepted by the full Council.

Background information on both candidates will be made available prior to the October 12 meeting.

Old Business, New Business, and Member Announcements

A. Swaine of EPA New England announced the existence of a National Coalition of Truck Parking which is planning truck parking initiatives. She also announced recent activity by the Northeast Diesel Collaborative which started a Northeast Corridor Clean Freight Initiative. There will be a summit this year to discuss these issues.

Adjournment

A motion to adjourn was made and seconded. The meeting adjourned at 4:30 PM.

Attendance

Agencies (MPO & other non-voting)	Attendee
MassDOT	Dave Anderson
Boston Redevelopment Authority	Josh Weiland
U.S. EPA	Abby Swaine

Municipalities (Voting)

Acton	Mike Gowing
Belmont	Robert McGaw
Cambridge	Tegin Bennett
Marlborough	Walter Bonin
Needham	Rhain Hoyland; David Montgomery
Westwood	Trevor Laubenstein

Citizen Groups

American Council of Engineering Companies	Fred Moseley
Association for Public Transportation	Barry Steinberg; Frank DeMasi
Boston Society of Architects	Schuyler Larrabee
Eastern Massachusetts Freight Rail Coalition	Richard Flynn
MassBike	Chris Porter
MASCO	Paul Nelson
MoveMassachusetts	Jon Seward
WalkBoston	John McQueen

Guests

Ed Lowney	Malden Resident

Staff (CTPS)

Matt Archer	Ali Kleyman
David Fargen	Bill Kuttner
Lourenço Dantas	Jen Rowe