

## ACEC/Maine DOT Bridge Design Subcommittee

### MEETING MINUTES

December 10, 2008

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**Attendees:**

**Location:** MDOT Conference Room #318

Wayne Frankhauser    MaineDOT  
Leanne Timberlake    MaineDOT  
Michael Wight        MaineDOT  
Laura Krusinski       MaineDOT  
Jeff Folsom           MaineDOT  
Tim Cote                HNTB  
Steven Hodgdon        VHB

**Notes Taken By:** Tim Cote

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This is the third ACEC/Maine Bridge Design Subcommittee meeting this year.

➤ **Information Dissemination from MaineDOT (Wayne Frankhauser)**

Leanne noted that, with her change in position in the Bridge group, the designer meeting minutes are now being led by Wayne Frankhauser. Based on this change, Wayne will now be providing the summary of designer meeting minutes.

- The Department has placed a renewed emphasis on bridge ratings. Ben Foster is leading an effort to re-rate all bridges in the state to identify structures that require load posting. In cases where the bridge requires posting, the Department is investigating various ways of posting bridges to lessen the impact the public (e.g. limiting the bridge to one truck at a time).
- Wayne emphasized that, as part of new bridge designs, the structures must be load rated. This information needs to be provided to MaineDOT as part of the final submittal.
- The rip-rap standard specification has been re-written to address some recurring material and construction issues. This revised specification will be included in the new standard specifications book (expected to be released in 2009). In the interim, projects including rip-rap should include special provisions 610 and 703. These are available from the Department upon request.
- Geotechnical and soils information in PDR's – A discussion was held to discuss what geotechnical information should be included in draft PDR's. Since draft boring logs and geotechnical reports sometimes have discrepancies, these should not be included in PDR submittals. If the geotechnical report and boring logs are not available for inclusion in the PDR,

a brief written summary from the geotechnical engineer should be included. This summary should include information such as depth to bedrock, soil type, settlement potential, etc.

➤ **Recap of Previous Topics**

- **Bridge funding initiative** - The Department is currently finalizing the 2010-11 work plan and expects to see a continued heavy work load. The Department plans to continue putting out approximately 60 bridges per year.

Additionally, the Department is working to identify projects that may qualify for a Federal Economic Stimulus Plan. Currently \$22 Million in projects have been identified, more may be added. To qualify, projects will likely need to be advertised within 180 days of the stimulus plan's approval. Of the projects identified, 4 are major preservation projects. If an economic stimulus plan is approved, the Department expects this would result in a significant amount of additional work.

- **New BDG release** – Work on the new BDG is continuing. Sections related to pier and retaining wall design are still being developed. Changes will also be made to the seismic provisions. Currently the prescribed process follows the 2008 AASHTO interims. The Department is considering changing this to following the provisions in the AASHTO LRFD Guide Specifications for Seismic Design of Bridges. The targeted publication date for the BDG is mid-2009.

The Department is also developing new load posting criteria. The new criteria are expected to be published around the same time as the new BDG.

- **Consultant Performance Evaluation Form** - The Department is developing a new consultant manual, including a revised version of the consultant evaluation form. The Departments goal is to have the manual in place for the new GCA.

➤ **New Discussion Topics**

- **Consultant member rotation and selection** – Tim noted that each of the Consultant members on the committee are scheduled to rotate off in 2009 and that a discussion regarding new members is necessary. The consultant members thanked the Department for their continued participation and attendance at these meetings, especially considering the busy workload of late, and expressed a desire to continue the committee with new consultant members. Wayne noted he felt the committee was worthwhile and agreed that it should continue for the foreseeable future. The other MaineDOT members agreed.

Tim noted that he, Wade, and Steve have developed a draft rotation schedule that would facilitate a smooth transition. The following was proposed:

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|-----------------------------------|--|
| 1 <sup>st</sup> meeting of 2009 – | Wade’s last meeting,<br>New member #1 rotates on (2-year term) |
| 2 <sup>nd</sup> meeting of 2009 – | Steve’s last meeting<br>New member #2 rotates on (2-year term) |
| 3 <sup>rd</sup> meeting of 2009 – | Tim’s last meeting<br>New member #3 rotates on (2-year term)   |

The Department felt the rotation schedule made sense and the committee decided to move forward with this plan.

Tim noted that, in response to the last ACEC meeting minutes, both Chris Taylor of TY-Lin and Wayne Chadbourne of Haley and Aldrich have expressed interest in becoming part of the committee. Tim noted that, although the committee is meant to be bridge specific, having a member of the geotechnical community as part of the group would be a good compliment to Laura’s participation. The group agreed that both Chris and Wayne would fit well with the committee. Based on TY-Lin expressing interest first, the group agreed to rotate Chris Taylor on in the first meeting of 2009, followed by Wayne Chadbourne in the second meeting of 2009.

Tim noted a third member has not yet been identified. The group agreed to publish the opening in the meeting minutes in hopes of finding a third member. *(Note: Subsequent to this meeting, the committee was contacted by a third consultant expressing interest in joining the group. Therefore, the third opening is tentatively filled pending discussion at the next meeting).*

Leanne inquired who the subcommittee meeting minutes were sent to and asked if all consultants received a copy of the minutes. Her interest was to ensure representatives of all consultant firms that do work with MaineDOT get a copy of the minutes. She also asked Tim to verify Maria Drodz of FHWA was receiving a copy of the minutes.

Tim agreed to verify Maria was on the list and noted the list was handed down to him from the previous committee chair. He added that since that time numerous individuals have been added and that the list now includes approximately 50 individuals. He will reach out to ACEC Maine and investigate expanding the distribution list.

- **PCI Next Beam** – Steve brought up the recent PCI “Next Beam” seminar and asked for the Department’s thoughts. He noted this shape would be used in the 60’ to 100’ span range and should be easier for fabricators to build than standard box beams. His understanding is that both J.P. Carrera and Strescon are looking into the formwork to fabricate this shape and that MassHighway has a handful of projects they are considering the Next Beam on. The Department said they are interested in utilizing this shape in place of box beams where it provides a more economical bridge design. However, they have concerns with being the first agency to specify this beam shape since the cost of fabricating the forms would be very expensive.
- **Corrosion resistant reinforcing steel** – Mike raised the topic of corrosion resistant reinforcing steel and inquired if the group was aware of any recent information on the subject. Steve noted that he was aware of an NCHRP study that examined various reinforcing steel types. The group discussed the use of MMFX, stainless, stainless clad, galvanized, and epoxy coated reinforcing steel. The Department noted that there have been some supply issues with MMFX and that the durability of the material is still a question. They also noted that, although the workability has been fine, MMFX is subject to work hardening – it cannot be easily re-bent. AASHTO limits the use of MMFX to horizontal bars in bridge decks. That said, the Department has had generally good experience when specifying MMFX. The Department noted they strongly discourage the use of epoxy coated rebar since durability of the coating during construction is a concern.

The group also discussed how a corrosion resistant bar type is selected for a project. The bridge design guide currently lists several options but leaves selection of a bar type to the designer. The Department noted this is a decision that should be made on a project-by-project basis with the Department’s PM. Once a bar type is selected, the Department can provide the necessary special provisions. The Department noted they are looking to better define this section of the BDG in the future.

The Department also noted they have an ongoing bridge deck preservation study. As part of this study, several bar types are being investigated. Once completed, this study may provide more insight on the selection of bar types.

The group agreed to discuss the advantages and disadvantages of the various corrosion resistant reinforcing steel types in more detail at the next meeting.

- **Composites** - The group also discussed the use of composites on bridge projects. At the recent transportation conference, several composite bridge types were presented, including the “Hillman Beam” and “FRP Arches”. The Department recently constructed demonstration bridges using each of these technologies and may be willing to consider others. One of the hurdles in

using these new technologies is that they are often not fully addressed by AASHTO. As a result the design needs to be based more on performance criteria.

- **Pedestrian Bridges** – Mike raised the topic of which design philosophy should be used for pedestrian bridges, especially for prefabricated structures. He noted that, although the Department requires LRFD, most manufacturers are resistant to changing from LFD. It may be several years before this disconnect is fully addressed.
  
- **Vehicle and Railway Collision with structures** – Mike raised this as a possible new topic. AASHTO LRFD requires that “piers located within a distance of 30.0 ft. to the edge of roadway, or within a distance of 50.0 ft. to the centerline of a railway track, shall be designed for an equivalent static force of 400 kip”. He noted this is a substantial force that can significantly affect pier design and inquired how other agencies address this issue. Steve noted that Florida Turnpike conducted a consultant study regarding pier protection and design recommendations. He recalled that the report mentioned generally 4ft diameter columns can be reasonably designed for the equivalent collision load. The philosophy is based on allowing the column to sustain damage but not collapse or compromise vertical support.. The group agreed to discuss this topic further at the next meeting.

➤ **Next meetings discussion topics**

- Corrosion resistant reinforcing steel options – Advantages and disadvantages
- Vehicle and railway collision with structures – How can this be best addressed?
- Stay in place form options

➤ **Next Meeting Date**

- March 18, 2009 at 10:00 AM.

I have attempted to summarize discussions held during this meeting as accurately as possible. If there are any items discussed herein that are misrepresented in any way, please contact me within ten working days. In the absence of any corrections or clarifications, it will be understood that these minutes accurately summarize the discussions at the meeting.

Respectfully Submitted,

Tim Cote